

State of Colorado
Energy & Carbon Management Commission

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

PROJECT, PURPOSE & SITE INFORMATION

PROJECT INFORMATION

Remediation Project #: 22664 Initial Form 27 Document #: 402997195

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: _____

SITE INFORMATION

Yes Multiple Facilities

Facility Type: LOCATION	Facility ID: 462450	API #: _____	County Name: WELD
Facility Name: HUNT-TANK 5NENE	Latitude: 40.258720	Longitude: -104.792698	
** correct Lat/Long if needed: Latitude: 40.258735		Longitude: -104.792225	
QtrQtr: NENE	Sec: 5	Twp: 3N	Range: 66W Meridian: 6 Sensitive Area? Yes
Facility Type: SPILL OR RELEASE	Facility ID: 482122	API #: _____	County Name: WELD
Facility Name: Kern UPPR 41-5 1 O SA Facility	Latitude: 40.258735	Longitude: -104.792225	
** correct Lat/Long if needed: Latitude: _____		Longitude: _____	
QtrQtr: NENE	Sec: 5	Twp: 3N	Range: 66W Meridian: 6 Sensitive Area? Yes

SITE CONDITIONS

General soil type - USCS Classifications SM

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

Water wells located approximately 750 feet (ft) south and 850 ft north-northwest; Occupied buildings located approximately 100 ft south and 850 ft north; Agriculture to the east and west.

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
Yes	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.

Facility decommissioning activities were completed at the Kern UPRR 41-5 1 O SA Facility on May 3 and May 24, 2022. Groundwater was encountered in the facility excavations at approximately 3.5 ft bgs. Visual inspection and field screening of soil at one aboveground storage tank (AST), one produced water vessel (PWV), one separator, one emission control device (ECD), one meter house, and nine potholes were conducted following removal activities. Soil samples AST01@6'-WP, PWV-BD1@4'-WP, and PWV-ND1@2.5' were submitted for analysis of full list Table 915-1 constituents due to potential impacts. Samples Sep-Inlet@3'-WP, Sep-Outlet@3'-WP, FL01@4', and FL02@4' were submitted for reduced list Table 915-1 constituents including benzene, toluene, ethylbenzene, xylenes (BTEX), 1,2,4- and 1,3,5-trimethylbenzenes (TMBs), naphthalene, total petroleum hydrocarbons (TPH)-gasoline range organics (GRO), TPH-diesel range organics (DRO), and TPH-oil range organics (ORO), pH, electrical conductivity (EC), sodium adsorption ratio (SAR), and boron to determine if a release occurred. Laboratory analytical results indicated that TPH, TMBs, naphthalene, 1-methylnaphthalene, 2-methylnaphthalene, and arsenic impacts exceeding the ECMC Table 915-1 allowable levels and/or background levels were present at the AST, PWV, FL01, and FL02 locations. As such, a Form 19 Initial/Supplemental Spill/Release Report (Document No. 403038258) was submitted on May 5, 2022 and the ECMC issued Spill/Release Point ID 482122. The facility soil sample locations are depicted on Figure 1. 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

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

Between 5/3/22 and 8/5/24, excavation activities were conducted to address remaining soil impacts at the former AST, PWV, FL01, and FL02 locations. Samples were collected from the base of the tank battery excavation at depths ranging from 4 ft bgs to 15 ft bgs. Soil samples were submitted for laboratory analysis of the site-specific waste profile following waste profile procedures accepted at the time of sampling, including Table 915-1 organics, pH, boron, and/or select Table 915-1 metals. Initial results indicated that pH and PAH impacts exceeding the ECMC Table 915-1 allowable levels or background were present along the northern sidewall. Verification samples were collected to confirm the results. Final results were within the ECMC Table 915-1 allowable levels or background levels at the extents of the excavation. Per updated guidance from the ECMC, verification of organic exceedances are no longer considered valid. Assessment activities are ongoing. The lab reports are attached.

Proposed Groundwater Sampling

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

Between May 25, 2022 and June 24, 2024, six groundwater samples were collected from the facility excavation. The samples were submitted for laboratory analysis of full list Table 915-1 constituents in groundwater. Groundwater was in contact with impacted soil. Background groundwater samples were collected for laboratory analysis of Table 915-1 inorganic constituents in groundwater. Laboratory analytical results indicate that TMBs concentrations exceeding the ECMC Table 915-1 allowable levels are present in groundwater. The excavation groundwater sample and background sample locations are depicted on Figures 1 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 October 10, 2023, December 6, 2024, and April 21, 2025 staining was observed during reclamation activities. Soil samples (SS01 through SS08) were submitted for analysis of full list Table 915-1 constituents to determine if additional impacts were present. Initial results indicated that PAH, boron, SAR, pH, and Table 915-1 metals exceeding the allowable levels or background were present at the SS02 and SS04 through SS08 locations. A verification sample was collected at SS02 and was within allowable levels or background. Additional excavation was conducted at SS04 and results at the final excavation extents were within the ECMC Table 915-1 allowable levels or background. Metals impacts exceeding the allowable levels and background levels were present at the SS01 location and were excavated with the combined facility excavation activities summarized above. Verification samples will be collected to confirm the April 21, 2025 inorganic results. Assessment activities are ongoing.

