

State of Colorado
Energy & Carbon Management Commission

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404157180
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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: (720) 929-4306 Mobile: ()
Address: P O BOX 173779		
City: DENVER	State: CO	Zip: 80217-3779
Contact Person: Erik Mickelson	Email: DJRemediation_Forms@oxy.com	

PROJECT, PURPOSE & SITE INFORMATION

PROJECT INFORMATION

Remediation Project #: 32989 Initial Form 27 Document #: 403590911

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 #: 123-11370	County Name: WELD
Facility Name: KARL ELLIOTT GAS UNIT TRU 1	Latitude: 40.228640	Longitude: -104.919550	
** correct Lat/Long if needed: Latitude: _____		Longitude: _____	
QtrQtr: SWNW	Sec: 17	Twp: 3N	Range: 67W Meridian: 6 Sensitive Area? Yes
Facility Type: SPILL OR RELEASE	Facility ID: 486308	API #: _____	County Name: WELD
Facility Name: Elliott Karl Unit True 1 Wellhead	Latitude: 40.228640	Longitude: -104.919550	
** correct Lat/Long if needed: Latitude: _____		Longitude: _____	
QtrQtr: SWNW	Sec: 17	Twp: 3N	Range: 67W 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? No

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

Wetland 350 feet (ft) southeast. Agriculture. Groundwater at approximately 5.5 ft below ground surface (bgs).

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	GROUNDWATER	Inorganic impacts observed	Groundwater Samples/Laboratory Analytical Results
Yes	SOILS	25'(N-S) x 25'(E-W) x 8' bgs	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.

Wellhead cut and cap operations were completed at the Elliott Karl Unit True 1 wellhead on February 26, 2024. Groundwater was encountered in the excavation at approximately 5.5 ft bgs. Visual inspection and field screening of soils around the wellhead and associated pumping equipment was conducted following cut and cap operations, and a soil sample (B01@6') was submitted for analysis of full list Table 915-1 constituents to determine if a release occurred. Laboratory analytical results indicated that 1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene (TMBs), and lead impacts exceeding the ECMC Table 915-1 allowable levels or background level were present at the former wellhead location. As such, a Form 19 Initial/Supplemental Spill/Release Report (Document No. 403702004) was submitted on March 1, 2024 and the ECMC issued Spill/Release Point ID 486308. The flowline associated with the wellhead was removed between February 26 and April 1, 2024 and soil samples were collected from the locations where the flowline risers were disconnected from the wellhead (WH01-RISER@3') and from the separator (SEP01-RISER@4'), from the location where field indication of potential impact was present (FL01@3'), and from the location where the flowline changed direction (FL02@3'). The samples were submitted for analysis of full list Table 915-1 constituents to determine if a release occurred. Laboratory analytical results indicated that lead impacts exceeding the ECMC Table 915-1 allowable level were present at the former wellhead riser location. The wellhead excavation and flowline are depicted on Figures 2 and 3. The PID readings and soil sample results are summarized in Tables 1 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):

From June 15, 2023 through October 11, 2024, excavation activities were conducted to address remaining soil impacts at the wellhead location (WH01-RISER@3', B01@6'). Laboratory analytical results indicated that all samples at the extent of the excavation were compliant with ECMC Table 915-1 and/or within site-specific background limits. Soil analytical results are summarized in Tables 2-5. Soil sample locations are depicted in Figures 2, 3, and 5.

Proposed Groundwater Sampling

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

One grab source zone groundwater sample (GW01) was collected from the wellhead excavation on February 26, 2024, again on June 19, 2024, and submitted for analysis of Full Table 915-1 constituents in groundwater. Additionally, one grab background groundwater sample (GW-BG05) was collected on February 27, 2024, for Table 915-1 inorganic constituents in groundwater. Based on the laboratory analytical results, groundwater exceeds the ECMC Table 915-1 allowable level and background level for chloride. As such, groundwater monitoring wells will be installed at the site, and groundwater samples will be collected every quarter. Samples will be analyzed for Full Table 915-1 constituents to delineate the extent of impacts related to GW01. The excavation groundwater sample and background sample locations are depicted in Figures 2 and 6. The groundwater sample analytical results are summarized in Table 6.

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 February 26 and March 29, 2024, visual inspection and field screening of soils were conducted at four sidewall locations within the cut and cap excavation area, four locations at the ground surface adjacent to the excavation, and two flowline potholes. Based on the inspection and screening results, hydrocarbon-impacted soil was not observed at the screening locations, and no soil samples were submitted for laboratory analysis from these areas, in accordance with the ECMC Operator Guidance.
 On March 5, 2024, a soil gas survey was conducted at five soil vapor points installed adjacent to the former wellhead location following cut and cap operations. GEM 5000 field readings were all non-detect for methane at all soil vapor points. The soil vapor point locations are illustrated on Figure 2. The soil vapor field form is included as an attachment.

