

State of Colorado
Energy & Carbon Management Commission

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Report taken by:
Taylor Robinson

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: KERR MCGEE OIL & GAS ONSHORE LP	Operator No: 47120	Phone Numbers Phone: (970) 515-1110 Mobile: ()
Address: P O BOX 173779		
City: DENVER	State: CO	Zip: 80217-3779
Contact Person: Macy Kiel	Email: DJRemediation_Forms@oxy.com	

PROJECT, PURPOSE & SITE INFORMATION

PROJECT INFORMATION

Remediation Project #: 37871 Initial Form 27 Document #: 403961426

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: WELL	Facility ID: _____	API #: 123-14590	County Name: WELD
Facility Name: HERMAN UPRR 31-31 #1	Latitude: 40.186510	Longitude: -104.816340	
** correct Lat/Long if needed: Latitude: _____		Longitude: _____	
QtrQtr: NWNE	Sec: 31	Twp: 3N	Range: 66W Meridian: 6 Sensitive Area? Yes

Facility Type: SPILL OR RELEASE	Facility ID: 489153	API #: _____	County Name: WELD
Facility Name: Herman UPRR 31-31 1	Latitude: 40.186695	Longitude: -104.816311	
** correct Lat/Long if needed: Latitude: _____		Longitude: _____	
QtrQtr: NWNE	Sec: 31	Twp: 3N	Range: 66W Meridian: 6 Sensitive Area? Yes

SITE CONDITIONS

General soil type - USCS Classifications SM

Most Sensitive Adjacent Land Use Surface Water

Is domestic water well within 1/4 mile? Yes

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

Surface water: Speer Canal is approximately 62 feet east of the location.
Wetlands: An area with wetland characteristics is located 62 feet east of the location.
Water Wells: The nearest water well is located 422 feet northeast of the location.
Springs: None.
Occupied Building: A building is located approximately 230 feet northeast of the location.
Livestock: Livestock is located approximately 120 feet east of the location.
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	See attached data	Inspection/groundwater samples/laboratory analytical results
No	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.

A spill was discovered at the Herman UPRR 31-31 1 flowline on January 8, 2025, and one (1) soil sample (WC01@3") was collected and submitted for laboratory analysis of the full Table 915-1. As such, a Form 19-Initial/Supplemental Spill/Release Report (Document No. 404052107) was submitted on January 9, 2025, and the ECOMC issued Spill/Release Point ID 489153. Wellhead cut and cap activities were initiated at the Herman 31-31 1 wellhead location on January 15, 2025. Visual inspection and field screening of soils around the wellhead and associated pumping equipment were conducted following cut and cap operations, and one (1) soil sample (WH-B01@6') was collected and submitted for laboratory analysis of the full Table 915-1 analytical suite to determine if a release occurred. The flowline associated with the wellhead was removed on February 27, 2025, and samples were collected from where the flowline risers were disconnected at the wellhead (FL-B01@3') and the separator (FL-B03@3') and submitted for laboratory analysis of the full Table 915-1 analytical suite. Laboratory analytical results indicated that constituent concentrations for all confirmation soil samples were in compliance with Table 915-1 standards and/or site-specific background levels (x 1.25 metals), with the exception of pH and barium (Ba) in soil sample WH-B01@6'. As such, a verification soil sample (WH-B01@6'V) was collected on January 15, 2025, and submitted for pH and Ba only to verify initial results. Analytical results for verification soil sample WH-B01@6'V were in compliance with Table 915-1 standards. A topographic Site Location Map showing the geographic setting of the site is provided as Figure 1. The soil sample and field screening locations are illustrated on Figure 2 and Figure 3. Soil sample location and field screening data are presented in Table 1. Soil analytical results are summarized in Tables 2 through 5.

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 18, 2025, over-excavation activities were conducted to address soil impacts at the Herman 31-31 1 flowline release location. A waste profile was created based on WC01@3" which was collected from the impacted area of the spill. Confirmation soil samples were submitted for laboratory analysis of the waste profile (TVPH-GRO, 1,2,4-TMB, all metals, and boron) using standard ECOMC-approved methods. Analytical results indicated that constituent concentrations in the soil samples collected from the over-excavation area were in compliance with Table 915-1 standards and/or site-specific background levels (x 1.25 for metals). The excavation extent confirmation soil sample locations are illustrated on Figure 4.

Proposed Groundwater Sampling

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

Between April 16 and 18, 2025, groundwater was encountered in the flowline excavation at approximately 4-feet below ground surface (bgs). One (1) groundwater samples (REL-GW01) was collected and submitted for laboratory analysis of BTEX, naph, 1,2,4- and 1,3,5-TMB, by USEPA Method 8260, as well as TDS, chloride, and sulfate (inorganics). Analytical results indicated that the groundwater sample was in compliance with ECMC Table 915-1 standards and/or site-specific background standards (x1.25 for inorganics). The groundwater sample location is illustrated on Figure 4.

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):

Between April 15 and 16, 2025, visual inspection & field screening of soils was conducted at four (4) sidewall locations within the Herman 31-31 1 wellhead excavation area, four (4) locations at the ground surface adjacent to the excavation, and one (1) pothole location during flowline removal activities. Hydrocarbon impacted soil was not observed at the soil screening locations, and no soil samples were submitted for laboratory analysis from these areas in accordance with the ECMC Operator Guidance document. On January 30, 2025, a soil gas survey was conducted at three (3) soil vapor points (SVP01-SVP03) installed adjacent to the former wellhead following cut and cap operations. GEM 5000 field readings were non-detect for methane for the three (3) vapor points surveyed. The soil vapor screening results are summarized in Table 7. The laboratory analytical reports, field notes, and a photographic log are provided as attachments.

