

State of Colorado  
Energy & Carbon Management Commission

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Document Number:  
404149210  
Receive Date:  
05/27/2025

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: <u>KERR MCGEE OIL &amp; GAS ONSHORE LP</u>	Operator No: <u>47120</u>	<b>Phone Numbers</b>
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 #: 34404 Initial Form 27 Document #: 403706160

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>LOCATION</u>	Facility ID: <u>317553</u>	API #: _____	County Name: <u>WELD</u>
Facility Name: <u>UPRR 42 PAN AM-63N66W 29NWSW</u>	Latitude: <u>40.193850</u>	Longitude: <u>-104.808230</u>	
	** correct Lat/Long if needed: Latitude: <u>40.193122</u>	Longitude: <u>-104.808243</u>	
QtrQtr: <u>NWSW</u> Sec: <u>29</u> Twp: <u>3N</u> Range: <u>66W</u> Meridian: <u>6</u> Sensitive Area? <u>Yes</u>			

Facility Type: <u>SPILL OR RELEASE</u>	Facility ID: <u>486981</u>	API #: _____	County Name: <u>WELD</u>
Facility Name: <u>UPRC29-11K&amp;14K, UP42 Facility</u>	Latitude: <u>40.193122</u>	Longitude: <u>-104.808243</u>	
	** correct Lat/Long if needed: Latitude: _____	Longitude: _____	
QtrQtr: <u>NWSW</u> Sec: <u>29</u> Twp: <u>3N</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 Agriculture

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

Agriculture. No other potential receptors were identified in a 1/4 mile radius. Groundwater at approximately 20 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	TBD	Groundwater Samples/Laboratory Analytical Results
Yes	SOILS	TBD	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 UPRC 29-11K&14K, UP42 Facility on June 4, 2024. Groundwater was encountered in the facility excavation at a depth of 20 ft bgs. Visual inspection and field screening of soil at two aboveground storage tanks (ASTs), two produced water vessels (PWVs), one emission control device (ECD), two meter houses, two dumphine locations, and three separators were conducted following removal activities. Soil samples AST01@3', AST02@1', PWV01-B01@1', PWV01-N01@3', PWV02-B02@4', PWV02-W01@2', FL01@3', FL02@4', SEP01-INLET@4', SEP01-OUTLET@4', SEP02-INLET@3', SEP02-OUTLET@3', SEP03-INLET@3', and SEP03-OUTLET@3' were submitted for analysis of full list Table 915-1 constituents to determine if a release occurred. Laboratory analytical results indicated that total petroleum hydrocarbons (TPH), 1,2,4- and 1,3,5-trimethylbenzene (TMB), polycyclic aromatic hydrocarbon (PAH), and/or pH impacts exceeding the ECMC Table 915-1 allowable levels and background levels were present at the PWV01-N01@3', PWV02-B02@4', SEP01-INLET@4', SEP01-OUTLET@4', SEP02-OUTLET@3', and FL02@4' locations. As such, a Form 19 Initial/Supplemental Spill/Release Report (Document No. 403816680) was submitted on June 7, 2024, and the ECMC issued Spill/Release Point ID 486981. The analytical results for the remaining soil samples were in compliance with the ECMC Table 915-1 allowable levels or background levels x1.25 for Table 915-1 metals. The facility soil sample locations are depicted on Figures 1A and 1B. The PID readings and soil sample results are summarized in Tables 1 and 2, respectively.

Excavation activities are ongoing and details will be provided in a subsequent Form 27 Supplemental report.

### 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 ):

Between 6/4/24 & 3/24/25, excavation activities were conducted to address soil impacts at the tank battery & 169 soil samples were collected from the base & sidewalls of the final excavation extent at depths ranging between 7 & 20 ft bgs. The soil samples were submitted for analysis of the site-specific waste profile, including TPH, benzene, toluene, ethylbenzene, total xylenes (BTEX), TMBs, PAHs, sodium adsorption ratio (SAR), pH, & select Table 915-1 metals. Results indicate that TPH, benzene, ethylbenzene, total xylenes, TMBs, PAHs, pH, arsenic, barium, cadmium, hexavalent chromium, lead, & nickel impacts exceeding the Table 915-1 allowable levels & background levels remain in the excavation. Excavation activities are ongoing. The lab reports are attached.

#### Proposed Groundwater Sampling

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

On November 7, 2024, one groundwater sample (GW01) was collected from the excavation at a depth of 20 ft bgs. The groundwater sample was submitted for analysis of full list Table 915-1 constituents in groundwater. Based on the laboratory analytical results, groundwater concentrations exceeded the ECMC Table 915-1 allowable levels for TMBs, chloride, and sulfate. Background groundwater samples are needed to assess compliance of Total Dissolved Solids (TDS), chloride, and sulfate. The groundwater sample location is depicted on Figure 1B. The groundwater sample analytical results are summarized in Table 3.

