FORM 27 Rev 5/22

State of Colorado
Energy & Carbon Management Commission

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Report taken by: Kari Brown

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.

DENIED

OPERATOR INFORMATON

Name of Operator: KERR MCGEE OIL & GAS ONSHORE LP Operator No: 47120
Address: P O BOX 173779
City: DENVER State: CO Zip: 80217-3779
Contact Person: Max Moran Email: DJRemediation_Forms@oxy.com

Phone Numbers
Phone: (720) 929-4307
Mobile: ( )

PROJECT, PURPOSE & SITE INFORMATION

PROJECT INFORMATION

Remediation Project #: 31824 Initial Form 27 Document #: 403497258

PURPOSE INFORMATION

- [ ] Rule 913.c.(1): Pit or Cuttings Trench closure.
- [X] 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.
- [ ] 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.
- [X] 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.
- [X] Other: Request Director's Approval of Site-Specific Waste Profile

SITE INFORMATION

Yes Multiple Facilities

Facility Type: LOCATION Facility ID: 336287 API #: County Name: WELD
Facility Name: LDS-63N68W 24SWSE Latitude: 40.206150 Longitude: -104.949510
** correct Lat/Long if needed: Latitude: 40.208669 Longitude: -104.951094
QtrQtr: SWSE Sec: 24 Twp: 3N Range: 68W Meridian: 6 Sensitive Area? Yes

Facility Type: SPILL OR RELEASE Facility ID: 485907 API #: County Name: WELD
Facility Name: LDS 16-24, Presiding O SA Facility Latitude: 40.208669 Longitude: -104.951094
** correct Lat/Long if needed: Latitude: Longitude:
QtrQtr: NWSE Sec: 24 Twp: 3N Range: 68W 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? No

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

Irrigation ditch 50 feet (ft) west and 170 ft north. Occupied building 610 ft south. Livestock 680 ft south. Agriculture. Groundwater encountered at approximately 11 ft below ground surface (bgs).

SITE INVESTIGATION PLAN

TYPE OF WASTE:

- [X] **E&P Waste**
  - [X] Produced Water
  - [X] Oil
  - [X] Condensate
  - [ ] Drilling Fluids
  - [ ] Drill Cuttings
- [ ] **Other E&P Waste**
  - [ ] Workover Fluids
  - [ ] Tank Bottoms
  - [ ] Pigging Waste
  - [ ] Rig Wash
  - [ ] Spent Filters
  - [ ] Pit Bottoms
  - [ ] Other (as described by EPA)
- [ ] **Non-E&P Waste**

DENIED

DESCRIPTION OF IMPACT

Impacted?	Impacted Media	Extent of Impact	How Determined
UNDETERMINED	GROUNDWATER	TBD	Groundwater Samples/Laboratory Analytical Results
Yes	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.

Decommissioning activities were completed at the LDS 16-24, Presiding O SA Facility on January 2 and January 4, 2024. Visual inspection and field screening of soil at four aboveground storage tanks (ASTs), one produced water vessel (PWV), three separators, one emission control device (ECD), four dumpline potholes, and one meter house location were conducted following removal activities. Soil samples (AST01@0.5', AST02@0.5', AST03@0.5', AST04@0.5', PWV-B01@4', PWV-N01@2', SEP01-INLET@4', SEP01-OUTLET@3', SEP02-INLET@4', SEP02-OUTLET@3', SEP03-INLET@4', & SEP03-OUTLET@3') were submitted for analysis of full list Table 915-1 constituents, to determine if a release occurred. Laboratory analytical results indicated that benzo(a)anthracene, 1-methylnaphthalene, sodium adsorption ratio (SAR), pH, boron, arsenic, barium, cadmium, and/or hexavalent chromium impacts exceeding the ECMC Table 915-1 allowable levels or background levels were present at the ASTs, PWV, SEP01 and SEP02 locations. As such, Form 19 Initial/Supplemental Spill/Release Report (Document # 403646804) was submitted on January 8, 2024, and the ECMC issued Spill/Release Point ID 485907. Verification samples were collected to confirm the initial results at AST03, SEP01-OUTLET, SEP03-OUTLET, PWV-B01, and PWV-N01. Results for the verification samples were within the Table 915-1 allowable levels or background levels except for AST03 and SEP01-OUTLET. The soil sample and field screening locations are illustrated on Figures 1A & 1B. The PID readings and soil sample results are summarized in Tables 1 and 2, respectively.