SITE INVESTIGATION REPORT

SAMPLE SUMMARY

Soil	NA / ND
Number of soil samples collected <u>37</u>	-- Highest concentration of TPH (mg/kg) <u>255.8</u>
Number of soil samples exceeding 915-1 <u>31</u>	-- Highest concentration of SAR <u>5.28</u>
Was the areal and vertical extent of soil contamination delineated? <u>No</u>	BTEX > 915-1 <u>No</u>
Approximate areal extent (square feet) <u>676</u>	Vertical Extent > 915-1 (in feet) <u>6</u>
Groundwater	
Number of groundwater samples collected <u>2</u>	-- Highest concentration of Benzene (µg/l) <u>1.01</u>
Was extent of groundwater contaminated delineated? <u>No</u>	-- Highest concentration of Toluene (µg/l) <u>1.28</u>
Depth to groundwater (below ground surface, in feet) <u>5</u>	-- Highest concentration of Ethylbenzene (µg/l) <u>2.08</u>
Number of groundwater monitoring wells installed <u>0</u>	-- Highest concentration of Xylene (µg/l) <u>8.74</u>
Number of groundwater samples exceeding 915-1 <u>1</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?

Background soil samples (Native-BG01@3' - Native-BG08@6', and BG01@3' - BG05@6', and BG08@3' - BG10@6') were collected from native material adjacent to the wellhead cut and cap excavation. Twelve additional background soil samples were collected as part of the Elliot 21, 22-17 wellheads decommissioning activities (Rem No. 33073), located in the same quarter section, NRCS soil type and from similar depths. The background soil samples were submitted for laboratory analysis of pH, specific conductivity (EC), sodium adsorption ration (SAR), boron, and metals using ECMC-approved methods. Laboratory analytical results indicate that EC, SAR, pH, boron, arsenic, barium, hexavalent chromium, lead, and selenium are naturally high in the native soil. The background soil sample laboratory analytical results are summarized in Tables 3 and 5. The background soil sample locations are depicted on Figures 2, 4 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?

Monitoring wells will be installed to delineate the impacts. Proposed monitoring well locations are depicted on Figure 6. The monitoring well installation scope of work will be submitted in a subsequent Form 27 Supplemental report.

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.

Analytical results indicate that constituent concentrations in the soil samples collected from the final excavation extents were in compliance with the applicable ECMC Table 915-1 standards and/or within site-specific background levels (x 1.25 for metals).

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.

Analytical results indicate that constituent concentrations in the soil samples collected from the final excavation extents were in compliance with the applicable ECMC Table 915-1 standards and/or within site-specific background levels (x 1.25 for metals).

Soil Remediation Summary

In Situ

Ex Situ

_____ Bioremediation (or enhanced bioremediation)

Yes _____ Excavate and offsite disposal

_____ Chemical oxidation

If Yes: Estimated Volume (Cubic Yards) _____ 180

_____ Air sparge / Soil vapor extraction

Name of Licensed Disposal Facility or ECMC Facility ID # _____

_____ Natural Attenuation

No _____ 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.

Five source zone groundwater monitoring wells will be installed near the wellhead excavation extent at the site. Monitoring wells will be sampled every quarter and analyzed for Full Table 915-1 constituents to determine the extent of dissolved-phase groundwater impacts. Proposed monitoring well locations are depicted on Figure 6.

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 Progress report

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: \$ 12500

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 180

E&P waste (solid) description Impacted soil

ECMC Disposal Facility ID #, if applicable:

Non-ECMC Disposal Facility: Front Range Landfill, Erie, CO

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?

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 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.

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. 09/12/2023

Actual Spill or Release date, or date of discovery. 02/28/2024

SITE INVESTIGATION DATES

Date of Initial Actions described in Site Investigation Plan (start date). 02/26/2024

Proposed site investigation commencement. 02/26/2024

Proposed completion of site investigation. 04/01/2024

REMEDIAL ACTION DATES

Proposed start date of Remediation. 02/28/2024

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

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: Erik Mickelson _____

Title: Environmental Lead _____

Submit Date: 06/09/2025 _____

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: 32989 _____

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**

404157180	FORM 27-SUPPLEMENTAL-SUBMITTED
404180927	ANALYTICAL RESULTS
404180936	ANALYTICAL RESULTS
404180937	ANALYTICAL RESULTS
404180939	ANALYTICAL RESULTS
404180941	ANALYTICAL RESULTS
404180942	ANALYTICAL RESULTS
404180944	ANALYTICAL RESULTS
404180945	ANALYTICAL RESULTS
404180947	ANALYTICAL RESULTS
404180949	ANALYTICAL RESULTS
404180950	ANALYTICAL RESULTS
404233544	ANALYTICAL DATA SUMMARY TABLE(S)
404233559	PHOTO DOCUMENTATION
404233565	SITE MAP
404233566	GROUND WATER SAMPLE LOCATION
404233613	SOIL SAMPLE LOCATION MAP
404233615	SOIL SAMPLE LOCATION MAP
404233616	SOIL SAMPLE LOCATION MAP
404233617	SOIL SAMPLE LOCATION MAP

Total Attach: 20 Files

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

Environmental	ECMC has denied this Form 27 for the following reasons: Per Document #403884995, ECMC has not approved soil samples NATIVE-BG05@3,6' and NATIVE-BG06@3,6' from Remediation Project #33073. Those samples are referenced here. Note Document #403884995 was reviewed by ECMC on 10/17/2024 predating the submission of this form and resubmission of these samples.	09/09/2025
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Total: 1 comment(s)