

State of Colorado
Energy & Carbon Management Commission

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Report taken by:
Grace Rollins

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: (720) 929-4307
City: DENVER	State: CO	Zip: 80217-3779
Contact Person: Max Moran	Email: DJRemediation_Forms@oxy.com	Mobile: ()

PROJECT, PURPOSE & SITE INFORMATION

PROJECT INFORMATION

Remediation Project #: 36596 Initial Form 27 Document #: 403854328

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: Request Director's approval of site-specific waste profile

SITE INFORMATION

Yes Multiple Facilities

Facility Type: TANK BATTERY	Facility ID: 451671	API #: _____	County Name: WELD
Facility Name: Mayer Federal 13-17 battery	Latitude: 40.133535	Longitude: -104.803103	
** correct Lat/Long if needed: Latitude: _____		Longitude: _____	
QtrQtr: SESW	Sec: 17	Twp: 2N	Range: 66W Meridian: 6 Sensitive Area? Yes
Facility Type: SPILL OR RELEASE	Facility ID: 486353	API #: _____	County Name: WELD
Facility Name: McCrumb Fed 10-17A	Latitude: 40.133216	Longitude: -104.803414	
** correct Lat/Long if needed: Latitude: _____		Longitude: _____	
QtrQtr: SESW	Sec: 17	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

Speer Canal 160 feet (ft) northwest. Irrigation ditch 530 ft east. Water well 170 ft northwest. Occupied buildings 740 ft northeast and 990 ft southwest. Livestock 450 ft west. County Road 950 ft south. Agriculture.

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	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 Anders 11&12-17 facility on January 24 & February 3, 2025. Groundwater was not encountered during decommissioning activities. Visual inspection & field screening of soil at one aboveground storage tank (AST), one produced water vessel (PWV), three separators, four dumpline potholes, one emission control device (ECD), the meter house, & one flowline pothole located where the abandoned-in-place portions of the flowlines associated with the Anders 11-17 & 12-17 wellheads (Remediation Nos. 28636 & 28008) were cut & capped were conducted following removal activities. Soil samples [AST01@0.5', PWV-B01@5', PWV-N01@2.5', SEP01-INLET@4', SEP01-OUTLET@4', SEP02-INLET@4', SEP02-OUTLET@4', SEP03-INLET@4', SEP03-OUTLET@4', FL01@5', & FL06(11,12-17)@4'] were submitted for analysis of full list Table 915-1 constituents to determine if a release occurred. Initial results indicated polycyclic aromatic hydrocarbon (PAH) &/or hexavalent chromium impacts exceeding the Table 915-1 allowable levels &/or background levels were present at the PWV-B01, SEP02-INLET, SEP02-OUTLET, SEP03-INLET, SEP03-OUTLET, &/or FL01 locations. Given the location in proximity to previously identified impacts at the McCrumb Fed 10-17A wellhead, the impacts were reported with Remediation No. 33761 under Spill/Release Point ID 486353, submitted March 13, 2024. Verification samples were collected with the initial samples, but in separate bottles at the PWV-B01, SEP02-OUTLET, & SEP03 locations to confirm the initial inorganic results. Final results were within the Table 915-1 allowable level or within background level x1.25 for Table 915-1 metals for hexavalent chromium at the PWV-B01, SEP02-OUTLET, & SEP03 locations. The facility soil sample locations are depicted on Figure 1. The PID readings & soil sample results are summarized in Tables 1 & 2, respectively.

Assessment activities are ongoing & details will be provided in a subsequent Form 27 supplemental 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 January 24 and July 8, 2025, excavation activities were conducted to address remaining soil impacts at the SEP02-INLET and FL01 locations and seventeen confirmation soil samples were collected from the base and sidewalls of the final excavation extents at depths of approximately ranging from 3 to 10 ft below ground surface (bgs). The confirmation soil samples were submitted for laboratory analysis of the excavation-specific waste profiles, including total petroleum hydrocarbons (TPH), PAHs, pH, boron, and/or select Table 915-1 metals using ECOMC approved methods. Analytical results indicated that electrical conductivity (EC) and sodium adsorption ratio (SAR) exceeding the ECOMC Table 915-1 allowable levels and backgrounds levels remain in the SEP02-INLET excavation. The laboratory reports are attached.