Assessment activities are ongoing and will be summarized in a subsequent Form 27 Supplemental report.

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):

Between January 2 and May 31, 2024, excavation activities were conducted to address remaining soil impacts at the former tank battery and separator locations. Confirmation soil samples were collected from the base and sidewalls of the excavations at depths ranging from 2.5 to 11 ft bgs. The confirmation soil samples were submitted for laboratory analysis of the site-specific waste profile including total petroleum hydrocarbons (TPH), benzene, toluene, ethylbenzene, xylenes (BTEX), trimethylbenzenes (TMBs), naphthalene, polycyclic aromatic hydrocarbons (PAHs), SAR, boron, and/or select Table 915-1 metals, using ECMC-approved methods. Laboratory analytical results indicate pH impacts above the ECMC Table 915-1 allowable level and site-specific background level remain at the AST-B02@2.5' location. Assessment activities are ongoing.

Proposed Groundwater Sampling

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

On February 29, 2024, one groundwater sample was collected from the separator excavation (GW01). The sample was submitted for laboratory analysis of full list Table 915-1 constituents in groundwater. Based on the laboratory analytical results, groundwater concentrations were in full compliance with ECMC Table 915-1 allowable levels for Table 915-1 organic constituents, chloride, and sulfate. One background groundwater sample (GW-NATIVE-BG01@8') was collected and submitted for analysis of Table 915-1 inorganic constituents in groundwater. Laboratory analytical results indicate that groundwater is in compliance with Table 915-1 allowable levels or background levels. Due to groundwater in contact with impacted soil and compliant organic detections, monitoring wells will be installed. The excavation groundwater sample and background groundwater sample locations are depicted on Figures 1B and 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):

On January 5, 2024, visual inspections and field screening of soils were conducted at the hatch and loadout for all the ASTs, three sidewalls of the PWV excavation, four pothole dumpline locations, the ECD, and the meter house. Based on the inspection and screening results, hydrocarbon-impacted soils were not observed at the soil screening locations. As a result, no soil samples were submitted for laboratory analysis from these areas in accordance with the ECMC Operator Guidance for Oil & Gas Facility Closure document. The soil sample locations are depicted on Figure 1A.

DENIED

SITE INVESTIGATION REPORT

SAMPLE SUMMARY

Soil

		NA / ND	
Number of soil samples collected	64	--	Highest concentration of TPH (mg/kg) 826
Number of soil samples exceeeding 915-1	62	--	Highest concentration of SAR 25.7
Was the areal and vertical extent of soil contamination delineated?	No		BTEX > 915-1 No
Approximate areal extent (square feet)	13390		Vertical Extent > 915-1 (in feet) 11

Groundwater

		NA / ND	
Number of groundwater samples collected	1	ND	Highest concentration of Benzene (µg/l)
Was extent of groundwater contaminated delineated?	No	ND	Highest concentration of Toluene (µg/l)
Depth to groundwater (below ground surface, in feet)	11	ND	Highest concentration of Ethylbenzene (µg/l)
Number of groundwater monitoring wells installed	0	ND	Highest concentration of Xylene (µg/l)
Number of groundwater samples exceeding 915-1	0	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?

One background soil sample was collected from the soil used to construct the tank battery but is no longer being applied due to excavation. Thirty-six native background soil samples were collected from native material outside of the facility excavations. Fifty background samples were collected as part of the Presiding Bish Un 1, LDS 16, 39-24, and LDS 15-24 wellheads cut and cap activities (Rem Nos. 31778, 31702, 31784), located 1,000 to 2,000 ft southeast, from similar depths (3-6 ft bgs) and the same NRCS soil type (Wiley-Colby Complex). Background samples were submitted for analysis of pH, EC, SAR, boron, and/or select Table 915-1 metals. The background soil sample results are summarized in Table 2. The background soil sample locations are depicted on Figure 2.

One background groundwater sample (GW-NATIVE-BG01@8') was collected. The background groundwater analytical results are summarized in Table 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?

Assessment activities are ongoing and will be summarized in a subsequent Form 27 Supplemental report.

Due to groundwater in contact with impacted soil and compliant organic detections, monitoring wells will be installed to verify that no dissolved-phase impacts are present. The monitoring well installation scope of work will be submitted in a subsequent Form 27 Supplemental report following completion of soil assessment 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.

