

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

403920019

Receive Date:

09/24/2024

Report taken by:

Laurel Anderson

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: Phil Hamlin	Email: Phillip_Hamlin@oxy.com	Mobile: ()

PROJECT, PURPOSE & SITE INFORMATION

PROJECT INFORMATION

Remediation Project #: 4493 Initial Form 27 Document #: 1944350

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: Discontinuation of Groundwater Monitoring

SITE INFORMATION

No Multiple Facilities

Facility Type: TANK BATTERY	Facility ID: 318506	API #:	County Name: WELD
Facility Name: UPRR 53 PAN AM J-62N65W 11SWNE	Latitude: 40.156061	Longitude: -104.627281	
	** correct Lat/Long if needed: Latitude: 40.153336	Longitude: -104.621928	
QtrQtr: SWNE	Sec: 11	Twp: 2N	Range: 65W Meridian: 6 Sensitive Area? Yes

SITE CONDITIONS

General soil type - USCS Classifications CL Most Sensitive Adjacent Land Use Pasture and Agriculture

Is domestic water well within 1/4 mile? Yes 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 approximately 175 feet (ft) east and groundwater approximately 8 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	See Attached Data	Groundwater Samples/Lab Analysis
Yes	SOILS	100' N-S X 120' E-W X 15' bgs	Soil Samples/Lab Analysis

INITIAL ACTION SUMMARY

Description of initial action or emergency response measures take to abate, investigate, and/or remediate impacts associated with E&P Waste.

In January 2009, field crews encountered historical petroleum hydrocarbon impacted soil while removing the production tank and upgrading the tank battery at the UPRR 53 Pan Am J 1 facility. The petroleum hydrocarbon impacted soil was excavated.

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 January 16 and February 4, 2009, 20 confirmation soil samples were collected from the excavation sidewalls. The soil samples were submitted for laboratory analysis of total petroleum hydrocarbons (TPH) by United States Environmental Protection Agency (USEPA) Method 8015. The analytical results confirmed that TPH concentrations were in full compliance with the Energy and Carbon Management Commission (ECMC) sensitive area allowable level of 1,000 milligrams per kilogram (mg/kg) at the extent of excavation. The soil samples were not analyzed for benzene, toluene, ethylbenzene, and total xylenes (BTEX) as the samples were collected prior to the April 1, 2009, ECMC rule changes.

Proposed Groundwater Sampling

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

On January 16, 2009, an excavation groundwater sample (GW01) was submitted for laboratory analysis of BTEX by USEPA Method 8260B. Analytical results for sample GW01 indicated that concentrations of all four BTEX constituents exceeded the ECMC allowable levels at the time of sampling. Based on the analytical results, approximately 80 barrels of impacted groundwater were removed from the excavation and transported to a licensed injection facility for disposal. On February 5, 2009, a second groundwater sample (GW02) was collected from the excavation. Laboratory analytical results for groundwater sample GW02 indicated that benzene, toluene, and total xylenes concentrations continued to exceed the ECMC allowable levels. Groundwater monitoring has been conducted on a quarterly basis since April 2009. The excavation groundwater sample locations are depicted on the Site Map provided as Figure 1. The groundwater sample analytical results are summarized in Table 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):

SITE INVESTIGATION REPORT

SAMPLE SUMMARY

Soil

Number of soil samples collected 20

Number of soil samples exceeding 915-1 8

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

Approximate areal extent (square feet) 12000

NA / ND

-- Highest concentration of TPH (mg/kg) 4160

NA Highest concentration of SAR

BTEX > 915-1 No

Vertical Extent > 915-1 (in feet) 10

Groundwater

Number of groundwater samples collected 1166

Was extent of groundwater contaminated delineated? Yes

Depth to groundwater (below ground surface, in feet) 11

Number of groundwater monitoring wells installed 31

Number of groundwater samples exceeding 915-1 261

-- Highest concentration of Benzene (µg/l) 11000

-- Highest concentration of Toluene (µg/l) 13000

-- Highest concentration of Ethylbenzene (µg/l) 9400

-- Highest concentration of Xylene (µg/l) 62000

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?

