FORM 27 Rev 5/22

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 INFORMATON

Name of Operator: KERR MCGEE OIL & GAS ONSHORE LP Operator No: 47120

Phone Numbers

Address: P O BOX 173779
Phone: (970) 515-1161
City: DENVER State: CO Zip: 80217-3779
Mobile: ( )
Contact Person: Phil Hamlin
Email: Phillip_Hamlin@oxy.com

PROJECT, PURPOSE & SITE INFORMATION

PROJECT INFORMATION

Remediation Project #: 5645 Initial Form 27 Document #: 2213101

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.
- [X] 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.
- [X] 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

No Multiple Facilities

Facility Type: LOCATION Facility ID: 330278 API #: County Name: WELD
Facility Name: HENRICKSON FEDERAL 35N-18HZ Latitude: 40.236744 Longitude: -104.822456
** correct Lat/Long if needed: Latitude: 40.233954 Longitude: -104.824653
QtrQtr: NESW Sec: 7 Twp: 3N Range: 66W Meridian: 6 Sensitive Area? Yes

SITE CONDITIONS

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

Occupied building and water well approximately 650 feet (ft) east, and groundwater approximately 12 ft below ground surface (bgs).

SITE INVESTIGATION PLAN

TYPE OF WASTE:

[X] **E&P Waste**	[ ] **Other E&P Waste**	[ ] **Non-E&P Waste**
[X] Produced Water	[ ] Workover Fluids	_____
[X] 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	32' N-S X 18' E-W X 16' 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 2010, field crews were upgrading the HSR-MJ Farms 11, 12, 13, 14-7 production facility and encountered historic petroleum hydrocarbon impacted soil associated with the old abandoned battery lines. The petroleum hydrocarbon impacted soil was excavated.

PROPOSED SAMPLING PLAN

Proposed Soil Sampling

[X] Will soil samples be collected as part of this investigation? (Number, type (grab/composite), analyses, and locations of samples):

In January 2010, soil samples were collected from the excavation and submitted for laboratory analysis of total petroleum hydrocarbons (TPH), benzene, toluene, ethylbenzene, and total xylenes (BTEX), pH, and specific conductivity (EC). Laboratory analytical results indicated that BTEX, TPH, pH, and EC concentrations and levels were in full compliance with Energy and Carbon Management Commission (ECMC) allowable levels at the time of excavation at the lateral extent of the excavation. The excavation dimensions are depicted on the Site Map provided as Figure 1.

Proposed Groundwater Sampling

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

In January 2010, one groundwater sample (GW01) was collected from the excavation for laboratory analysis of BTEX. Laboratory analytical results indicated that sample GW01 exceeded the ECMC allowable levels for benzene, toluene, and total xylenes at the time of sampling. The groundwater sample location is depicted on Figure 1, and the laboratory analytical results are summarized on Table 1.

Groundwater monitoring has been conducted on a quarterly basis since June 2010.

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: 16
Number of soil samples exceeeding 915-1: 15
Was the areal and vertical extent of soil contamination delineated? No
Approximate areal extent (square feet): 576

NA / ND

-- Highest concentration of TPH (mg/kg): 5400
NA Highest concentration of SAR:
BTEX > 915-1: Yes
Vertical Extent > 915-1 (in feet): 24

Groundwater

Number of groundwater samples collected: 1493
Was extent of groundwater contaminated delineated? No
Depth to groundwater (below ground surface, in feet): 14
Number of groundwater monitoring wells installed: 64
Number of groundwater samples exceeding 915-1: 286

-- Highest concentration of Benzene (µg/l): 29000
-- Highest concentration of Toluene (µg/l): 31000
-- Highest concentration of Ethylbenzene (µg/l): 915
-- Highest concentration of Xylene (µg/l): 13500
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

[X] Were impacts to adjacent property or offsite impacts identified?

Groundwater impacts were detected in the adjoining agricultural field north of the former 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):

[X] Is further site investigation required?

Access considerations for additional soil delineation activities and monitoring well installation and replacement are ongoing. Additional remedial actions will be evaluated following completion of soil delineation 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.

Approximately 340 cubic yards of impacted soil were excavated and transported to the Kerr-McGee Land Treatment Facility in Weld County, Colorado, for recycling. The impacted soil was excavated into the capillary and phreatic zones to address potential hydrocarbon impacts that may have been present below the current groundwater table due to seasonal fluctuations. In addition, approximately 330 barrels of petroleum hydrocarbon impacted groundwater was removed from the excavation and transported to a licensed injection facility for disposal. The general site layout and excavation footprint are depicted on the Site Map provided as Figure 1.

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.

Please refer to the Remediation Summary Attachment.

During April 2025, a soil assessment was conducted in the location of the former facility equipment and former separator excavation per landowner request. Soil samples were collected from the locations of the former ECD, meter house, PWVs, and from underneath the base of the former separator excavation extent just above groundwater and at the interval exhibiting the highest level of impact based on field observation. The samples were submitted for analysis of full list Table 915-1 constituents. Laboratory analytical results indicated that impacts exceeding the Table 915-1 allowable levels are present underneath the former separators and the PWV02 location. Assessment activities are ongoing and additional remedial options will be evaluated in the areas of the former separators and PWV02 following completion of delineation activities.

