

State of Colorado
Energy & Carbon Management Commission

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10/16/2025
Report taken by:
Taylor Robinson

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: <u>KERR MCGEE OIL & GAS ONSHORE LP</u>	Operator No: <u>47120</u>	Phone Numbers
Address: <u>P O BOX 173779</u>		Phone: <u>(720) 929-4306</u>
City: <u>DENVER</u>	State: <u>CO</u>	Zip: <u>80217-3779</u>
Contact Person: <u>Erik Mickelson</u>	Email: <u>DJRemediation_Forms@oxy.com</u>	Mobile: <u>()</u>

PROJECT, PURPOSE & SITE INFORMATION

PROJECT INFORMATION

Remediation Project #: 35310 Initial Form 27 Document #: 403773061

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 to establish site-specific waste profile.

SITE INFORMATION

Yes Multiple Facilities

Facility Type: <u>WELL</u>	Facility ID: _____	API #: <u>123-30652</u>	County Name: <u>WELD</u>
Facility Name: <u>MILLER 22-33</u>	Latitude: <u>40.184255</u>	Longitude: <u>-104.786675</u>	
** correct Lat/Long if needed: Latitude: _____		Longitude: _____	
QtrQtr: <u>SENW</u>	Sec: <u>33</u>	Twp: <u>3N</u>	Range: <u>66W</u> Meridian: <u>6</u> Sensitive Area? <u>Yes</u>
Facility Type: <u>WELL</u>	Facility ID: _____	API #: <u>123-30655</u>	County Name: <u>WELD</u>
Facility Name: <u>MILLER 31-33</u>	Latitude: <u>40.184407</u>	Longitude: <u>-104.786670</u>	
** correct Lat/Long if needed: Latitude: _____		Longitude: _____	
QtrQtr: <u>SENW</u>	Sec: <u>33</u>	Twp: <u>3N</u>	Range: <u>66W</u> Meridian: <u>6</u> Sensitive Area? <u>Yes</u>

Facility Type: LOCATION	Facility ID: 413308	API #: _____	County Name: WELD
Facility Name: MILLER 18-33	Latitude: 40.184255	Longitude: -104.786675	
** correct Lat/Long if needed: Latitude: 40.184550		Longitude: -104.786263	
QtrQtr: SENW	Sec: 33	Twp: 3N	Range: 66W Meridian: 6 Sensitive Area? Yes

Facility Type: WELL	Facility ID: _____	API #: 123-30657	County Name: WELD
Facility Name: MILLER 18-33	Latitude: 40.184499	Longitude: -104.786684	
** correct Lat/Long if needed: Latitude: _____		Longitude: _____	
QtrQtr: SENW	Sec: 33	Twp: 3N	Range: 66W Meridian: 6 Sensitive Area? Yes

Facility Type: WELL	Facility ID: _____	API #: 123-30660	County Name: WELD
Facility Name: MILLER 21-33	Latitude: 40.184338	Longitude: -104.786676	
** correct Lat/Long if needed: Latitude: _____		Longitude: _____	
QtrQtr: SENW	Sec: 33	Twp: 3N	Range: 66W Meridian: 6 Sensitive Area? Yes

Facility Type: SPILL OR RELEASE	Facility ID: 487751	API #: _____	County Name: WELD
Facility Name: Miller 3&6-33A Facility	Latitude: 40.184550	Longitude: -104.786263	
** correct Lat/Long if needed: Latitude: _____		Longitude: _____	
QtrQtr: SENW	Sec: 33	Twp: 3N	Range: 66W Meridian: 6 Sensitive Area? Yes

Facility Type: SPILL OR RELEASE	Facility ID: 488124	API #: _____	County Name: WELD
Facility Name: Miller 31-33 Wellhead	Latitude: 40.184407	Longitude: -104.786670	
** correct Lat/Long if needed: Latitude: _____		Longitude: _____	
QtrQtr: SENW	Sec: 33	Twp: 3N	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

Pond 350 feet (ft) north. Water well 790 ft southeast. Occupied building 1,260 ft northwest. Livestock 830 ft northwest and 1,090 ft north. Agriculture.