Groundwater impacts were detected in the adjoining pasture north of the tank battery.

☐ Were background samples collected as part of this site investigation?

☐ 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 condition of approval (COA) issued by the ECOM to Document No. 403650072, a soil investigation will be conducted at the site. Confirmation soil samples will be submitted for laboratory analysis of full list Table 915-1 constituents. The soil investigation scope of work will be provided in a subsequent Form 27 supplemental report.

REMEDIAL ACTION PLAN

Does this Supplemental Form 27A include changes to a previously approved Remedial Action Plan? Yes

SOURCE REMOVAL SUMMARY

Describe how source is to be removed.

Approximately 4,500 cubic yards of petroleum hydrocarbon impacted soil were removed from the excavation and transported to the Kerr-McGee Land Treatment Facility in Weld County, Colorado. The petroleum hydrocarbon impacted soil was excavated into the phreatic zone to address potential hydrocarbon impacts that may have been present below the current groundwater table due to seasonal fluctuations. Approximately 80 barrels of petroleum hydrocarbon impacted groundwater were removed from the excavation and transported to a licensed injection facility for disposal.

REMEDIAL ACTION 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.

Please refer to the Remediation Summary Attachment.

Soil Remediation Summary

<input type="checkbox"/> In Situ	<input checked="" type="checkbox"/> Ex Situ
_____ Bioremediation (or enhanced bioremediation)	Yes _____ Excavate and offsite disposal
_____ Chemical oxidation	_____ If Yes: Estimated Volume (Cubic Yards) _____ 4500
_____ Air sparge / Soil vapor extraction	_____ Name of Licensed Disposal Facility or ECMC Facility ID # _____ 149007
_____ Natural Attenuation	No _____ Excavate and onsite remediation
_____ Other _____	No _____ Land Treatment
	_____ Bioremediation (or enhanced bioremediation)
	_____ Chemical oxidation
	_____ Other _____

Groundwater Remediation Summary

Yes _____	Bioremediation (or enhanced bioremediation)
Yes _____	Chemical oxidation
Yes _____	Air sparge / Soil vapor extraction
Yes _____	Natural Attenuation
Yes _____	Other _____ Groundwater Removal and MicroBlaze® Application (2009); BOS 200® Injection (2019)

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 MW01, MW02, MW04, MW07, MW08, MW09, and MW11 through MW16 have been sampled on a quarterly basis for organic analytes for groundwater in Table 915-1. Removal of sampling for inorganic analytes was approved by the ECMC in the Form 27 Supplemental dated February 14, 2023 (Document No. 403296594). The monitoring well locations are depicted on Figure 1. The Groundwater Elevation Contour Maps for the previous four monitoring events are provided as Figures 2a through 2d.

As of the July 2024 quarterly monitoring event, all monitoring wells have been in compliance with the ECMC Table 915-1 allowable levels for four quarters.

As no impacts due to exploration or production activities remain in the groundwater, groundwater monitoring is completed and KMOG requests the discontinuation of quarterly groundwater monitoring at this location. The groundwater analytical results are summarized in Table 1. The laboratory reports for four compliant groundwater monitoring events are attached.

REMEDATION 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: \$ 50000

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:

Approximately 4,500 cubic yards of petroleum hydrocarbon impacted soil were excavated and transported to the Kerr-McGee Land Treatment Facility in Weld County, Colorado, for recycling.

Volume of E&P Waste (solid) in cubic yards 4500

E&P waste (solid) description Petroleum hydrocarbon impacted soil

ECMC Disposal Facility ID #, if applicable: 149007

Non-ECMC Disposal Facility:

Volume of E&P Waste (liquid) in barrels 80

E&P waste (liquid) description Petroleum hydrocarbon impacted groundwater

ECMC Disposal Facility ID #, if applicable: 159443

Non-ECMC Disposal Facility:

REMEDATION COMPLETION REPORT

REMEDATION 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? No

Does the previous reply indicate consideration of background concentrations?

