

State of Colorado  
Energy & Carbon Management Commission1120 Lincoln Street, Suite 801, Denver, Colorado 80203  
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Document Number:

403731328

Receive Date:

04/04/2024

Report taken by:

Alexander Ahmadian

## 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		Phone: (970) 336-3500
City: DENVER	State: CO	Zip: 80217-3779
Contact Person: Ariana Ochoa	Email: DJRemediation_Forms@oxy.com	Mobile: (713) 350-4906

## PROJECT, PURPOSE &amp; SITE INFORMATION

## PROJECT INFORMATION

Remediation Project #: 29836 Initial Form 27 Document #: 403430755

## 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 #: 123-24672	County Name: WELD
Facility Name: MURRAY 21-14	Latitude: 40.229761	Longitude: -104.744447	
** correct Lat/Long if needed: Latitude: _____		Longitude: _____	
QtrQtr: NENW	Sec: 14	Twp: 3N	Range: 66W Meridian: 6 Sensitive Area? Yes

Facility Type: LOCATION	Facility ID: 306450	API #: _____	County Name: WELD
Facility Name: MURRAY-63N66W 14NENW	Latitude: 40.229760	Longitude: -104.744450	
** correct Lat/Long if needed: Latitude: 40.230097		Longitude: -104.744253	
QtrQtr: NENW	Sec: 14	Twp: 3N	Range: 66W Meridian: 6 Sensitive Area? Yes

## SITE CONDITIONS

General soil type - USCS Classifications SP

Most Sensitive Adjacent Land Use Crop land

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

Domestic water well: approximately 810' NW and 650' NE  
Surface Water: approximately 230' N  
Wetlands: approximately 780' SE  
Springs: none  
Livestock: none  
Occupied Building: approximately 930' N  
High Priority Habitats: within Bald Eagle Active Nest Site Half Mile HPH Buffer

## 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	Groundwater not encountered	Groundwater samples/laboratory analytical results
No	SOILS	No impacted soils	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, flowline removal activities, and facility decommissioning activities were completed at the Murray 21-14 Brethauer Jake B2 O SA location on October 4, 2023. Groundwater was not encountered in the wellhead cut and cap, flowline removal pothole excavation areas, or during decommissioning activities. Visual inspection and field screening of soils around the well, associated pumping equipment, and flowline potholes following wellhead cut and cap operations and flowline removal activities, and soil samples (WH-B01@7', FL-B01@4', FL-B02@4', FL-B03@3') were submitted for laboratory analysis to determine if a release occurred. Visual inspection and field screening of soils at one separator, one meter house, one produced water vessel (PWV), and one aboveground storage tank (AST) was conducted following removal activities, and soil samples (SEP-B01@3', SEPB02@3', PW-B01@3', and AST-B01@3') were submitted for laboratory analysis to determine if a release occurred. Laboratory analytical results indicated that soil samples WH-B01@7', FL-B01@4', FL-B02@4', FL-B03@4', SEP-B01@3', SEPB02@3', PW-B01@3', and AST-B01@3' were in compliance with ECOM Table 915-1 standards, with the exception of the pH concentration in soil sample WH-B01@7'. A verification soil sample will be collected to further assess pH impacts at WH-B01@7'. However, assessment activities are on hold due to high priority habitat (HPH) restrictions. A topographic Site Location Map showing the geographic setting of the site location is provided as Figure 1. Soil sample location and field screening data are presented in Table 1. The soil sample and field screening locations are illustrated on Figures 2-4. The laboratory analytical reports are provided as Attachment A. The field notes and a photographic log are provided as Attachment B.

### 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 October 4, 2023, soil samples were collected from the base of the cut and cap excavation area (WH-B01@7'), from the locations where the flowline risers were disconnected at the wellhead (FL-B01@4') and separator (FL-B03@3'), and a directional change (FL-B02@4'). In addition, soil samples were collected from beneath the PWV (PW-B01@3'), the separator excavation (SEP-B01@3', SEPB02@3'), and beneath the AST (AST-B01@3'). The soil samples were submitted for laboratory analysis of BTEX, naphthalene, TMBs, TPH-GRO (C6-C10), TPH-DRO (C10-C28), TPH-ORO (C28-C40), pH, EC, SAR, and boron using ECOM approved methods, as approved in the Form 27 Initial dated June 15, 2023 (Document No. 403430755). Analytical results indicated that constituent concentrations in the soil samples were in compliance with ECOM Table 915-1 standards, with the exception of the pH concentration in soil sample WH-B01@7'. Soil analytical results are presented in Tables 2-4.