SITE INVESTIGATION PLAN

TYPE OF WASTE:

<input checked="" type="checkbox"/> E&P Waste	<input type="checkbox"/> Other E&P Waste	<input type="checkbox"/> Non-E&P Waste
<input checked="" type="checkbox"/> Produced Water	<input type="checkbox"/> Workover Fluids	_____
<input checked="" type="checkbox"/> Oil	<input type="checkbox"/> Tank Bottoms	
<input checked="" type="checkbox"/> Condensate	<input type="checkbox"/> Pigging Waste	
<input type="checkbox"/> Drilling Fluids	<input type="checkbox"/> Rig Wash	
<input type="checkbox"/> Drill Cuttings	<input type="checkbox"/> Spent Filters	
	<input type="checkbox"/> Pit Bottoms	
	<input type="checkbox"/> 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
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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 were completed at the Miller 18, 21, 22, 31-33 wellheads on August 2, 2024. Visual inspection and field screening of soil around the wellheads and associated pumping equipment were conducted, and soil samples were submitted for analysis of full Table 915-1 constituents to determine if a release occurred. The flowlines associated with the wellheads were removed between August 2 and August 7, 2024, and soil samples were collected from the locations where the flowline risers were disconnected from the wellheads and from the separators. The samples were submitted for analysis of full list Table 915-1 constituents to determine if a release occurred. Initial results indicated that barium impacts were present at the former 31-33 wellhead. A verification sample was collected and confirmed the initial results. As such, a Form 19 Spill/Release Report (Document No. 403915551) was submitted on September 11, 2024, and the ECMC issued Spill/Release Point ID 488124.

Decommissioning activities were completed at the Miller 3&6-33A facility on August 7 and August 9, 2024. Visual inspection and field screening of soil at two aboveground storage tanks (ASTs), one produced water vessel (PWV), four separators, one emission control device (ECD), and one meter house were conducted following removal activities. Samples were submitted for analysis of full list Table 915-1 constituents, to determine if a release occurred. Results indicated that polycyclic aromatic hydrocarbon (PAH), arsenic, barium, cadmium, and selenium impacts exceeding the Table 915-1 standards or background were present at the tank battery and SEP04-Outlet@3'. Verification samples were collected to confirm the initial results. Per updated ECMC guidance, verification sampling of organic exceedances is not considered valid. As such, a Form 19 Spill/Release Report (Document No 403884069) was submitted on August 12, 2024, and the ECMC issued Spill/Release Point ID 487751.

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 August 7, 2024 and April 29, 2025, excavation activities were conducted at the former tank battery and confirmation soil samples were collected from the base and sidewalls of the excavation at depths ranging from 7 ft below ground surface (bgs) to 14.5 ft bgs. The samples were submitted for analysis of the excavation-specific waste profile including total petroleum hydrocarbons (TPH), PAHs, boron, pH, and select 915-1 metals, using ECMC approved methods. Results indicated that pH exceeding the ECMC Table 915-1 allowable level and site-specific background level remain in the excavation. Additional assessment activities are pending. 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 wellhead cut and cap, flowline removal, or 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 August 2 and August 7, 2024, visual inspections and field screening of soil were conducted at the base and loadout of each AST, three sidewalls of the PWV excavation, the ECD, the meter house, four sidewall locations within each cut and cap excavation, eight locations at the ground surface adjacent to the cut and cap excavations, and two flowline potholes. Based on the inspection and screening results, impacted soil was not observed at the soil screening locations and no samples were submitted for analysis from these areas in accordance with the ECMC Operator Guidance for Oil & Gas Facility Closure document. A photographic log is attached.

On August 12, 2024, a soil gas survey was conducted at 21 soil vapor points installed adjacent to the former wellhead locations. GEM 5000 field reading was non-detect for methane at all soil vapor points. The soil vapor point locations are illustrated on Figure 1.

SITE INVESTIGATION REPORT

SAMPLE SUMMARY

Soil

Number of soil samples collected	137	NA / ND	--	Highest concentration of TPH (mg/kg)	143
Number of soil samples exceeding 915-1	121		--	Highest concentration of SAR	3.52
Was the areal and vertical extent of soil contamination delineated?	No			BTEX > 915-1	No
Approximate areal extent (square feet)	28696			Vertical Extent > 915-1 (in feet)	15

Groundwater

Number of groundwater samples collected	0			Highest concentration of Benzene (µg/l)	
Was extent of groundwater contaminated delineated?	No			Highest concentration of Toluene (µg/l)	

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

Highest concentration of Ethylbenzene (µg/l) _____

Number of groundwater monitoring wells installed _____

Highest concentration of Xylene (µg/l) _____

Number of groundwater samples exceeding 915-1 _____

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 sample (TB-BG01@0.5') was collected from the soil used to construct the tank battery, however this sample is no longer being applied for background value comparison. Twelve background soil samples were collected from native material outside of the facility and wellhead excavations. Background 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. Laboratory analytical results indicate that EC, SAR, pH, boron, arsenic, barium, cadmium, lead, nickel, and selenium are naturally high in the native soil. The background soil sample laboratory analytical results are summarized in Table 2. The background soil sample locations are depicted on Figures 1 and 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 are pending at the former tank battery. Excavation activities are pending at the SEP04-OUTLET location and will be summarized 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 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 data indicate that benzo (a) anthracene, pH, arsenic, barium, and/or selenium impacts exceeding the ECMC Table 915-1 allowable levels and background levels remain in the SEP04-OUTLET@3' and tank battery excavations. Groundwater was not encountered during wellhead cut and cap, flowline removal, or facility decommissioning activities. Additional assessment activities are pending at the former tank battery. Excavation activities are pending at the SEP04-OUTLET location and will be summarized 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.