Does Groundwater meet Table 915-1 standards? No

Is additional groundwater monitoring to be conducted? Yes

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 was restored to its pre-release grade. The Kerr-McGee production facility was reconstructed.

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? _____

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. 01/12/2009

Actual Spill or Release date, or date of discovery. 01/12/2009

SITE INVESTIGATION DATES

Date of Initial Actions described in Site Investigation Plan (start date). 01/16/2009

Proposed site investigation commencement. 01/12/2009

Proposed completion of site investigation. 04/10/2012

REMEDIAL ACTION DATES

Proposed start date of Remediation. 01/12/2009

Proposed date of completion of Remediation. 04/30/2025

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

As no impacts due to exploration or production activities remain in the groundwater, groundwater monitoring is completed and KMOG requests the discontinuation of quarterly groundwater monitoring at this location. The groundwater analytical results are summarized in Table 1. The laboratory reports for four compliant groundwater monitoring events are attached.

Per the COA issued by the ECMC to Document No. 403650072, a soil investigation will be conducted at the site. Confirmation soil samples will be submitted for laboratory analysis of full list Table 915-1 constituents. The soil investigation scope of work will be provided 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: Phil Hamlin

Title: Senior Environmental Rep.

Submit Date: 09/24/2024

Email: Phillip_Hamlin@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: Laurel Anderson

Date: 12/24/2024

Remediation Project Number: 4493

COA Type

Description

	<p>Operator shall propose additional site assessment (and timeline for completion) to assess if previous remedial actions have been successful and to document compliance with current ECMC Rule 915 effective January 15, 2021.</p> <ul style="list-style-type: none">-Operator's proposed site assessment must address any outstanding data gaps and be reviewed and approved by ECMC prior to implementation-Operator shall collect additional confirmation soil samples to document that there are no remaining residual impacts above Table 915-1 cleanup concentrations and/or Protection of Groundwater Soil Screening Level Concentrations.-Operator shall propose additional confirmation soil borings to be located: at the source, up- and cross-gradient in both directions of the former excavation, and down-gradient adjacent to previous soil boring/monitoring well locations where concentrations of organic compounds were detected in soil and/or groundwater previously.-Operator shall submit a minimum of one soil sample for laboratory analysis of full Table 915- 1 Parameters - TPH (C6-C36), Table 915-1 Organic Compounds in Soil, Table 915 -1 metals, and Table 915-1 Soil Suitability for Reclamation (Electrical conductivity, Sodium adsorption ratio, and pH by saturated paste method, boron (hot water soluble)) from each soil boring advanced.-The sample collected will be from the interval(s) displaying the highest degree of impacts or in the absence of apparent impacts from the interval in which organic compounds were previously detected or the soil-groundwater interface.-Three (3) soil samples must be collected from the source area beneath the extent of the former excavation.-If groundwater is encountered during confirmation soil sampling, Operator shall collected a grab sample from each boring for analysis of Table 915-1 Organic Compounds in Groundwater.-Operator shall return to quarterly reporting until site investigation and remediation are complete and the implementation schedule can be updated
	<p>ECMC does not approve Operator's request to discontinue quarterly groundwater sampling. Operator shall continue quarterly groundwater monitoring until Operator has provided documentation that impacts to both soil and groundwater have been remediated and comply with Table 915-1 standards.</p>
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

403920019	INVESTIGATION/REMEDATION WORKPLAN (SUPPLEMENTAL)
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403926848	ANALYTICAL RESULTS
403926850	REMEDIATION PROGRESS REPORT
403926852	SITE MAP
403926853	GROUND WATER ELEVATION MAP
403926854	GROUND WATER ELEVATION MAP
403926855	GROUND WATER ELEVATION MAP
403928484	GROUND WATER ELEVATION MAP
404039517	FORM 27-SUPPLEMENTAL-SUBMITTED

Total Attach: 9 Files

General Comments

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

Total: 0 comment(s)