

State of Colorado
Energy & Carbon Management Commission1120 Lincoln Street, Suite 801, Denver, Colorado 80203
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Document Number:

403825226

Receive Date:

06/14/2024

Report taken by:

Krystal Heibel

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: CENTRAL OPERATING INC	Operator No: 14855	Phone Numbers
Address: 1600 BROADWAY STE 1050		Phone: (303) 8949576
City: DENVER	State: CO	Zip: 80202
Contact Person: Cullin Johnson	Email: coidenverproduction@gmail.com	Mobile: ()

PROJECT, PURPOSE & SITE INFORMATION

PROJECT INFORMATION

Remediation Project #: 32117 Initial Form 27 Document #: 403540591

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: PIT	Facility ID: 117567	API #: _____	County Name: WASHINGTON
Facility Name: MARICK A-1	Latitude: 39.823931	Longitude: -103.183490	
** correct Lat/Long if needed: Latitude: _____		Longitude: _____	
QtrQtr: SENE	Sec: 3	Twp: 3S	Range: 52W
Meridian: 6	Sensitive Area? Yes		

Facility Type: PIT	Facility ID: 117568	API #: _____	County Name: WASHINGTON
Facility Name: MARICK A-1	Latitude: 39.824248	Longitude: -103.183549	
** correct Lat/Long if needed: Latitude: _____		Longitude: _____	
QtrQtr: SENE	Sec: 3	Twp: 3S	Range: 52W
Meridian: 6	Sensitive Area? Yes		

Facility Type: LOCATION	Facility ID: 317092	API #:	County Name: WASHINGTON
Facility Name: MARICK-63S52W 3SENE	Latitude: 39.822589	Longitude: -103.184897	
** correct Lat/Long if needed: Latitude: Longitude:			
QtrQtr: SENE	Sec: 3	Twp: 3S	Range: 52W Meridian: 6 Sensitive Area? Yes

SITE CONDITIONS

General soil type - USCS Classifications ML	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? No	

Other Potential Receptors within 1/4 mile

Nearby croplands ~40' north of northern pit, creek ~950' south of the southern pit.

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	GROUNDWATER	NA	Laboratory analysis if encountered
Yes	SOILS	TBD	Laboratory analytical results

INITIAL ACTION SUMMARY

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

The Marick Location, and associated Marick A-1 Pits (North and South) and Tank Battery were decommissioned in accordance with ECMC Rule 911.a. and ECMC Rule 913.c.(1). Initial sampling was conducted on 3/4/2024. 17 total samples (including 2 background) were collected and submitted to Elevation Diagnostics for laboratory analysis. Visual inspection and field screening of soils beneath the Tanks and the N&S Marick A-1 Pit Walls were done during sampling activities.

Floor samples from the N&S Pits were not taken on 3/4/2024 due to water within the Pits. Analytical results for the Pit Walls exceeded ECMC Table 915-1 for SAR, pH, Boron, and EC. All soil samples, including the background samples, exceeded ECMC Table 915-1 levels for Arsenic. The soil samples from from beneath the Tanks and Pit Walls were within the Local Clean-Up Level ($1.25 \times 5.18 = 6.48$ mg/kg).

Further assessment for Full Table 915-1 analysis was conducted at the floor of the pits on 5/29/2024. Analytical results for the Pit Floors exceeded ECMC Table 915-1 for SAR, pH, Boron, and EC. All soil samples, including the background samples, exceeded ECMC Table 915-1 levels for Arsenic. The soil samples from from the Pit Floors were less than background Arsenic levels.

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):

Additional soil sampling within the north and south pits will be conducted from the Walls and Floors. In the absence of apparent impacts, soil samples will be submitted to an accredited laboratory for analysis for SSR (pH, EC, SAR, and boron), and Arsenic. With no exceedances in Organics at any point sampled thus far, the Operator is requesting reduced analytical sampling requirements to SSR (pH, EC, SAR, and boron), and Arsenic for all sampling going forward. Additionally, field screening through PID will still be conducted at every sample point, and reported going forward.

No further sampling will be conducted at the Tanks for this investigation.

To continue evaluating the lateral extent, future sampling at the Walls will be comprised of step out samples from each point, and collected at depths of 4' and 6', and analyzed as stated above.

Proposed Groundwater Sampling

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

If groundwater is encountered during facility decommissioning activities, a minimum of one grab sample will be collected as soon as practical. Groundwater samples will be submitted to an accredited laboratory for analysis of BTEX, naphthalene, 1,2,4-tripmethylbenzene, and 1,3,5-trimethylbenzene, using standard methods appropriate for detecting the target analytes in ECMC Table 915-1.