SITE INVESTIGATION REPORT

SAMPLE SUMMARY

Soil	NA / ND
Number of soil samples collected <u>10</u>	-- Highest concentration of TPH (mg/kg) <u>1.53</u>
Number of soil samples exceeding 915-1 <u>1</u>	-- Highest concentration of SAR <u>5.54</u>
Was the areal and vertical extent of soil contamination delineated? <u>Yes</u>	BTEX > 915-1 <u>No</u>
Approximate areal extent (square feet) <u>175</u>	Vertical Extent > 915-1 (in feet) <u>4</u>
Groundwater	
Number of groundwater samples collected <u>1</u>	ND Highest concentration of Benzene (µg/l) _____
Was extent of groundwater contaminated delineated? <u>Yes</u>	ND Highest concentration of Toluene (µg/l) _____
Depth to groundwater (below ground surface, in feet) <u>4</u>	ND Highest concentration of Ethylbenzene (µg/l) _____
Number of groundwater monitoring wells installed <u>0</u>	ND Highest concentration of Xylene (µg/l) _____
Number of groundwater samples exceeding 915-1 <u>0</u>	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?

Eleven (11) background soil samples were collected from undisturbed native material adjacent to the former wellhead, at comparable depths and soil composition to the confirmation soil samples. Additionally, soil samples were utilized from undisturbed native material collected adjacent to the Herman UPRR 31-31 1 Facility located approximately 60 feet north from similar depths, the same NRCS soil type (Tassel fine sandy loam), and the same land use. 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. Background groundwater samples were collected from the former wellhead and submitted for laboratory analysis of TDS, chlorides, and sulfate. Analytical results for the background groundwater samples are summarized in Table 6.

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.

On March 18, 2025, approximately 20 cubic yards of impacted material were excavated from the flowline excavation area and transported to the Kerr-McGee Land Treatment Facility in Weld County, Colorado for disposal. The excavation areas were subsequently backfilled and re-graded to match preexisting conditions.

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.

Analytical results for the final confirmation soil, verification soil, and groundwater samples were in compliance with ECMC Table 915-1 standards and/or site-specific backgrounds levels (x 1.25 for metals and inorganics). Based on the analytical and soil screening data presented herein, assessment is complete at this site and no further activities are required. 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) 20

_____ 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 and 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:

NA

Volume of E&P Waste (solid) in cubic yards 20

E&P waste (solid) description Impacted soil

ECMC Disposal Facility ID #, if applicable: _____

Non-ECMC Disposal Facility: Kerr-McGee Land Treatment Facility - Weld County, 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 reseeded 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. 07/31/2025

Proposed date of completion of Reclamation. 07/31/2026

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. 08/06/2024

Actual Spill or Release date, or date of discovery. 01/08/2025

SITE INVESTIGATION DATES

Date of Initial Actions described in Site Investigation Plan (start date). 01/08/2025

Proposed site investigation commencement. 01/08/2025

Proposed completion of site investigation. 03/18/2025

REMEDIAL ACTION DATES

Proposed start date of Remediation. 03/18/2025

Proposed date of completion of Remediation. 03/18/2025

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

Based on the analytical results and soil screening data presented herein, Kerr-McGee is requesting an NFA determination for this location.

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

Signed: Macy Kiel

Title: HSE Advisor

Submit Date: 06/27/2025

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: _____

Date: _____

Remediation Project Number: 37871

COA Type**Description**

0 COA	
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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
404236309	FORM 27-SUPPLEMENTAL-SUBMITTED
404260161	SITE MAP
404260162	SOIL SAMPLE LOCATION MAP
404260164	SOIL SAMPLE LOCATION MAP
404260165	SOIL SAMPLE LOCATION MAP
404260167	SITE MAP
404260168	ANALYTICAL DATA SUMMARY TABLE(S)
404260170	PHOTO DOCUMENTATION
404260171	OTHER
404260172	LABORATORY ANALYTICAL REPORT
404260174	LABORATORY ANALYTICAL REPORT
404260175	LABORATORY ANALYTICAL REPORT
404260177	LABORATORY ANALYTICAL REPORT
404260178	LABORATORY ANALYTICAL REPORT
404260179	LABORATORY ANALYTICAL REPORT

Total Attach: 15 Files

General Comments

User Group	Comment	Comment Date
Environmental	<p>This Form has been denied. As required in Form 19-Supplemental Doc# 404060422, Operator shall collect all confirmation soil samples as described in the Rule 915.e.(2) Guidance Document. Operator will analyze soil samples for TPH (C6-C36), Table 915-1 Organic Compounds in Soil, including PAHs, Table 915-1 metals, and Table 915-1 Soil Suitability for Reclamation (Electrical conductivity, Sodium adsorption ratio, and pH by saturated paste method, and boron (hot water soluble)).</p> <p>Note: This includes a clean base sample (below fill material and impacts) and all sidewall samples.</p>	11/25/2025
Environmental	If groundwater is encountered during the investigation, characterization of the vadose zone is still required by submitting soil samples from the unsaturated zone for laboratory analysis as well as collecting any additional groundwater grab samples.	11/25/2025

Environmental	All confirmation soil samples shall be collected at a depth to ensure samples are representative conditions of in-situ soil beneath the backfill of excavations conducted during removal of impacted material near the flowline release.	11/25/2025
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Total: 3 comment(s)

