

State of Colorado
Energy & Carbon Management Commission

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Report taken by:
Kari Brown

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 ECOM 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>KERR MCGEE OIL & GAS ONSHORE LP</u>	Operator No: <u>47120</u>	Phone Numbers
Address: <u>P O BOX 173779</u>		Phone: <u>(720) 929-4306</u>
City: <u>DENVER</u> State: <u>CO</u> Zip: <u>80217-3779</u>		Mobile: <u>()</u>
Contact Person: <u>Erik Mickelson</u>	Email: <u>DJRemediation_Forms@oxy.com</u>	

PROJECT, PURPOSE & SITE INFORMATION

PROJECT INFORMATION

Remediation Project #: 36422 Initial Form 27 Document #: 403845162

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>TANK BATTERY</u>	Facility ID: <u>487116</u>	API #: _____	County Name: <u>WELD</u>
Facility Name: <u>FEHRN 7 8 24 25 26 41-32 FacilityTB</u>	Latitude: <u>40.096937</u>	Longitude: <u>-104.794880</u>	
** correct Lat/Long if needed: Latitude: _____		Longitude: _____	
QtrQtr: <u>SENE</u>	Sec: <u>32</u>	Twp: <u>2N</u>	Range: <u>66W</u> Meridian: <u>6</u> Sensitive Area? <u>Yes</u>

Facility Type: <u>SPILL OR RELEASE</u>	Facility ID: <u>488018</u>	API #: _____	County Name: <u>WELD</u>
Facility Name: <u>Fehrn 7 8 24 25 26 41-32 Facility</u>	Latitude: <u>40.096937</u>	Longitude: <u>-104.794880</u>	
** correct Lat/Long if needed: Latitude: _____		Longitude: _____	
QtrQtr: <u>SENE</u>	Sec: <u>32</u>	Twp: <u>2N</u>	Range: <u>66W</u> Meridian: <u>6</u> Sensitive Area? <u>Yes</u>

SITE CONDITIONS

General soil type - USCS Classifications SM

Most Sensitive Adjacent Land Use Crop Land

Is domestic water well within 1/4 mile? Yes

Is surface water within 1/4 mile? No

Is groundwater less than 20 feet below ground surface? Yes

Other Potential Receptors within 1/4 mile

Domestic water well: approximately 810' SW and 1215' SW
Surface water: none
Wetland: an area with wetland characteristics is located approximately 1080' NW
Spring: none
Livestock: none
Occupied Building: multiple occupied buildings located within 1/4 mile
High Priority Habitats: none

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
No	GROUNDWATER	Groundwater not encountered	Groundwater not encountered
Yes	SOILS	18' (N-S) x 55' (E-W) x 4' bgs	Inspection/soil samples/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.

Decommissioning activities were completed at the Fehr 7 8 24 25 26 41-32 production facility on September 1, through September 25, 2024. Groundwater was not encountered during decommissioning activities. Visual inspection and field screening of soils at two separators, 2 meter houses, 2 emission control devices (ECD), one dumpline removal pothole, and 6 aboveground storage tanks (AST) was conducted following removal activities, and soil samples (AST-B01@3", AST-B03@3", AST-B05@3", AST-B07@3", AST-B09@3", AST-B11@3", SEP-B01@5', SEP-B02@6", SEP-B03@5' and SEP-B04@6") were submitted for laboratory analysis to determine if a release occurred. Following removal of the secondary containment liner, soil samples (AST-B01@4', AST-B03@4', AST-B05@4', AST-B07@4', AST-B09@4', AST-B11@4') were collected. Laboratory analytical results indicated that the As, Cd, Se, pH, and/or SAR concentrations in sample AST-B01@4', AST-B03@3", AST-B05@4', AST-B07@4', AST-B09@4', AST-B11@4', SEP-B02@6", and SEP-B04@6" exceeded the applicable ECMC Table 915-1 standards and/or background limits. As such, a Form 19-Initial/Supplemental Spill/Release Report (ECMC Doc.403922979) was submitted on 9/19/2024, and the ECMC issued Spill/Release Point ID 488018. Verification samples (SEP-B04-01@6", AST-B01-01@4', AST-B05-01@4', AST-B07-01@4', AST-B09-01@4', AST-B11-01@4') were collected and submitted for analysis pH, Cd and/or Se only, as applicable. Analytical results for the verification samples indicated that the pH, Cd, and/or Se concentrations in the soil samples were within the applicable Table 915-1 standards and/or within background limits. The facility soil sample and field screening locations are illustrated on Figures 2 through 4. The laboratory analytical reports are attached. The field notes and a photographic log are provided as Attachment A.