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. 09/10/2024

Actual Spill or Release date, or date of discovery. 09/10/2024

SITE INVESTIGATION DATES

Date of Initial Actions described in Site Investigation Plan (start date). 08/02/2024

Proposed site investigation commencement. 08/02/2024

Proposed completion of site investigation. 03/30/2026

REMEDIAL ACTION DATES

Proposed start date of Remediation. 08/02/2024

Proposed date of completion of Remediation. 03/30/2026

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 [B01(31-33)@6', AST01@0.5', AST02@0.5', PWV-N01@2', PWV-B01@4.5', TB-E01@2', and SEP04-Outlet@3'] were collected from the most impacted material available in the source areas on 8/2/2024, 8/7/2024, and 8/12/2024. The laboratory report and results summary table are 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:

boron, arsenic, barium, cadmium, copper, lead, nickel, selenium, and zinc for the wellhead excavation area associated with B01(31-33)@6', TPH, PAHs, pH, boron, arsenic, barium, cadmium, copper, lead, nickel, selenium, and zinc for the tank battery excavation area associated with AST01@0.5', AST02@0.5', PWV-N01@2', PWV-B01@4.5', and TB-E01@2', PAHs, pH, boron, arsenic, barium, cadmium, lead, and nickel for the excavation area associated with SEP04-OUTLET@3'.

KMOG has included the verification sampling results from B01(21-33)@6'-V for further assessment of the inorganic ECMC Table 915-1 exceedance (selenium). The scientific justification for the inclusion of this verification sample is the absence of other release indicators for the wellhead excavation area associated with the B01(21-33)@6'-V verification sample. Analytical results were non-detect for all Table 915-1 organic constituents and within Table 915-1 and/or established site-specific background limits for soil suitability for reclamation analytes. KMOG has included the verification sampling results from TB-S09@7'-V due to the presence of an outlier ECMC Table 915-1 inorganic exceedance of barium at the tank battery excavation.

The following verification samples are included in the summary table due to ECMC Table 915-1 reclamation parameter exceedances: WH01-RISER(21-33)@3'-V, B01(22-33)@6'-V, TB-B10@11.5'-V, and TB-E15@7'-V.

All other verification sample results have been omitted from the summary table due to updated ECMC instructions. All verification sample results are included in the 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: Erik Mickelson

Title: Environmental Lead

Submit Date: 10/16/2025

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: Taylor Robinson

Date: 11/17/2025

Remediation Project Number: 35310

COA Type**Description**

	<p>ECMC approves the following amended confirmation sampling plan: Wellhead excavation area associated with B01(31-33)@6' -> BTEX, boron, arsenic, barium, cadmium, copper, lead, nickel, selenium, and zinc.</p> <p>Tank battery excavation area associated with AST01@0.5', AST02@0.5', PWV-N01@2', PWV-B01@4.5', and TB-E01@2' -> BTEX, TPH, Naphthalene, PAHs, pH, boron, arsenic, barium, cadmium, copper, lead, nickel, selenium, and zinc.</p> <p>Excavation area associated with SEP04-OUTLET@3' -> BTEX, PAHs, pH, boron, arsenic, barium, cadmium, lead, and nickel.</p>
	Operator to provide language/explanation for the reduction in background samples from the previous submittal (i.e. samples destroyed by excavation etc.) and specify if any additional/new background samples were taken.
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
404373043	INVESTIGATION/REMEDATION WORKPLAN (SUPPLEMENTAL)
404375145	PHOTO DOCUMENTATION
404375155	LABORATORY ANALYTICAL REPORT
404375157	LABORATORY ANALYTICAL REPORT
404375704	LABORATORY ANALYTICAL REPORT
404375705	LABORATORY ANALYTICAL REPORT
404375706	LABORATORY ANALYTICAL REPORT

404375708	LABORATORY ANALYTICAL REPORT
404375710	LABORATORY ANALYTICAL REPORT
404383739	LABORATORY ANALYTICAL REPORT
404389219	SOIL SAMPLE LOCATION MAP
404389223	SOIL SAMPLE LOCATION MAP
404389224	SOIL SAMPLE LOCATION MAP
404389241	ANALYTICAL DATA SUMMARY TABLE(S)
404438789	FORM 27-SUPPLEMENTAL-SUBMITTED

Total Attach: 15 Files

General Comments

User Group	Comment	Comment Date
		Stamp Upon Approval

Total: 0 comment(s)