**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 June 4, 2024, visual inspections and field screening of soil was conducted at the base and three sidewalls for each AST, three sidewalls of each PWV excavation, the ECD, and two meter house locations. 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. A photographic log is attached.

On November 7, 2024, two test pits were advanced outside of the excavation extents in an attempt to delineate the remaining soil impacts at the site. The test pit samples were submitted for analysis of the site-specific waste profile. Laboratory analytical results indicate that lateral and vertical delineation have not yet been achieved. Assessment activities are ongoing.

**SITE INVESTIGATION REPORT**

**SAMPLE SUMMARY**

Soil	NA / ND
Number of soil samples collected <u>380</u>	-- Highest concentration of TPH (mg/kg) <u>1852</u>
Number of soil samples exceeding 915-1 <u>276</u>	-- Highest concentration of SAR <u>6.51</u>
Was the areal and vertical extent of soil contamination delineated? <u>No</u>	BTEX > 915-1 <u>Yes</u>
Approximate areal extent (square feet) <u>95758</u>	Vertical Extent > 915-1 (in feet) <u>20</u>
<b>Groundwater</b>	
Number of groundwater samples collected <u>1</u>	ND Highest concentration of Benzene (µg/l) <u>          </u>
Was extent of groundwater contaminated delineated? <u>No</u>	ND Highest concentration of Toluene (µg/l) <u>          </u>
Depth to groundwater (below ground surface, in feet) <u>20</u>	-- Highest concentration of Ethylbenzene (µg/l) <u>84.3</u>
Number of groundwater monitoring wells installed <u>0</u>	-- Highest concentration of Xylene (µg/l) <u>508</u>
Number of groundwater samples exceeding 915-1 <u>1</u>	NA Highest concentration of Methane (mg/l) <u>          </u>
<b>Surface Water</b>	
<u>0</u> Number of surface water samples collected	
<u>          </u> 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?

One tank battery background soil sample was collected but is not being applied because it was consumed by the tank battery excavation. Twenty background soil samples were collected from the native material outside of the facility excavation. Thirty-six background samples were collected as part of the UPRC 29-11K, UPRC 29-14K, & Miller 19-29 wellheads cut & cap activities (Rem# 34394, 34396, & 34400) located 1560 ft northeast, 1570 ft southeast, & 660 ft southeast, respectively, from similar depths (3' & 6'), & NRCS soil type (loamy sand). Background soil samples were submitted for analysis of pH, electrical conductivity (EC), SAR, boron, & Table 915-1 metals using ECMC-approved methods. Results indicate that SAR, pH, arsenic, barium, cadmium, hexavalent chromium, lead, nickel, & selenium are naturally high in the native soil. The background soil sample analytical results are summarized in Table 2. The background soil sample locations are illustrated on Figure 2.

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?

Excavation activities are ongoing and details will be provided in a subsequent Form 27 Supplemental report.

Groundwater monitoring wells will be installed to delineate the dissolved-phase plume. The monitoring well installation scope of work will be submitted in a subsequent Form 27 Supplemental report following completion of excavation activities.

## 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.

Impacted soil from the tank battery excavation will be removed and transported to a licensed disposal facility. Final disposal information will be provided upon completion of excavation activities. Disposal records will be kept on file and available upon request. The excavation areas will be backfilled and contoured to match pre-existing 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.

Laboratory data indicate that TPH, benzene, ethylbenzene, total xylenes, TMBs, PAHs, pH, arsenic, barium, cadmium, hexavalent chromium, lead, and nickel impacts exceeding the Table 915-1 allowable levels and background levels remain in the tank battery excavation. Groundwater was encountered at approximately 20 ft bgs. Analytical results indicate that groundwater concentrations exceeded the ECMC Table 915-1 allowable levels for TMBs, chloride, and sulfate. Excavation activities are ongoing and details will be summarized in a subsequent Form 27 Supplemental report.

Between November 13, 2024 and April 4, 2025, approximately 4,130 pounds of COGAC®, a carbon-based bioremediation product designed to capture and degrade petroleum hydrocarbons via chemical oxidation and passive bio-stimulation, have been applied to the clean backfill in a series of lifts in the capillary and phreatic horizons while backfilling sections of the excavation. The Safety Data Sheet is attached.

Following completion of excavation and soil assessment activities, groundwater monitoring wells will be installed at the site to delineate the dissolved-phase impacts. The monitoring well installation scope of work will be submitted in a subsequent Form 27 Supplemental.

### Soil Remediation Summary

In Situ

Ex Situ

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

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

\_\_\_\_\_ Chemical oxidation

\_\_\_\_\_ If Yes: Estimated Volume (Cubic Yards) \_\_\_\_\_

\_\_\_\_\_ Air sparge / Soil vapor extraction

\_\_\_\_\_ Name of Licensed Disposal Facility or ECMC Facility ID # \_\_\_\_\_

\_\_\_\_\_ Natural Attenuation

\_\_\_\_\_ Excavate and onsite remediation

Yes \_\_\_\_\_ Other \_\_\_\_\_ COGAC® \_\_\_\_\_

\_\_\_\_\_ 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.

