

State of Colorado  
Energy & Carbon Management Commission

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



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10/22/2024  
Report taken by:  
Chris Sanchez

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: WESTERN OPERATING COMPANY	Operator No: 95620	Phone Numbers Phone: (303) 893-2438 Mobile: ( )
Address: 1165 DELAWARE STREET #200		
City: DENVER	State: CO	Zip: 80204
Contact Person: Steve James	Email: steve@westernoperating.com	

PROJECT, PURPOSE & SITE INFORMATION

PROJECT INFORMATION

Remediation Project #: 34392 Initial Form 27 Document #: 403372535

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: LOCATION	Facility ID: 324792	API #: _____	County Name: KIOWA
Facility Name: PYLES, BERTHA-619S45W 10NESW	Latitude: 38.416972	Longitude: -102.448024	
** correct Lat/Long if needed: Latitude: _____		Longitude: _____	
QtrQtr: NESW	Sec: 10	Twp: 19S	Range: 45W Meridian: 6 Sensitive Area? Yes

Facility Type: SPILL OR RELEASE	Facility ID: 483705	API #: _____	County Name: KIOWA
Facility Name: Bertha Pyles #2 & 3 Tank Battery	Latitude: 38.416868	Longitude: -102.448000	
** correct Lat/Long if needed: Latitude: _____		Longitude: _____	
QtrQtr: NESW	Sec: 10	Twp: 19S	Range: 45W Meridian: 6 Sensitive Area? Yes

**SITE CONDITIONS**

General soil type - USCS Classifications SM

Most Sensitive Adjacent Land Use Agricultural Field

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	6,500 square feet	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.

On January 15, 2023 at 8:21am a pumper reported that the production tanks were overflowing and the containment area was full. The two wells were shut in. Weber Water Service (vac truck) was called at 8:22am and removed approximately 390 bbls of water from the production tanks, 90 bbls water from within containment and 40 bbls oil from within containment. The recovered water was transported to the Wear SWD and the oil was placed back into production tank 291336. On 1/16/23, approximately 190 bbls of oil was removed from the containment area using a vac truck.

January 17, 2023: The berms were cleaned using a hot oil truck and fresh water.

In total, approximately 149 bbls of oil was recovered from within the containment area and was placed into production tank 291336 and 40 bbls oil was recovered from the containment area and placed into the reclaim tank.

The release was caused when the shut off valve on the free water knock failed and plugged the water dump line.

## 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 ):

On March 31, 2023 and March 28, 2024, seven confirmation soil samples and five background samples were collected following excavation activities within the impacted area. The seven soil samples were submitted to the analytical laboratory to be analyzed for ECMC Table 915-1 analytes. On September 4, 2024, two additional background samples were collected and analyzed for metals and soil suitability parameters. Based on the analytical data, barium and SAR remain elevated at the site and additional background samples will be collected to determine if the barium and SAR concentrations are comparable to natural background concentrations. The Analytical data is summarized in the attached Table 1, and a soil sample location map is provided as Figure 1.

### 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 13  
Number of soil samples exceeding 915-1 7  
Was the areal and vertical extent of soil contamination delineated? Yes  
Approximate areal extent (square feet) 3500

### NA / ND

-- Highest concentration of TPH (mg/kg) 8170  
-- Highest concentration of SAR 19.4  
BTEX > 915-1 No  
Vertical Extent > 915-1 (in feet) 1

### Groundwater

Number of groundwater samples collected 0  
Was extent of groundwater contaminated delineated? No  
Depth to groundwater (below ground surface, in feet) 30  
Number of groundwater monitoring wells installed \_\_\_\_\_  
Number of groundwater samples exceeding 915-1 \_\_\_\_\_

NA 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  
0 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?

A total of six background soil samples were collected and analyzed for ECMC Table 915-1 metals and soil suitability analytes.

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?

Based on the confirmation soil sampling and background soil sampling, only Barium and SAR remain elevated at the site. Additional background soil samples will be collected to compare natural concentrations of metals and soil suitability constituents to observe concentrations in the confirmation soil samples.

## 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 liquids in the containment area were removed using a vac truck and the impacted soil within the containment areas was excavated by a vac truck or scraped.

### 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.

Excavation of the surface soil within the containment area was completed in March 2024. Based on confirmation soil sample analytical results, only Barium and SAR remain elevated at the site. Additional background samples will be collected to determine if the Barium and SAR concentrations are representative of natural soil conditions.

### Soil Remediation Summary

In Situ

Ex Situ

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

\_\_\_\_\_ Yes Excavate and offsite disposal

Chemical oxidation  
 Air sparge / Soil vapor extraction  
 Natural Attenuation  
 Other \_\_\_\_\_

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.

Western Operating has \$7,000,000 in liability insurance and is currently adequately bonded.

Operator anticipates the remaining cost for this project to be: \$ 15000

## 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:

Impacted Soil

Volume of E&P Waste (solid) in cubic yards 35

E&P waste (solid) description Impacted Soil

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

Non-ECMC Disposal Facility: Buffalo Ridge in Keensburg, CO

Volume of E&P Waste (liquid) in barrels 460

E&P waste (liquid) description Produced Water

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

Non-ECMC Disposal Facility: Wear SWD

# 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 area of the release is entirely on the working pad surface and will remain on pad surface after interim reclamation has been conducted, final reclamation will be conducted following completion and approval of a site investigation and remediation work plan.

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. 01/16/2023

Actual Spill or Release date, or date of discovery. 01/15/2023

### SITE INVESTIGATION DATES

Date of Initial Actions described in Site Investigation Plan (start date). 01/15/2023

Proposed site investigation commencement. 01/15/2023

Proposed completion of site investigation. 01/31/2024

### REMEDIAL ACTION DATES

Proposed start date of Remediation. 01/15/2023

Proposed date of completion of Remediation. 03/31/2025

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**

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

Signed: Steve James

Title: President

Submit Date: 10/22/2024

Email: steve@westernoperating.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: Chris Sanchez

Date: 02/04/2025

Remediation Project Number: 34392

**COA Type****Description**

	If groundwater is encountered, the Operator shall sample for Inorganic Parameters (total dissolved solids, sulfate, chloride) in addition to the Organic Compounds
	Operator shall adhere to Protection of Groundwater Soil Screening Levels
	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 continue quarterly reporting until the site investigation is complete and Full Table 915-1 standards are met within the remediation area
	Based on a review of the Analytical Data provided, exceedances of TPH, Organics, Inorganics and metals are still present throughout the location.  The impacted soil will be segregated for proper offsite disposal and the lateral and vertical extent of impacts shall be determined with appropriate confirmation soil sampling. Additional sampling is needed to fully delineate impacted soils  Samples shall be collected for Full Table 915-1 Contaminants of Concern
5 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**

403965434	FORM 27-SUPPLEMENTAL-SUBMITTED
403965578	ANALYTICAL RESULTS
403965585	ANALYTICAL RESULTS
403965594	PHOTO DOCUMENTATION
403966622	SOIL SAMPLE LOCATION MAP

Total Attach: 5 Files

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

Environmental	Operator Comments, "Based on the analytical data, barium and SAR remain elevated at the site and additional background samples will be collected to determine if the barium and SAR concentrations are comparable to natural background concentrations. The Analytical data is summarized in the attached Table 1, and a soil sample location map is provided as Figure 1"...	02/04/2025
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Total: 1 comment(s)