Due to the field indication of impact beneath the former excavation, a source area monitoring well (MW52) was installed in soil boring SB52 and point of compliance (POC) wells (MW26R, MW23, and MW54) were installed upgradient and cross-gradient from the former excavation extents. Per the condition of approval issued by the ECMC for Document No. 404361275, additional monitoring wells will be installed in between MW26R and MW53 and in between MW54 and MW53 to confirm that POC has been achieved at the site.

Soil Remediation Summary

☐ **In Situ**

- ____ Bioremediation (or enhanced bioremediation)
- ____ Chemical oxidation
- ____ Air sparge / Soil vapor extraction
- ____ Natural Attenuation
- ____ Other ____

☒ **Ex Situ**

- Yes — Excavate and offsite disposal
  - If Yes: Estimated Volume (Cubic Yards) 340
  - Name of Licensed Disposal Facility or ECMC Facility ID # 149007
- No — Excavate and onsite remediation
  - ____ Land Treatment
  - ____ Bioremediation (or enhanced bioremediation)
  - ____ Chemical oxidation
  - ____ Other ____

Groundwater Remediation Summary

- Yes — Bioremediation (or enhanced bioremediation)
- No — Chemical oxidation
- Yes — Air sparge / Soil vapor extraction
- Yes — Natural Attenuation
- Yes — Other: Groundwater Removal and MicroBlaze® Application

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 MW01R, MW02R2 through MW09R, MW12, MW13, MW19, MW21, MW25, MW26R, MW27, MW32, and MW52 through MW54 are 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 January 25, 2023 (Document No. 403293954). Removal of monitoring wells MW14, MW15, MW16, MW18, MW20, MW24, MW35, and MW36 from the quarterly monitoring program was approved by the ECMC in the Form 27 Supplemental dated January 30, 2024 (Document No. 403649958). Non-compliant monitoring wells MW01R and MW52 and point of compliance (POC) monitoring wells MW02R2, MW19, MW25, MW26R, MW27, MW53 and MW54 were found to have been destroyed by agricultural activities prior to the second and fourth quarter 2025 monitoring events. Access considerations for monitoring well reinstallation are ongoing. The monitoring well locations are depicted on Figure 1. The Groundwater Elevation Contour Map generated using the December 2025 gauging data is provided as Figure 2. The groundwater analytical results are summarized in Table 2, and the laboratory analytical report for the December 2025 groundwater monitoring event is attached.

REMEDIATION PROGRESS UPDATE

PERIODIC REPORTING

Approved Reporting Schedule:

[X] 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: [X] 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: $ 100000

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:

The petroleum hydrocarbon impacted soil was transported to the Kerr-McGee Land Treatment Facility in Weld County, Colorado, for recycling.

Volume of E&P Waste (solid) in cubic yards 340

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 330

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

ECMC Disposal Facility ID #, if applicable: 159443

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 facility was deconstructed and the site was restored to pre-release grade. The area is currently an active agricultural field. The site will be reclaimed in accordance with ECMC 1000 Series Reclamation Rules.

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. 12/18/2024

Actual Spill or Release date, or date of discovery. 01/13/2010

SITE INVESTIGATION DATES

Date of Initial Actions described in Site Investigation Plan (start date). 01/13/2010

Proposed site investigation commencement. 01/13/2010

Proposed completion of site investigation. 12/31/2028

REMEDIAL ACTION DATES

Proposed start date of Remediation. 01/13/2010

Proposed date of completion of Remediation. 12/31/2028

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

Per the conditions of approval (COAs) issued by the ECMC for Form 27 Document No. 404361275:

COAs #1 & 8: Kerr-McGee does not have additional information regarding the surface owner's reasoning for the additional assessment and conducted the assessment based on a request from the surface owner.

COA #2: Table 915-1 exceedances in soil remain undelineated at the site. A remedy evaluation cannot be conducted until the delineation is complete as the lateral and vertical extent of impacts, the site lithology where the impacts are identified, and surface owner restrictions will affect the potential efficacy of remedial actions implemented at the site.

COA #3: Well replacement is delayed due to crops. Access negotiations for monitoring well installation are ongoing.

COA #4: Access negotiations for additional soil assessment are ongoing. A sample will be collected adjacent to monitoring well MW26R once access has been approved.

COAs #5 through 7: Additional well installation is delayed due to crops. Access negotiations for monitoring well installation are ongoing.

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: 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: Date:

Remediation Project Number: 5645

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
404468087	LABORATORY ANALYTICAL REPORT
404468088	ANALYTICAL DATA SUMMARY TABLE(S)
404468089	SITE MAP
404468090	GROUND WATER ELEVATION MAP
404469682	RECLAMATION PLAN

Total Attach: 5 Files

General Comments

User Group	Comment	Comment Date
		Stamp Upon Approval

Total: 0 comment(s)