Impacted soil will be removed and transported to a licensed disposal facility. Final disposal information will be provided upon completion of excavation activities. Disposal records will be 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 analytical results indicate pH impacts above the ECMC Table 915-1 allowable level and site-specific background level remain at the AST-B02@2.5' location. Groundwater was encountered in the separator excavation at approximately 11 ft bgs. Analytical results indicate that groundwater is in compliance with Table 915-1 allowable levels or background levels. Due to groundwater in contact with impacted soil and compliant organic detections, monitoring wells will be installed to verify that no dissolved-phase impacts are present. The monitoring well installation scope of work will be submitted in a subsequent Form 27 Supplemental report following completion of soil assessment activities. Assessment activities are ongoing and will be summarized in a subsequent Form 27 Supplemental report.

Soil Remediation Summary

☐ **In Situ**

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

☐ **Ex Situ**

- ____ Excavate and offsite disposal
  - If Yes: Estimated Volume (Cubic Yards) ____
  - Name of Licensed Disposal Facility or ECMC Facility ID # ____
- ____ 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.

Due to groundwater in contact with impacted soil and compliant organic detections, monitoring wells will be installed to verify that no dissolved-phase impacts are present. The monitoring well installation scope of work will be submitted in a subsequent Form 27 Supplemental report following completion of soil assessment activities.

DENIED

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: [ ] 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 Energy and Carbon Management Commission. 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: $ 20500

WASTE DISPOSAL INFORMATION

Was E&P waste generated as part of this remediation?

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. 01/08/2024

Actual Spill or Release date, or date of discovery. 01/08/2024

SITE INVESTIGATION DATES

Date of Initial Actions described in Site Investigation Plan (start date). 01/02/2024

Proposed site investigation commencement. 01/02/2024

Proposed completion of site investigation. 09/20/2025

REMEDIAL ACTION DATES

Proposed start date of Remediation. 01/02/2024

Proposed date of completion of Remediation. 09/20/2026

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:

DENIED

OPERATOR COMMENT

Per Rule 915.e.(2).C, discrete grab samples [AST01@0.5' through AST04@0.5', PWV-N01@2', PWV-B01@4', SEP01-INLET@4', SEP01-OUTLET@3', SEP02-INLET@4', SEP02-OUTLET@3', and SEP03-OUTLET@4'] were collected from the most impacted material available in the source areas on 1/2/24. The results summary table is attached. Based on these results, KMOG requests approval to amend confirmation sampling and analysis to only include hydrocarbon and metal analytes detected above laboratory reporting limits and reclamation parameters exceeding Table 915-1 allowable levels, specifically:
PAHs, SAR, pH, boron, arsenic, barium, hexavalent chromium, copper, lead, nickel, selenium, and zinc in the combined AST excavation; and
TPH, BTEX, TMBs, PAHs, SAR, pH, boron, arsenic, barium, cadmium, lead, nickel, selenium, and zinc in the combined separator excavation (which also previously consumed the former PWV area).

No additional work has been done since the previous Form 27 submitted on 7/21/2025 (Document No. 404276809). Additional assessment at this location is pending. Work is scheduled to resume by May 2026. As such, none of the previous attachments have been included with this form. The implementation schedule has been updated.

KMOG has included the verification sample results for SEP01-W02@9'-V as the verification sample contained organic impacts that were not present in the parent sample. KMOG has also included the verification sample results for SEP01-B08@11'-V as the SAR and selenium results in the parent sample were anomalously high as compared to the initial samples collected from the locations of the former separators.

All other verification sample results have been omitted from the summary table updated ECMC instructions. All verification sample results are included in the previously attached laboratory analytical reports.

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: 11/18/2025 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: 31824

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
404430540	FORM 27 DENIED
404435847	ANALYTICAL DATA SUMMARY TABLE(S)
404458825	FORM 27-SUPPLEMENTAL-SUBMITTED

Total Attach: 3 Files

General Comments

User Group	Comment	Comment Date
Environmental	Rule 912.a.(2) and Rule 913.d.(1) requires that Operators will investigate, clean up, and document impacts resulting from Spills and Releases as soon as the impacts are discovered. Rule 913.b.(2) is clear on the requirements for Operators to determine the horizontal and vertical extent of any contamination in excess of the cleanup concentrations in Table 915-1. This form is denied. Operator's argument for delay in the implementation of the proposed site investigation is not accepted. Operator shall ensure all attachments are directly relevant to the remediation plan and refrain from providing extraneous attachments	12/03/2025

Total: 1 comment(s)

DENIED