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):

From 9/11/24 - 10/21/24, excavation and verification activities were conducted to address the remaining soil impacts at the former separator locations (SEP-B02@6", SEP-B04@6") and to verify the pH, SAR, Cd, and/or Se concentrations at the former ASTs (AST-B01@4', AST-B03@4', AST-B05@4', AST-B07@4', AST-B09@4', AST-B11@4'). 15 confirmation and/or verification soil samples were collected from the base and sidewalls of the final separator excavation extent, at depths ranging from approx. 5'-7' bgs, and from the former AST locations at approx. 4' bgs. The confirmation and verification soil samples collected were submitted for pH, SAR, boron, and/or ECMC Table 915-1 metals. Final analytical results indicated that constituent concentrations in samples collected from the final excavation extents were within the applicable ECMC Table 915-1 standards and/or within background limits.

Proposed Groundwater Sampling

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

Groundwater was not encountered during the initial decommissioning activities or subsequent over-excavation activities.

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):

On September 11, 2024 visual inspections and field screening of soils was conducted at two meter houses, two separators, two ECDs, one dumpline removal pothole, and beneath six former ASTs. Based on the inspection and screening results, hydrocarbon-impacted soils were not observed at the soil screening locations. As a result, no soil samples were submitted for laboratory analysis from these areas in accordance with the ECMC Operator Guidance for Oil & Gas Facility Closure document.

SITE INVESTIGATION REPORT

SAMPLE SUMMARY

Soil

Number of soil samples collected 54
Number of soil samples exceeding 915-1 47
Was the areal and vertical extent of soil contamination delineated? Yes
Approximate areal extent (square feet) 990

NA / ND

-- Highest concentration of TPH (mg/kg) 161.9
-- Highest concentration of SAR 7.24
BTEX > 915-1 No
Vertical Extent > 915-1 (in feet) 7

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?

Background soil samples PW-BG01 - PW-BG04 were collected from non-impacted native material (loamy sand) nearby the tank battery at depths ranging from approximately 0.25' - 6' bgs. Additional background samples collected from the Fehr 7-32 Wellhead (located approximately 85' NW of the facility) from similar depths, soil type (loamy sand/sandy loam), and land use are included. The background soil samples were submitted for laboratory analysis of the Soil Suitability for Reclamation Parameters and ECMC Table 915-1 Metals using standard methods appropriate for detecting target analytes in ECMC Table 915-1. Analytical results for the background soil samples are presented in Tables 3 and 5. The background locations are illustrated on Figure 2 and 5.

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? No

SOURCE REMOVAL SUMMARY

Describe how source is to be removed.

Between September 19, 2024 and October 21, 2024, approximately 590 cubic yards of impacted material were excavated and transported to the Front Range Landfill in Erie, Colorado for disposal. The excavation areas will be backfilled and contoured to match preexisting site conditions.

REMEDICATION 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.

Laboratory analytical results indicated that constituent concentrations in the confirmation soil samples collected from the final excavation extents were in compliance with the applicable ECMC Table 915-1 standards and/or within background limits. Based on the analytical and soil screening data presented herein, assessment is complete at this site and no further activities are required. Groundwater was not encountered. As such, Kerr-McGee is requesting a No Further Action (NFA) determination for this location.

