

State of Colorado  
Energy & Carbon Management Commission

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Report taken by:  
Alexander Ahmadian

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 ECOM 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 &amp; GAS ONSHORE LP</u>	Operator No: <u>47120</u>	<b>Phone Numbers</b>
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 #: 38905 Initial Form 27 Document #: 404072931

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 reduced list of contaminants of concern.

SITE INFORMATION

Yes  Multiple Facilities

Facility Type: <u>SPILL OR RELEASE</u>	Facility ID: <u>489174</u>	API #: _____	County Name: <u>WELD</u>
Facility Name: <u>Howard 30N,4C,29N-21HZ O Fac BT1</u>	Latitude: <u>40.032036</u>	Longitude: <u>-104.899167</u>	
** correct Lat/Long if needed: Latitude: _____		Longitude: _____	
QtrQtr: <u>SESW</u>	Sec: <u>21</u>	Twp: <u>1N</u>	Range: <u>67W</u> Meridian: <u>6</u> Sensitive Area? <u>Yes</u>

Facility Type: <u>TANK BATTERY</u>	Facility ID: <u>489182</u>	API #: _____	County Name: <u>WELD</u>
Facility Name: <u>Howard 30N,4C,29N-21HZ O TB 489182</u>	Latitude: <u>40.032211</u>	Longitude: <u>-104.899502</u>	
** correct Lat/Long if needed: Latitude: _____		Longitude: _____	
QtrQtr: <u>SESW</u>	Sec: <u>21</u>	Twp: <u>1N</u>	Range: <u>67W</u> Meridian: <u>6</u> Sensitive Area? <u>Yes</u>

## SITE CONDITIONS

General soil type - USCS Classifications SM

Most Sensitive Adjacent Land Use Surface Water & Occupied Buildings

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

Thompson Ditch 130 feet (ft) west. Thompson Reservoir 720 ft northeast. Water well 960 ft west. Occupied buildings 980 ft west and 1220 ft southwest. Livestock 1050 ft west and 860 ft southwest. County road 1220 ft south. Agriculture. An area with wetland characteristics is located approximately 390 ft north.

## 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.

On 1/25/25, a release of greater than 5 barrels of produced fluids inside secondary containment was identified at the Howard 30N,4C,29N-21HZ O Fac BT1 production facility. The cause of the release was due to a frozen pressure release valve. A Form 19 Initial Release Report (Doc# 404069818) was submitted on 1/28/25, & the ECMC issued Release Point ID 489174. Assessment activities began on 1/25/25. Groundwater was not encountered during assessment activities. Visual inspection & field screening of soil at the release location were conducted & a soil sample was submitted for analysis of full list Table 915-1 constituents to establish a waste profile. Laboratory results indicated that total petroleum hydrocarbons (TPH), benzene, toluene, ethylbenzene, total xylenes (BTEX), 1,2,4- & 1,3,5-trimethylbenzene (TMB), & polycyclic aromatic hydrocarbon (PAH) impacts exceeding the Table 915-1 allowable levels were present at the site.

Partial decommissioning activities were completed at the former facility location on 3/3/25. Visual inspection & field screening of soil at one aboveground storage tank (AST) & one vapor recovery tower (VRT) were conducted following removal activities. Soil samples were submitted for analysis of full list Table 915-1 constituents. Initial results indicated that TPH, TMBs, PAHs, pH, &/or barium exceeding the Table 915-1 allowable levels & background levels were present at both locations. Verification samples were collected concurrently with the initial samples but in separate laboratory-provided bottles to confirm the initial inorganic results. Final results confirmed that pH & barium impacts exceeding the Table 915-1 allowable levels & background levels were present at the VRT & AST, respectively. The facility soil sample locations are depicted on Figure 1. The PID readings & soil sample results are summarized in Tables 1 & 2, respectively.