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 18

Number of soil samples exceeding 915-1 15

Was the areal and vertical extent of soil contamination delineated? No

Approximate areal extent (square feet) 13000

NA / ND

-- Highest concentration of TPH (mg/kg) 0.718

Highest concentration of SAR

BTEX > 915-1 No

Vertical Extent > 915-1 (in feet) 4

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

ND Highest concentration of Benzene (µg/l)

NA Highest concentration of Toluene (µg/l)

NA Highest concentration of Ethylbenzene (µg/l)

NA Highest concentration of Xylene (µg/l)

NA 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 (2) background soil samples were taken at eighteen inches (18") bgs. Soil samples were submitted to Elevation Diagnostics for analysis of Boron, EC, pH, SAR, and Table 915-1 Metals. Additional background samples will be conducted at depth of 4' and 6', and sampled for SSR (pH, SAR, EC, and Boron) + 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?

Operator still had water within portions of the N&S pits at time of floor sampling. Samples collected were not impacted by rainwater in pits. Samples from the N&S pit floors will be collected and submitted for laboratory analysis when the water has evaporated or been removed. The Pit sidewall sample had elevated results, so further assessment will be conducted.

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.

NA

REMEDATION 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.

NA

Soil Remediation Summary

☐ In Situ

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

☐ Ex Situ

_____ Excavate and offsite disposal
_____ If Yes: Estimated Volume (Cubic Yards) _____
_____ Name of Licensed Disposal Facility or ECMC Facility ID # _____
_____ Excavate and onsite remediation
_____ 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.

Central Operating, Inc. has complied with General Liability Insurance requirements per Rule 705 and is fully bonded per Rule 702 to fully address the anticipated costs of remediation.

Operator anticipates the remaining cost for this project to be: \$ 10000

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.

The site will be reclaimed with ECMC 1000 Series Reclamation Rules per surface owner direction.

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. 03/01/2025

Proposed date of completion of Reclamation. 03/01/2026

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. 09/08/2023

Actual Spill or Release date, or date of discovery. _____

SITE INVESTIGATION DATES

Date of Initial Actions described in Site Investigation Plan (start date). 10/16/2023

Proposed site investigation commencement. _____

Proposed completion of site investigation. _____

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:

OPERATOR COMMENT

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

Signed: Mackenzie Smith

Title: Staff Engineer

Submit Date: 06/14/2024

Email: msmith@ardorenvironmental.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: Krystal Heibel

Date: 08/20/2024

Remediation Project Number: 32117

COA Type**Description**

	Operator shall soil sample beneath the vertical heater treater for full Table 915-1 analytes and report the results within the next submittal.
	Operator shall provide justification for use of Residential SSL including but not limited to depth to groundwater and the local lithology.
	As stated in Doc# 403719871, Operator shall determine if any of the "Form 19: Spill/Release Reports" Report Criteria, per Rule 912.b.(1) apply for this remediation project. If any of the criteria do apply, Operator shall submit a Form 19 to document the spill/release.
	As stated in Doc# 403719871, Operator shall fully populate the implementation schedule in accordance with Rule 913.d on the subsequent Supplemental Form 27. The "Actual Spill or Release date or date of discovery." information is missing.
	As stated in Doc# 403719871, If a spill/release of produced fluids or E&P waste causes an impact from inorganic constituents to soil, the operator should perform sampling and analysis to fully delineate the lateral and vertical extent of those impacts.
	As stated in Doc#s 403540591, 403649912, & 403719871, If groundwater is encountered, Operator will analyze groundwater samples for Table 915-1 Groundwater Inorganic Parameters (total dissolved solids, sulfate, chloride) and organic compounds in groundwater.
6 COAs	

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**

403825226	INVESTIGATION/REMEDIATION WORKPLAN (SUPPLEMENTAL)
403825276	ANALYTICAL RESULTS
403825279	ANALYTICAL RESULTS
403825297	SOIL SAMPLE LOCATION MAP
403825299	SOIL SAMPLE LOCATION MAP
403894458	FORM 27-SUPPLEMENTAL-SUBMITTED

Total Attach: 6 Files

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

Environmental	ECMC agrees to the reduced analyte list of pH, EC, SAR, and boron, and arsenic.	08/20/2024
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Environmental	Based on the Operator's assessment of background conditions at the subject location, barium results for confirmation soil samples appear to be representative of background as opposed to E&P activities. Therefore, the Operator's demonstration of background will be accepted as an alternative to the default standard in ECMC's Table 915-1.	08/20/2024
Environmental	Remediation #31790 includes wellhead and flowline decommissioning activities. Remediation #32117 (this form) includes pits and location decommissioning.	08/20/2024

Total: 3 comment(s)