Groundwater monitoring wells will be installed to delineate the dissolved-phase plume. The monitoring well installation scope of work will be submitted in a subsequent Form 27 Supplemental following completion of excavation activities.

# 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.

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: \$ 20500 \_\_\_\_\_

## WASTE DISPOSAL INFORMATION

Was E&P waste generated as part of this remediation? \_\_\_\_\_

Describe beneficial use, if any, of E&P Waste derived from this remediation project:

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

E&P waste (solid) description \_\_\_\_\_

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

Non-ECMC Disposal Facility: \_\_\_\_\_

Volume of E&P Waste (liquid) in barrels \_\_\_\_\_

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 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.

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. 06/07/2024

Actual Spill or Release date, or date of discovery. 06/07/2024

### SITE INVESTIGATION DATES

Date of Initial Actions described in Site Investigation Plan (start date). 06/04/2024

Proposed site investigation commencement. 06/04/2024

Proposed completion of site investigation. 11/27/2025

### REMEDIAL ACTION DATES

Proposed start date of Remediation. 06/04/2024

Proposed date of completion of Remediation. 11/27/2028

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**

--

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: 05/27/2025 \_\_\_\_\_

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: Grace Rollins \_\_\_\_\_

Date: 09/05/2025 \_\_\_\_\_

Remediation Project Number: 34404 \_\_\_\_\_

**COA Type****Description**

	A more recent form, Document # 404322155, has been submitted. The COAs/comments on that form take precedence.
1 COA	

**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**

404149210	INVESTIGATION/REMEDATION WORKPLAN (SUPPLEMENTAL)
404149412	LABORATORY ANALYTICAL REPORT
404149413	LABORATORY ANALYTICAL REPORT
404149414	LABORATORY ANALYTICAL REPORT
404149415	LABORATORY ANALYTICAL REPORT
404149417	LABORATORY ANALYTICAL REPORT
404149924	LABORATORY ANALYTICAL REPORT
404149928	LABORATORY ANALYTICAL REPORT
404149933	LABORATORY ANALYTICAL REPORT
404149934	LABORATORY ANALYTICAL REPORT
404149936	LABORATORY ANALYTICAL REPORT
404149941	LABORATORY ANALYTICAL REPORT
404149943	LABORATORY ANALYTICAL REPORT
404149944	LABORATORY ANALYTICAL REPORT
404149947	LABORATORY ANALYTICAL REPORT
404149952	LABORATORY ANALYTICAL REPORT
404149958	LABORATORY ANALYTICAL REPORT
404149969	LABORATORY ANALYTICAL REPORT
404149971	LABORATORY ANALYTICAL REPORT
404150866	LABORATORY ANALYTICAL REPORT
404150876	SOIL SAMPLE LOCATION MAP
404152566	LABORATORY ANALYTICAL REPORT
404155244	SAFETY DATA SHEETS
404217802	LABORATORY ANALYTICAL REPORT
404217803	LABORATORY ANALYTICAL REPORT
404217805	LABORATORY ANALYTICAL REPORT
404217809	LABORATORY ANALYTICAL REPORT
404217810	LABORATORY ANALYTICAL REPORT
404217812	LABORATORY ANALYTICAL REPORT

404217814	LABORATORY ANALYTICAL REPORT
404217817	LABORATORY ANALYTICAL REPORT
404217822	LABORATORY ANALYTICAL REPORT
404217825	LABORATORY ANALYTICAL REPORT
404217828	LABORATORY ANALYTICAL REPORT
404217830	LABORATORY ANALYTICAL REPORT
404217833	LABORATORY ANALYTICAL REPORT
404217837	LABORATORY ANALYTICAL REPORT
404217838	LABORATORY ANALYTICAL REPORT
404217839	LABORATORY ANALYTICAL REPORT
404217841	LABORATORY ANALYTICAL REPORT
404217844	SOIL SAMPLE LOCATION MAP
404217849	SOIL SAMPLE LOCATION MAP
404217851	ANALYTICAL DATA SUMMARY TABLE(S)
404217868	LABORATORY ANALYTICAL REPORT
404218012	LABORATORY ANALYTICAL REPORT
404218017	LABORATORY ANALYTICAL REPORT
404218023	PHOTO DOCUMENTATION
404343180	FORM 27-SUPPLEMENTAL-SUBMITTED

Total Attach: 48 Files

**General Comments**

<b><u>User Group</u></b>	<b><u>Comment</u></b>	<b><u>Comment Date</u></b>
		Stamp Upon Approval

Total: 0 comment(s)