#### Proposed Groundwater Sampling

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

Groundwater was not encountered during initial closure assessment activities. If groundwater is encountered during additional assessment activities, a minimum of one grab sample will be collected as soon as practical. Groundwater samples will be submitted to an accredited laboratory for analysis of benzene, toluene, ethylbenzene, total xylenes (BTEX), naphthalene, 1,2,4-trimethylbenzene (TMB), and 1,3,5-TMB, using standard methods appropriate for detecting the target analytes in ECOM Table 915-1.

### 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 October 4, 2023, visual inspection and field screening of soils was conducted at 4 sidewall locations within the cut and cap excavation area, 4 locations at the ground surface adjacent to the excavation, one former PWV, one former meter house, and one former AST. 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 ECOM Operator Guidance. On October 9, 2023, a soil gas survey was conducted at 5 soil vapor points (SVP01-SVP05) installed adjacent to the former wellhead location following cut and cap operations. GEM 5000 field readings were non-detect for methane at all 5 soil vapor points. SVP locations are illustrated on Figure 2 and SVP screening results are presented in Table 4.

## SITE INVESTIGATION REPORT

### SAMPLE SUMMARY

#### Soil

Number of soil samples collected 14

Number of soil samples exceeding 915-1 1

Was the areal and vertical extent of soil contamination delineated? No

Approximate areal extent (square feet) 0

#### NA / ND

ND Highest concentration of TPH (mg/kg)

-- Highest concentration of SAR 3.9

BTEX > 915-1 No

Vertical Extent > 915-1 (in feet) 0

#### Groundwater

Number of groundwater samples collected 0

Was extent of groundwater contaminated delineated? No

Depth to groundwater (below ground surface, in feet)

Number of groundwater monitoring wells installed

Number of groundwater samples exceeding 915-1

Highest concentration of Benzene (µg/l)

Highest concentration of Toluene (µg/l)

Highest concentration of Ethylbenzene (µg/l)

Highest concentration of Xylene (µg/l)

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 WH-BG01@3' - WH-BG03@3' and WH-BG01@6' - WH-BG03@6' were collected from native material adjacent to the wellhead cut and cap excavation. The background soil samples were submitted for laboratory analysis of the Soil Suitability for Reclamation Parameters using standard methods appropriate for detecting target analytes in Table 915-1. Analytical results for the background soil samples are presented in Tables 3.

☐ 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?

Additional assessment activities still need to be completed. However, assessment activities are on hold due to HPH restrictions.

# 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.

Additional assessment activities still need to be completed, as a verification soil sample will be collected at WH-B01@7' to further assess pH impacts. However, assessment activities are on hold due to HPH restrictions. If soils are removed they will be transported to a licensed disposal facility. Disposal records will be kept on file and available upon request.

## 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.

Additional assessment activities still need to be completed, as a verification soil sample will be collected at WH-B01@7' to further assess pH impacts. However, assessment activities are on hold due to HPH restrictions.

## 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.

## 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 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: \$ 2000

### WASTE DISPOSAL INFORMATION

Was E&P waste generated as part of this remediation? No

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. 05/17/2023

Actual Spill or Release date, or date of discovery. \_\_\_\_\_

### **SITE INVESTIGATION DATES**

Date of Initial Actions described in Site Investigation Plan (start date). 10/04/2023

Proposed site investigation commencement. 10/04/2023

Proposed completion of site investigation. \_\_\_\_\_

### **REMEDIAL ACTION DATES**

Proposed start date of Remediation. \_\_\_\_\_

Proposed date of completion of Remediation. \_\_\_\_\_

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: Ariana Ochoa

Title: Sr. HSE Advisor

Submit Date: 04/04/2024

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: Alexander Ahmadian

Date: 05/20/2024

Remediation Project Number: 29836

**COA Type****Description**

	Operator shall provide the Document numbers or attach the Form 42 associated for the on-location flowline abandonment on the next Form 27 Supplemental.
	Operator will update their Proposed date of completion of Remediation in the Implementation Schedule section of their next quarterly Form 27 Supplemental Report.
2 COAs	

**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**

403731328	INVESTIGATION/REMEDATION WORKPLAN (SUPPLEMENTAL)
403731384	PHOTO DOCUMENTATION
403731387	SITE MAP
403731397	SOIL SAMPLE LOCATION MAP
403731398	SOIL SAMPLE LOCATION MAP
403731399	SOIL SAMPLE LOCATION MAP
403731402	ANALYTICAL RESULTS
403731403	ANALYTICAL RESULTS
403797513	FORM 27-SUPPLEMENTAL-SUBMITTED

Total Attach: 9 Files

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

		Stamp Upon Approval
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Total: 0 comment(s)