

State of Colorado  
Energy & Carbon Management Commission

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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: KERR MCGEE OIL & GAS ONSHORE LP	Operator No: 47120	Phone Numbers	
Address: P O BOX 173779			
City: DENVER	State: CO	Zip: 80217-3779	Phone: (720) 929-4306
Contact Person: Erik Mickelson		Email: DJRemediation_Forms@oxy.com	Mobile: ( )

PROJECT, PURPOSE & SITE INFORMATION

PROJECT INFORMATION

Remediation Project #: 35208 Initial Form 27 Document #: 403753714

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 #: 123-22070 County Name: WELD

Facility Name: BOYLE STATE 8-16 Latitude: 40.139940 Longitude: -104.775130

\*\* correct Lat/Long if needed: Latitude: \_\_\_\_\_ Longitude: \_\_\_\_\_

QtrQtr: SENE Sec: 16 Twp: 2N Range: 66W Meridian: 6 Sensitive Area? Yes

Facility Type: SPILL OR RELEASE Facility ID: 487611 API #: \_\_\_\_\_ County Name: WELD

Facility Name: Boyle St 8-16 Wellhead Latitude: 40.139940 Longitude: -104.775130

\*\* correct Lat/Long if needed: Latitude: \_\_\_\_\_ Longitude: \_\_\_\_\_

QtrQtr: SENE Sec: 16 Twp: 2N 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

Pond 1,000 feet (ft) northwest. Fulton Ditch 470 ft northwest. Water well 940 ft west. Occupied buildings 1,120 ft southwest and 1,270 ft north. Livestock 900 ft northwest. County Road 640 ft east. Agriculture. An area with wetland characteristics is located approximately 1,020 ft northwest of the wellhead. Groundwater at approximately 4 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
UNDETERMINED	GROUNDWATER	TBD	Soil Samples/Laboratory Analytical Results
UNDETERMINED	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.

Wellhead cut and cap operations were completed at the Boyle St 8-16 wellhead on 7/10/2024. Groundwater was encountered at a depth of 4 ft bgs. Visual inspection and field screening of soil around the wellhead and associated pumping equipment were conducted following cut and cap operations, and a soil sample (B01@6') was submitted for analysis of full list ECOM Table 915-1 constituents, to determine if a release occurred. The flowline associated with the wellhead was partially removed between 7/8/2024 and 7/15/2024. 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') and in one flowline pothole where the flowline was capped and abandoned in place. (FL01@4). Samples were submitted for full list Table 915-1 constituents to determine if a release occurred. Initial laboratory analytical results indicated that naphthalene, 1-methylnaphthalene, sodium adsorption ration (SAR), pH, arsenic, barium, cadmium, hexavalent chromium, lead, and selenium impacts exceeding the Table 915-1 allowable levels and background levels were present at the (B01@6, SEP01-RISER@4', WH01-RISER@3' and FL01@4'). As such, a Form 19 Initial/Supplemental Spill/Release Report (Document No. 403880796) was submitted on 8/7/2024 and the ECOM issued Spill/Release Point ID 487611. Verification samples were collected to confirm the initial results. Final analytical results confirmed that naphthalene, 1-methylnaphthalene, SAR, pH and selenium impacts exceeding the Table 915-1 allowable levels were present at the (B01@6).

Per the condition of approval (COA) for document number 403753714, a sample will be collected along the abandoned in place flowline where it turns from NW to WSW. Results will be summarized in a subsequent Form 27 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 7/10/2024 and 10/31/2024, excavation activities were conducted to address remaining soil impacts at the wellhead excavation and five confirmation soil samples were collected from the base and sidewalls of the final excavation extents at depths of approximately 9 bgs and 5 ft bgs, respectively. The confirmation soil samples were submitted for laboratory analysis of the site-specific waste profile, including polycyclic aromatic hydrocarbons, SAR, pH, boron, and select Table 915-1 metals using ECOM-approved methods. All samples at the final excavation extents were within the ECOM Table 915-1 allowable levels or within site specific background levels x1.25 for Table 915-1 metals. The laboratory reports are attached.

Per the condition of approval (COA) for document number 403753714, a sample will be collected along the abandoned in place flowline where it turns from NW to WSW. Results will be summarized in a subsequent.

