

**State of Colorado**  
**Energy & Carbon Management Commission**

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Document Number:  
404357237

Receive Date:  
\_\_\_\_\_

Report taken by:  
\_\_\_\_\_

**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) 929-4307</u>
City: <u>DENVER</u> State: <u>CO</u> Zip: <u>80217-3779</u>		Mobile: <u>( )</u>
Contact Person: <u>Max Moran</u>	Email: <u>DJRemediation_Forms@oxy.com</u>	

**PROJECT, PURPOSE & SITE INFORMATION**

**PROJECT INFORMATION**

Remediation Project #: 28512 Initial Form 27 Document #: 403355589

**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>123-18460</u>	County Name: <u>WELD</u>
Facility Name: <u>UPRC 9-12J5</u>	Latitude: <u>40.235424</u>	Longitude: <u>-104.676401</u>	
** correct Lat/Long if needed: Latitude: _____		Longitude: _____	
QtrQtr: <u>SWSW</u>	Sec: <u>9</u>	Twp: <u>3N</u>	Range: <u>65W</u> Meridian: <u>6</u> Sensitive Area? <u>Yes</u>
Facility Type: <u>WELL</u>	Facility ID: _____	API #: <u>123-28045</u>	County Name: <u>WELD</u>
Facility Name: <u>REI H 9-33D</u>	Latitude: <u>40.235406</u>	Longitude: <u>-104.676553</u>	
** correct Lat/Long if needed: Latitude: _____		Longitude: _____	
QtrQtr: <u>SWSW</u>	Sec: <u>9</u>	Twp: <u>3N</u>	Range: <u>65W</u> Meridian: <u>6</u> Sensitive Area? <u>Yes</u>

Facility Type: WELL	Facility ID: _____	API #: 123-29814	County Name: WELD
Facility Name: REI H 9-32D	Latitude: 40.235462	Longitude: -104.676580	
** correct Lat/Long if needed: Latitude: _____		Longitude: _____	
QtrQtr: SWSW	Sec: 9	Twp: 3N	Range: 65W Meridian: 6 Sensitive Area? Yes

Facility Type: SPILL OR RELEASE	Facility ID: 484590	API #: _____	County Name: WELD
Facility Name: REI H 9-33D Flowline	Latitude: 40.235406	Longitude: -104.676553	
** correct Lat/Long if needed: Latitude: _____		Longitude: _____	
QtrQtr: SWSW	Sec: 9	Twp: 3N	Range: 65W Meridian: 6 Sensitive Area? Yes

Facility Type: SPILL OR RELEASE	Facility ID: 484591	API #: _____	County Name: WELD
Facility Name: REI H 9-32D Flowline	Latitude: 40.233992	Longitude: -104.675206	
** correct Lat/Long if needed: Latitude: _____		Longitude: _____	
QtrQtr: SWSW	Sec: 9	Twp: 3N	Range: 65W Meridian: 6 Sensitive Area? Yes

**SITE CONDITIONS**

General soil type - USCS Classifications SC Most Sensitive Adjacent Land Use Milton reservoir  
 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? Yes

**Other Potential Receptors within 1/4 mile**

Water well: none  
 Surface water: none  
 Wetlands: none  
 Springs: none  
 Livestock: none  
 Occupied Building: 330'  
 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
UNDETERMINED	GROUNDWATER	Groundwater not encountered	Groundwater samples/laboratory analytical results
Yes	SOILS	40' (N-S) x 30' (E-W) x 14' 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.

