

State of Colorado
Energy & Carbon Management Commission

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



Document Number:
404093269
Receive Date:
04/17/2025
Report taken by:
Laurel Anderson

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 Phone: <u>(720) 9294306</u> Mobile: <u>()</u>
Address: <u>P O BOX 173779</u>		
City: <u>DENVER</u>	State: <u>CO</u>	Zip: <u>80217-3779</u>
Contact Person: <u>Erik Mickelson</u>	Email: <u>DJRemediation_Forms@oxy.com</u>	

PROJECT, PURPOSE & SITE INFORMATION

PROJECT INFORMATION

Remediation Project #: 26737 Initial Form 27 Document #: 403264649

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>WELL</u>	Facility ID: _____	API #: <u>123-23565</u>	County Name: <u>WELD</u>
Facility Name: <u>WARNER 4-18</u>	Latitude: <u>40.144510</u>	Longitude: <u>-104.713160</u>	
** correct Lat/Long if needed: Latitude: _____		Longitude: _____	
QtrQtr: <u>NWNW</u>	Sec: <u>18</u>	Twp: <u>2N</u>	Range: <u>65W</u> Meridian: <u>6</u> Sensitive Area? <u>Yes</u>

Facility Type: <u>SPILL OR RELEASE</u>	Facility ID: <u>487947</u>	API #: _____	County Name: <u>WELD</u>
Facility Name: <u>Warner 4-18 FL Historical Release</u>	Latitude: <u>40.144510</u>	Longitude: <u>-104.713160</u>	
** correct Lat/Long if needed: Latitude: _____		Longitude: _____	
QtrQtr: <u>NWNW</u>	Sec: <u>18</u>	Twp: <u>2N</u>	Range: <u>65W</u> Meridian: <u>6</u> Sensitive Area? <u>Yes</u>

SITE CONDITIONS

General soil type - USCS Classifications CL

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

Multiple buildings and livestock holding pens are located within ¼ mile of the wellhead.
A building is located approximately 640 feet east of the wellhead.
The nearest domestic water well is located approximately 570 feet to the north of the wellhead.

SITE INVESTIGATION PLAN

TYPE OF WASTE:

- | | | |
|--|--|--|
| <input checked="" type="checkbox"/> E&P Waste | <input type="checkbox"/> Other E&P Waste | <input type="checkbox"/> Non-E&P Waste |
| <input checked="" type="checkbox"/> Produced Water | <input type="checkbox"/> Workover Fluids | |
| <input checked="" type="checkbox"/> Oil | <input type="checkbox"/> Tank Bottoms | |
| <input checked="" type="checkbox"/> Condensate | <input type="checkbox"/> Pigging Waste | |
| <input type="checkbox"/> Drilling Fluids | <input type="checkbox"/> Rig Wash | |
| <input type="checkbox"/> Drill Cuttings | <input type="checkbox"/> Spent Filters | |
| | <input type="checkbox"/> Pit Bottoms | |
| | <input type="checkbox"/> Other (as described by EPA) | |

DESCRIPTION OF IMPACT

Impacted?	Impacted Media	Extent of Impact	How Determined
Yes	SOILS	See attached data	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.

On March 15 through March 22, 2023, flowline removal operations were completed on the flowline associated with the Warner 4-18 wellhead. The Warner 4-18 wellhead will be plugged and abandoned at a later date. Soil samples were collected from the locations where the flowline risers were disconnected at the separator (FL-B06@4'), wellhead (FL-B19@4'), and where the flowline changed directions (FL-B01@4' and FL-B13@4'), and were submitted for laboratory analysis of BTEX, 1,2,4- and 1,3,5-TMB, naphthalene, TPH-GRO (C6-C10), DRO (C10-C28), and ORO (C28-C40), pH, EC, SAR, and boron, as described in the Form 27-Initial (Document no. 403264649). Additionally, on June 3, 2024, per the COA issued for the previous Form 27 (Document No. 403428507) three (3) verification soil samples (FL-B06R@4', FL-B13R@4' and FL-B19R@4') were collected to confirm the initial results and were submitted for laboratory analysis of the full Table 915-1 analytical suite to determine if a release occurred. Analytical results indicate that the SAR, EC, and boron concentrations in verification soil sample (FL-B19R@4') exceeded the ECMC Table 915-1 standards and/or site-specific background levels (x 1.25 for metals). As such, a Form 19-Initial/Supplemental Spill/Release Report (Document No. 403919500) was submitted on September 13, 2024. Analytical results indicate that the remaining concentrations in soil samples and/or verification samples collected during flowline removal activities were in compliance with ECMC standards and/or site-specific background levels (x 1.25 for metals).

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 October 10 through December 4, 2024, excavation activities were initiated to address soil impacts at sample location FL-B19@4' and twenty (20) soil samples were collected from the FL-B19@4' excavation extent at depths of approximately 3 through 9 feet bgs. Based on the results of sample FL-B19@4', a waste characterization profile was created and the samples collected from the excavation extent were submitted laboratory analysis of BTEX, TPH, TMB, PAHs, pH, EC, SAR, boron, and select metals (As, Ba, Cd, CR VI, Cu, Pb, Ni, Se, Ag and Zn). Analytical results indicate that impacts remain in the FL-B19@4' excavation area due to boron, SAR and EC. Additional excavation activities are ongoing and will be summarized in a forthcoming form 27-Supplemental update.

Proposed Groundwater Sampling

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

Groundwater was not encountered during flowline removal operations. If groundwater is encountered during future 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 benzene, toluene, ethylbenzene, total xylenes (BTEX), naphthalene, 1,2,4-trimethylbenzene (1,2,4 – TMB), and 1,3,5-trimethylbenzene (1,3,5 – TMB), using standard methods appropriate for detecting the target analytes in ECMC Table 915-1 as described in the approved Form 27 Initial (Document No. 403264649).