Proposed Groundwater Sampling

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

Groundwater was not encountered during facility decommissioning activities.

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 24 and February 3, 2025, visual inspection and field screening of soil were conducted at the footprint and hatch of the AST, three sidewall locations within the PWV excavation, three dumphine potholes, the ECD, and the meter house. 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.

SITE INVESTIGATION REPORT

SAMPLE SUMMARY

Soil

Number of soil samples collected 51

Number of soil samples exceeding 915-1 38

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

Approximate areal extent (square feet) 4175

NA / ND

-- Highest concentration of TPH (mg/kg) 215

-- Highest concentration of SAR 36.5

BTEX > 915-1 No

Vertical Extent > 915-1 (in feet) 10

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?

One tank battery background soil sample (TB-BG01@0.5') was collected from the soil used to construct the tank battery. Twenty-six background samples were also collected as part of the McCrumb Fed 10-17A, Anders 12-17, and Mayer Fed 14-17 wellhead cut and cap activities (Remediation Nos. 33761, 28008, and 36206), located approximately 1580 ft northeast, 1540 ft northwest, and 410 ft south, from similar depths (3' and 6' bgs), and NCRS soil type (loam). The background soil samples were submitted for laboratory analysis of pH, electrical conductivity (EC), sodium adsorption ratio (SAR), boron, and Table 915-1 metals using ECMC-approved methods. Analytical results indicate that arsenic and hexavalent chromium are naturally high in the tank battery and pH, arsenic, barium, lead, and selenium 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 2.

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 details 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? No

SOURCE REMOVAL SUMMARY

Describe how source is to be removed.

Impacted soil from the SEP02-INLET and FL01 locations will be removed and transported to a licensed disposal facility. Final disposal information will be provided upon completion of assessment 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.

REMIATION 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 indicated that EC and SAR exceeding the ECMC Table 915-1 allowable levels and background levels remain in the SEP02-INLET excavation. Groundwater was not encountered during facility decommissioning activities. Assessment activities are ongoing and details will be provided 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.

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 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: \$ 18000 _____

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 reseeded 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. 03/11/2024

Actual Spill or Release date, or date of discovery. 03/11/2024

SITE INVESTIGATION DATES

Date of Initial Actions described in Site Investigation Plan (start date). 01/24/2025

Proposed site investigation commencement. 01/24/2025

Proposed completion of site investigation. 02/26/2026

REMEDIAL ACTION DATES

Proposed start date of Remediation. 01/24/2025

Proposed date of completion of Remediation. 02/26/2026

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:

OPERATOR COMMENT

Per Rule 915.e.(2).C, discrete grab samples [SEP02-INLET@4' and FL01@5'] were collected from the most impacted material available in the source area on 9/20/25. 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:
 TPH, PAHs, boron, arsenic, barium, cadmium, copper, hexavalent chromium, lead, nickel, and zinc for SEP02
 TPH, PAHs, pH, boron, arsenic, barium, hexavalent chromium, lead, and nickel for FL01

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: 09/11/2025

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: 36596

COA Type**Description**

0 COA	
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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
404331392	FORM 27 DENIED
404333560	SOIL SAMPLE LOCATION MAP
404333566	SOIL SAMPLE LOCATION MAP
404333601	LABORATORY ANALYTICAL REPORT
404333602	LABORATORY ANALYTICAL REPORT
404333605	LABORATORY ANALYTICAL REPORT
404333606	LABORATORY ANALYTICAL REPORT
404333646	PHOTO DOCUMENTATION
404351721	ANALYTICAL DATA SUMMARY TABLE(S)
404585711	FORM 27-SUPPLEMENTAL-SUBMITTED

Total Attach: 10 Files

General Comments

User Group	Comment	Comment Date
Environmental	ECMC has denied this Form 27. The comment on Form 27 Document # 404171035 remains applicable: "ECMC has denied this Form 27. The selected samples to be used as 'background' were taken from over 1500' away and in a different agricultural field." (Rem No. 33761)	03/18/2026
Environmental	The message provided with the denial of more recent Form 27 Document # 404456027 also remains applicable: "ECMC has denied this form without technical review, Background soil samples from the off location remediation appear incomplete (Only presents BG03 and BG04 for Rem No. 28008)"	03/18/2026

Total: 2 comment(s)