Wellhead cut and cap operations and flowline removal activities were completed at the REI H 9-32D, REI H9-33D, and UPRC 9-12J5 wellheads on June 6 and August 22, 2023. Groundwater was not encountered during wellhead cut and cap operations and flowline removal activities. Visual inspection and field screening of soils around the wellheads and associated flowlines was conducted following wellhead cut and cap operations, and soil samples (WHB01@6', WH-B01@6', WH-B01@8') were submitted for laboratory analysis to determine if a release occurred. The removal of the associated flowlines was completed from June 6 through September 19, 2023. Soil samples were collected from the locations where the flowline risers were disconnected at the wellheads (FL-B01@4', FL-B03@4', FL-B01@4'), separators (FL-B07@4', FL-B08@4', FL-B08@4'), and directional changes (FL-B05@4' (9-12J5), FL-B06@4' (9-32D, 9-33D, and 9-12J5), FL-B07@4' (9-32D, 9-33D, and 9-12J5) and submitted for laboratory analysis to determine if a release occurred. Laboratory analytical results indicated that the naphthalene concentrations in flowline soil samples (REI H 9-32D: FL-B06@4', FL-B07@4', FL-B08@4') and the naphthalene and 1,2,4-TMB concentrations in flowline soil samples (REI H 9-33D: FL-B03@4', FL-B06@4', and FL-B07@4') exceeded the applicable ECMC Table 915-1 standards. As such, two Form 19-Initial/Supplemental Spill/Release Reports (ECMC Document No. 403428598-REI H 9-33D and 403428605-REI H 9-32D) were submitted on June 10, 2023, and the ECMC issued Spill/Release Point IDs 484590 and 484591, respectively. Soil sample location and field screening data are presented in Table 1. The flowline excavation soil sample locations are illustrated in Figures 2-6. Soil analytical data is presented in Tables 2-5.

**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 6, 2023 - November 21, 2024, excavation activities were conducted to address remaining soil impacts at the impacted areas of the former flowline locations FL-B03@4' (9-33D), FL-B06@4' (9-32D & 9-33D), FL-B07@4' (9-32D & 9-33D), and FL-B08@4' (9-32D). Based on the waste characterization results (REI H 9-32D: FL-B06@4', FL-B07@4', FL-B08@4') and (REI H 9-33D: FL-B03@4', FL-B06@4', and FL-B07@4'), confirmation samples were submitted for laboratory analysis of the site-specific waste characterization using ECMC-approved methods. Eight (8) test pit samples were collected and submitted for analysis of Table 915 inorganic parameters. A verification sample was collected (TP-01V@6') and submitted for analysis of lead only. Analytical results indicated that constituent concentrations in the soil samples collected from the final excavation extents were in compliance with ECMC Table 915-1 allowable levels and/or within site-specific 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 wellhead cut and cap operations and flowline removal 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 June 6 through September 19, 2023, visual inspection and field screening of soils was conducted at 12 sidewall locations within the cut and cap excavation area, 12 locations at the ground surface adjacent to the excavation, and 11 flowline removal pothole excavations. 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 June 9 and August 24, 2023, a soil gas survey was conducted at 13 soil vapor points (SVP01-SVP05) installed adjacent to the former wellhead locations following cut and cap operations. GEM 5000 field readings were non-detect for methane at all 13 soil vapor points. SVP screening results are presented in Table 6.

**SITE INVESTIGATION REPORT**

**SAMPLE SUMMARY**

Soil	NA / ND
Number of soil samples collected <u>71</u>	-- Highest concentration of TPH (mg/kg) <u>302</u>
Number of soil samples exceeding 915-1 <u>65</u>	-- Highest concentration of SAR <u>5.48</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>1200</u>	Vertical Extent > 915-1 (in feet) <u>14</u>
<b>Groundwater</b>	
Number of groundwater samples collected <u>0</u>	Highest concentration of Benzene (µg/l) <u>          </u>
Was extent of groundwater contaminated delineated? <u>No</u>	Highest concentration of Toluene (µg/l) <u>          </u>
Depth to groundwater (below ground surface, in feet) <u>          </u>	Highest concentration of Ethylbenzene (µg/l) <u>          </u>
Number of groundwater monitoring wells installed <u>          </u>	Highest concentration of Xylene (µg/l) <u>          </u>
Number of groundwater samples exceeding 915-1 <u>          </u>	Highest concentration of Methane (mg/l) <u>          </u>
<b>Surface Water</b>	

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?