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 March 15, through March 22, 2023, visual inspection and field screening of soils was conducted at 15 pothole locations during flowline removal activities. Based on the inspection and screening results, hydrocarbon-impacted soil was not observed at the soil screening locations. As a result, soil samples were not submitted for laboratory analysis from these areas in accordance with the ECMC Operator Guidance for Oil & Gas Facility Closure document. Soil sample location and field screening data are presented in Table 1. Soil analytical results are summarized in Tables 2 through 5. The soil sample and field screening locations are illustrated on Figure 1. The laboratory analytical report is provided as Attachment A. The field notes and photographic log are provided as Attachment B.

SITE INVESTIGATION REPORT

SAMPLE SUMMARY

Soil

Number of soil samples collected 26
Number of soil samples exceeding 915-1 18
Was the areal and vertical extent of soil contamination delineated? No
Approximate areal extent (square feet) 0

NA / ND

-- Highest concentration of TPH (mg/kg) 0.826
-- Highest concentration of SAR 16.9
BTEX > 915-1 No
Vertical Extent > 915-1 (in feet) 9

Groundwater

Number of groundwater samples collected 0
Was extent of groundwater contaminated delineated? Yes
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?

Twenty one (21) background samples were collected from undisturbed native material adjacent to the Warner 4-18 flowline, at comparable depths and soil composition to the confirmation soil samples. The background soil samples were submitted for laboratory analysis of Table 915-1 metals and the Soil Suitability for Reclamation Parameters, using standard ECMC-approved methods appropriate for detecting the target analytes in Table 915-1. Analytical results for the background soil samples are presented in Tables 4 and 5. Background locations are presented in Figure 1.

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?

Additional excavation activities are ongoing and will be summarized in a forthcoming Form 27-Supplemental update.

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.

On March 15, 2023 through December 4, 2024, approximately 90 cubic yards of impacted material were excavated and transported to the Buffalo Ridge Landfill in Keenesburg, Colorado for disposal. Additional excavation activities are ongoing and will be summarized in a forthcoming form 27-Supplemental update. Impacted material will continue to be removed and transported off-site for disposal at a licensed disposal facility.

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.

On October 10 through December 4, 2024, twenty (20) soil samples were collected from the FL-B19@4' excavation extent at depths of approximately 3 through 9 feet bgs. Based on the results of sample FL-B19@4', a waste characterization profile was created and the samples collected from the excavation extent were submitted laboratory analysis of BTEX, TPH, TMB, PAHs, pH, EC, SAR, boron, and select metals (As, Ba, Cd, CR VI, Cu, Pb, Ni, Se, Ag and Zn). Analytical results indicate that impacts remain in the FL-B19@4' excavation area due to boron, SAR and EC. Additional excavation activities are ongoing and will be summarized in a forthcoming form 27-Supplemental update.

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) _____ 90
- _____ Name of Licensed Disposal Facility or ECMC Facility ID # _____
- No _____ 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 Project Status Update

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 Colorado Oil and Gas Conservation 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: \$ 11500

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 90

E&P waste (solid) description Impacted Soil

ECMC Disposal Facility ID #, if applicable: _____

Non-ECMC Disposal Facility: Buffalo Ridge Landfill - Keenesburg, 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? 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? No

Does the previous reply indicate consideration of background concentrations? _____

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. _____

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. 09/13/2024

Actual Spill or Release date, or date of discovery. 08/14/2024

SITE INVESTIGATION DATES

Date of Initial Actions described in Site Investigation Plan (start date). 03/15/2023

Proposed site investigation commencement. 03/15/2023

Proposed completion of site investigation. 05/31/2025

REMEDIAL ACTION DATES

Proposed start date of Remediation. 10/10/2024

Proposed date of completion of Remediation. 05/31/2025

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

Excavation activities are ongoing and will be summarized in a forthcoming form 27-Supplemental update.

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: 04/17/2025 _____

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: Laurel Anderson _____

Date: 12/11/2025 _____

Remediation Project Number: 26737 _____

COA Type**Description**

	<p>Background samples were collected from areas on the former working pad surfaces and/or adjacent to flowlines and may not be representative of background conditions.</p> <p>Operator shall refrain from using these samples as background samples. If Operator proposes additional background sampling; Operator shall obtain background samples from locations not impacted by oil and gas activity, and from similar depths and soil horizons or lithologic materials for comparison to confirmation soil samples.</p> <p>Operator shall reevaluate data collected to date and determine the need for additional site investigation and/or remediation.</p>
	<p>Verification samples/resamples of this magnitude are not considered valid. If the Operator chooses to use verification/resamples for multiple sample points, then Operator shall provide scientific reasoning to justify the verification/resamples.</p>
2 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**

404093269	INVESTIGATION/REMEDATION WORKPLAN (SUPPLEMENTAL)
404101271	ANALYTICAL RESULTS
404101272	ANALYTICAL RESULTS
404101273	ANALYTICAL RESULTS
404101274	ANALYTICAL RESULTS
404101276	PHOTO DOCUMENTATION
404101278	OTHER
404101280	SOIL SAMPLE LOCATION MAP
404101282	SOIL SAMPLE LOCATION MAP
404101283	ANALYTICAL RESULTS
404469394	FORM 27-SUPPLEMENTAL-SUBMITTED

Total Attach: 11 Files

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

Environmental	Operator submitted this form outside of the approved reporting schedule (Quarterly). In accordance with Rule 913.e.(3), Operator will adopt a quarterly reporting schedule (every 90 days); additional violations may result in enforcement.	12/11/2025
---------------	--	------------

Total: 1 comment(s)