#### Proposed Groundwater Sampling

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

On 7/8/2024 and 7/15/2024, two groundwater samples (GW-SEP02-OUTLET@4, GW-FL01@4') were collected from the separator outlet and the flowline pothole at a depth of 4 ft bgs. Groundwater was not in contact with impacted soil. The groundwater samples were submitted for analysis of Table 915-1 organic constituents in groundwater. Based on the laboratory analytical results groundwater concentrations were in compliance with ECMC Table 915-1 allowable levels for all requested analytes. No organic constituents were detected above the laboratory reporting limits. The groundwater sample locations are depicted on Figure 2. 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 ):

Between 7/10/2024 and 7/15/2024, visual inspection and field screening of soil were conducted at four sidewall locations within the cut and cap excavation area, four locations at the ground surface adjacent to the cut and cap excavation area and ten 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. A photographic log is attached.

On 7/25/2024, 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 nondetect for methane at all soil vapor points. The soil vapor point locations are illustrated on Figure 1.

**SITE INVESTIGATION REPORT**

**SAMPLE SUMMARY**

**Soil**

Number of soil samples collected 12  
 Number of soil samples exceeding 915-1 12  
 Was the areal and vertical extent of soil contamination delineated? No  
 Approximate areal extent (square feet) 51

**NA / ND**

ND Highest concentration of TPH (mg/kg) \_\_\_\_\_  
 -- Highest concentration of SAR 31.7  
 BTEX > 915-1 No  
 Vertical Extent > 915-1 (in feet) 9

**Groundwater**

Number of groundwater samples collected 1  
 Was extent of groundwater contaminated delineated? Yes  
 Depth to groundwater (below ground surface, in feet) 4  
 Number of groundwater monitoring wells installed 0  
 Number of groundwater samples exceeding 915-1 0

ND Highest concentration of Benzene (µg/l) \_\_\_\_\_  
 ND Highest concentration of Toluene (µg/l) \_\_\_\_\_  
 ND Highest concentration of Ethylbenzene (µg/l) \_\_\_\_\_  
 ND Highest concentration of Xylene (µg/l) \_\_\_\_\_  
 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?

Twelve background soil samples (Native-BG01@3' through Native-BG06@3' and Native-BG01@6' through Native-BG06@6') were collected from the native material outside of the wellhead excavation areas. Background soil samples were submitted for laboratory analysis of pH, electrical conductivity (EC), SAR, boron and Table 915-1 metals using ECMC-approved methods. Analytical results indicate that EC, SAR, pH, boron, arsenic, barium, hexavalent chromium, copper, lead, nickel, selenium, and zinc 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 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?

Per the COA for document number 403753714, a sample will be collected along the abandoned in place flowline where it turns from NW to WSW. Results will be summarized 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.

Impacted soil from the (B01@6') excavation will be removed and transported to a licensed disposal facility. Final disposal information will be provided upon completion of assessment activities. Disposal records are 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 impacts at the former wellhead have been remediated and all soil at the wellhead cut and cap excavation extents is within the ECMC Table 915-1 allowable levels and/or within site-specific background levels x1.25 for Table 915-1 metals. Groundwater was encountered in two flowline potholes at approximately 4 ft bgs. Groundwater was not in contact with impacted soil. Analytical results indicate that groundwater concentrations were in compliance with ECMC Table 915-1 allowable levels for all requested analytes.

Per the COA for document number 403753714, a sample will be collected along the abandoned in place flowline where it turns from NW to WSW. Results will be summarized in a subsequent Form 27 Supplemental report.

### 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

\_\_\_\_\_ 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.



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. 08/08/2024

Actual Spill or Release date, or date of discovery. 08/07/2024

### SITE INVESTIGATION DATES

Date of Initial Actions described in Site Investigation Plan (start date). 07/08/2024

Proposed site investigation commencement. 07/08/2024

Proposed completion of site investigation. 07/24/2025

### REMEDIAL ACTION DATES

Proposed start date of Remediation. 07/08/2024

Proposed date of completion of Remediation. 07/24/2025

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**

Per the COA for document number 403753714, a sample will be collected along the abandoned in place flowline where it turns from NW to WSW. Results will be summarized in a subsequent Form 27 Supplemental report.

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: \_\_\_\_\_

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: 35208 \_\_\_\_\_

**COA Type****Description**

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.

**Att Doc Num****Name**

404069699	ANALYTICAL RESULTS
404069700	PHOTO DOCUMENTATION
404069702	ANALYTICAL RESULTS
404069703	ANALYTICAL RESULTS
404081958	SOIL SAMPLE LOCATION MAP
404081959	SOIL SAMPLE LOCATION MAP

Total Attach: 6 Files

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

User Group	Comment	Comment Date
		Stamp Upon Approval

Total: 0 comment(s)