[Empty text box for adjacent property impacts]

Were background samples collected as part of this site investigation?

Background soil samples WH-BG01 through WH-BG05 were collected from native material adjacent to the wellhead cut and cap excavations at depths ranging from 3' to 10' bgs. Background soil samples FL-BG02 through FL-BG14 were collected from native material adjacent to the flowline excavations at depths ranging from 5' to 18' bgs. The background soil samples were submitted for laboratory analysis of the Soil Suitability for reclamation Parameters in Soils and/or Table 915-1 metals using ECMC approved methods. Analytical results for the background soil samples are presented in Tables 3 and 5. The background soil sample locations are depicted on Figure 7.

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?

[Empty text box for further site investigation]

**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 June 6, 2023, to July 2, 2024, approximately 560 cubic yards of impacted material were excavated and transported to the Buffalo Ridge Landfill in Keenesburg, Colorado for disposal. The excavation area will be backfilled and contoured to match pre-existing 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 data indicate that impacted soils in the REI H 9-33D & REI H 9-32D flowline excavation areas have been remediated to be in compliance with the ECMC Table 915-1 standards and/or within the range of site-specific background concentrations. Groundwater was not encountered in the wellhead cut and cap excavation area or during flowline removal activities. 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 )
- \_\_\_\_\_ Chemical oxidation
- \_\_\_\_\_ Air sparge / Soil vapor extraction
- \_\_\_\_\_ Natural Attenuation
- \_\_\_\_\_ Other \_\_\_\_\_

- Yes Excavate and offsite disposal
- If Yes: Estimated Volume (Cubic Yards) 560
- 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.

[Empty box for monitoring plan details]

### REMEDIATION PROGRESS UPDATE

#### PERIODIC REPORTING

**Approved Reporting Schedule:**

Quarterly    Semi-Annually    Annually    Other [ ]

**Request Alternative Reporting Schedule:**

Semi-Annually    Annually    Other [Final Report]

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 ECMC. 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 560

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? 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. 09/25/2025

Proposed date of completion of Reclamation. 09/25/2026

## 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. 01/24/2023

Actual Spill or Release date, or date of discovery. 06/09/2023

### SITE INVESTIGATION DATES

Date of Initial Actions described in Site Investigation Plan (start date). 06/06/2023

Proposed site investigation commencement. 06/06/2023

Proposed completion of site investigation. 09/19/2023

### REMEDIAL ACTION DATES

Proposed start date of Remediation. 06/09/2023

Proposed date of completion of Remediation. 07/09/2025

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 and soil screening data provided herein, assessment is complete, and 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: Max Moran

Title: Environmental Advisor

Submit Date: \_\_\_\_\_

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: 28512

**COA Type**

**Description**

0 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.

<b><u>Att Doc Num</u></b>	<b><u>Name</u></b>
404357240	ANALYTICAL RESULTS
404357241	ANALYTICAL RESULTS
404357242	ANALYTICAL RESULTS
404357243	ANALYTICAL RESULTS
404357244	ANALYTICAL RESULTS
404357245	ANALYTICAL RESULTS
404357246	ANALYTICAL RESULTS
404357250	ANALYTICAL RESULTS
404357252	ANALYTICAL RESULTS
404357253	ANALYTICAL RESULTS
404357255	ANALYTICAL RESULTS
404357257	ANALYTICAL RESULTS
404357264	PHOTO DOCUMENTATION
404367020	SITE MAP
404367021	SOIL SAMPLE LOCATION MAP
404367022	SOIL SAMPLE LOCATION MAP
404367023	SOIL SAMPLE LOCATION MAP
404367024	SOIL SAMPLE LOCATION MAP
404367025	SOIL SAMPLE LOCATION MAP
404367026	SOIL SAMPLE LOCATION MAP
404367027	ANALYTICAL DATA SUMMARY TABLE(S)

Total Attach: 21 Files

## General Comments

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

Total: 0 comment(s)