Excavation 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 3/3 and 6/18/25, excavation activities were conducted to address remaining soil impacts at the tank battery and twenty-two confirmation soil samples were collected from the base and sidewalls of the final excavation extents at depths of approximately 10 ft below ground surface (bgs) and 5 ft bgs, respectively. The confirmation soil samples were submitted for laboratory analysis of the site-specific waste profile, using ECMC-approved methods. Analytical results indicated that TPH, BTEX, TMB, PAH, boron, arsenic, barium, and lead impacts exceeding the Table 915-1 allowable levels remain in the excavation. Background samples are needed to determine inorganic constituent compliance. Additionally, the produced water vessel (PWV) was removed to allow full excavation of the impacted soil from the initial release and will be reset upon completion of soil assessment activities. 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 partial 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 March 3, 2025, visual inspection and field screening of soil were conducted at the base and loadout of the AST. 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 ECOM Operator Guidance. A photographic log is attached.

On April 29, 2025, four soil samples were collected from the overburden soil stockpile and submitted for laboratory analysis of the site-specific waste profile. Analytical results were within the Table 915-1 allowable levels for organic constituents. Background samples are needed to determine inorganic constituent compliance. The stockpile sample locations are illustrated on Figure 1.

## SITE INVESTIGATION REPORT

### SAMPLE SUMMARY

#### Soil

Number of soil samples collected 31

Number of soil samples exceeding 915-1 31

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

Approximate areal extent (square feet) 4275

#### NA / ND

-- Highest concentration of TPH (mg/kg) 45010

-- Highest concentration of SAR 2.7

BTEX > 915-1 Yes

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 but is not being applied because it was consumed by the tank battery excavation. Additional background samples are needed to determine inorganic constituent compliance.

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?

Excavation 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 facility decommissioning activities 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.

### REMEDICATION 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 TPH, BTEX, TMB, PAH, boron, arsenic, barium, and lead impacts exceeding the Table 915-1 allowable levels remain in the excavation. Background samples are needed to determine inorganic constituent compliance. Groundwater was not encountered during facility decommissioning activities. Excavation 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.



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. 01/26/2025

Actual Spill or Release date, or date of discovery. 01/25/2025

### SITE INVESTIGATION DATES

Date of Initial Actions described in Site Investigation Plan (start date). 01/25/2025

Proposed site investigation commencement. 01/25/2025

Proposed completion of site investigation. 01/26/2026

### REMEDIAL ACTION DATES

Proposed start date of Remediation. 01/25/2025

Proposed date of completion of Remediation. 01/26/2026

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, a discrete grab sample [SS01@0.5'-WP] was collected from the most impacted material available in the source area on 1/25/25. 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: TPH, BTEX, TMBs, PAHs, boron, arsenic, barium, lead, and nickel.

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: 08/21/2025

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: Alexander Ahmadian

Date: 09/30/2025

Remediation Project Number: 38905

**COA Type****Description**

	ECMC agrees to the reduced analyte list based on the data presented herein. However, if during subsequent site investigation/remediation soil that appears to be more impacted (based on PID readings, visual and/or olfactory indicators) is discovered, Operator shall collect a sample(s) from that location (those locations) for laboratory analysis of full ECMC Table 915-1 contaminants of concern. If analytes beyond those proposed in the above amended sampling plan are detected, those compounds will be added to the sampling plan and additional confirmation samples may be required.
1 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**

404281306	FORM 27-SUPPLEMENTAL-SUBMITTED
404281332	LABORATORY ANALYTICAL REPORT
404281333	LABORATORY ANALYTICAL REPORT
404281335	LABORATORY ANALYTICAL REPORT
404281336	LABORATORY ANALYTICAL REPORT
404281337	PHOTO DOCUMENTATION
404291580	ANALYTICAL DATA SUMMARY TABLE(S)
404294355	SOIL SAMPLE LOCATION MAP

Total Attach: 8 Files

**General Comments****User Group****Comment****Comment Date**

		Stamp Upon Approval
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Total: 0 comment(s)