Soil Remediation Summary

In Situ

Ex Situ

_____ Bioremediation (or enhanced bioremediation)

Yes _____ Excavate and offsite disposal

_____ Chemical oxidation

_____ If Yes: Estimated Volume (Cubic Yards) _____ 590

_____ Air sparge / Soil vapor extraction

_____ Name of Licensed Disposal Facility or ECMC 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 NFA Request

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.

KMOG has sufficient insurance and bonding to fully address the anticipated costs of remediation, including the remaining estimated costs for this project. KMOG currently has over 40 million in bonds with the Energy & Carbon Management Commission. The cost for remediation is a preliminary estimate only, costs may change upwards or downward based on site-specific information. KMOG makes no representation or guarantees as to the accuracy of the preliminary estimate.

Operator anticipates the remaining cost for this project to be: \$ 0

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:

N/A

Volume of E&P Waste (solid) in cubic yards 590

E&P waste (solid) description Impacted soil

ECMC Disposal Facility ID #, if applicable: _____

Non-ECMC Disposal Facility: Front Range Landfill in Erie, Colorado

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? 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 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 in accordance with ECMC 1000 Series Reclamation Rules. Timeliness of reclamation initiation and completion will be subject to NFA, surface owner discretion and land use, and suitable ground conditions which allow for execution of surface reclamation activities so as to not cause unwarranted damages.

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? Yes

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

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

SITE RECLAMATION DATES

Proposed date of commencement of Reclamation. 01/06/2025

Proposed date of completion of Reclamation. 01/06/2026

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. 05/29/2024

Actual Spill or Release date, or date of discovery. 09/16/2024

SITE INVESTIGATION DATES

Date of Initial Actions described in Site Investigation Plan (start date). 09/11/2024

Proposed site investigation commencement. 09/11/2024

Proposed completion of site investigation. 10/21/2024

REMEDIAL ACTION DATES

Proposed start date of Remediation. 09/16/2024

Proposed date of completion of Remediation. 10/21/2024

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 was initially submitted on 1/31/25, and was returned to draft on 3/13/25 due to missing analytical summary tables. The analytical summary tables are now attached.

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

Signed: Erik Mickelson

Title: Environmental Lead

Submit Date: 03/13/2025

Email: DJRemediation_Forms@oxy.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: Kari Brown

Date: 09/11/2025

Remediation Project Number: 36422

COA Type**Description**

1 COA	<p>Based on the information presented, it appears that no further action is necessary at this time and the ECMC approves the closure request. However, if future conditions at the site indicate contaminant concentrations in soils exceeding ECMC standards or if groundwater is found to be impacted, then further investigation and/or remediation activities may be required.</p> <p>The surface area disturbed by the remediation activity shall be reclaimed in accordance with the 1000 Series Reclamation Rules. For locations with active ongoing oil and gas operations, comply with Rule 1003 interim reclamation requirements and for locations that will no longer have active oil and gas operations, comply with Rule 1004 Final Reclamation requirements.</p>
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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**

404040964	FORM 27-SUPPLEMENTAL-SUBMITTED
404041436	SOIL SAMPLE LOCATION MAP
404041440	PHOTO DOCUMENTATION
404041483	ANALYTICAL RESULTS
404041484	ANALYTICAL RESULTS
404041485	ANALYTICAL RESULTS
404041486	ANALYTICAL RESULTS
404041487	ANALYTICAL RESULTS
404041488	ANALYTICAL RESULTS
404057829	SOIL SAMPLE LOCATION MAP
404077694	SOIL SAMPLE LOCATION MAP
404077696	SOIL SAMPLE LOCATION MAP
404126026	ANALYTICAL RESULTS

Total Attach: 13 Files

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

		Stamp Upon Approval
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Total: 0 comment(s)