SITE INVESTIGATION REPORT

SAMPLE SUMMARY

Soil	NA / ND
Number of soil samples collected <u>123</u>	-- Highest concentration of TPH (mg/kg) <u>658</u>
Number of soil samples exceeding 915-1 <u>105</u>	-- Highest concentration of SAR <u>11.3</u>
Was the areal and vertical extent of soil contamination delineated? <u>No</u>	BTEX > 915-1 <u>No</u>
Approximate areal extent (square feet) <u>9925</u>	Vertical Extent > 915-1 (in feet) <u>15</u>
Groundwater	
Number of groundwater samples collected <u>6</u>	ND Highest concentration of Benzene (µg/l) _____
Was extent of groundwater contaminated delineated? <u>No</u>	ND Highest concentration of Toluene (µg/l) _____
Depth to groundwater (below ground surface, in feet) <u>4</u>	-- Highest concentration of Ethylbenzene (µg/l) <u>17.7</u>
Number of groundwater monitoring wells installed <u>0</u>	-- Highest concentration of Xylene (µg/l) <u>513</u>
Number of groundwater samples exceeding 915-1 <u>1</u>	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 for comparison to shallow soil samples collected within the fill material. Eleven background soil samples were collected outside of the facility excavations, eight were collected as part of the Hunt 21-5 wellhead closure activities and six were collected as part of the HSR-Deborah 7-5 Wellhead closure activities, located in the same quarter section and NRCS soil type (loamy sand). The samples were submitted for analysis of pH, specific conductivity (EC), SAR, boron, and metals. Results indicated that levels of arsenic and barium are naturally high in the soil used to construct the tank battery and pH, SAR, arsenic, cadmium, hexavalent chromium, lead, and selenium are naturally high in the soil.

One background groundwater sample was collected at the facility and three were collected during the HSR-Deborah 7-5 wellhead closure activities.

The background sample locations are depicted 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)

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: \$ 30000

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:

Approximately 5,627 bbls of water were removed from the site and transported to the Aggregate Recycle Facility in Weld County, Colorado for recycling. Approximately 3000 cubic yards of impacted soil were removed from the site and transported to the Kerr-McGee Land Treatment Facility in Weld County, Colorado for recycling.

Volume of E&P Waste (solid) in cubic yards 3020
E&P waste (solid) description Impacted Soil
ECMC Disposal Facility ID #, if applicable: 149007
Non-ECMC Disposal Facility: Front Range Landfill in Erie, CO (20 CY)
Volume of E&P Waste (liquid) in barrels 5661
E&P waste (liquid) description Water
ECMC Disposal Facility ID #, if applicable: 434766
Non-ECMC Disposal Facility: Buffalo Ridge Landfill in Keenesburg, CO (34 bbls)

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. 05/04/2022

Actual Spill or Release date, or date of discovery. 05/04/2022

SITE INVESTIGATION DATES

Date of Initial Actions described in Site Investigation Plan (start date). 05/03/2022

Proposed site investigation commencement. 05/03/2022

Proposed completion of site investigation. 12/16/2025

REMEDIAL ACTION DATES

Proposed start date of Remediation. 05/03/2022

Proposed date of completion of Remediation. 12/16/2025

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 general comments on denied Form 27 Document No. 404011325:

General Comment #1: An updated background sample locations map is included as Figure 2.

General Comment #2: Background soil samples TB-BG@6", Native-BG01@3', and Native-BG01@6' have been removed from background calculations.

General Comment #3: Additional assessment activities will be conducted in the vicinity of N12@6'.

General Comment #4: Tables 1 and 2 have been updated with the correct sample ID.

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: 06/17/2025

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: 22664

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**

404197087	FORM 27 DENIED
404197109	PHOTO DOCUMENTATION
404197110	LABORATORY ANALYTICAL REPORT
404197111	LABORATORY ANALYTICAL REPORT
404204986	LABORATORY ANALYTICAL REPORT
404240594	ANALYTICAL DATA SUMMARY TABLE(S)
404241768	SITE MAP
404342206	FORM 27-SUPPLEMENTAL-SUBMITTED

Total Attach: 8 Files

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

Environmental	ECMC has denied this Form. Verification samples of this magnitude are not considered valid. If the Operator chooses to use verification samples for every sample point, then the Operator must explain their scientific justification for running multiple reruns/resamples.	09/04/2025
Environmental	Off location soil sample locations are not approved by ECMC as they are not within the same land uses, the same agricultural fields, or the same NRCS mapped soil types.	09/04/2025
Environmental	Operator shall differentiate through formatting of figures and analytical data summary tables which samples remain in situ vs. which have been remediated on the replacement Supplemental Form 27. Operator shall conduct a thorough review of all available data and shall propose additional assessment and/or remediation as necessary to address any additional exceedances of Table 915-1 which remain in situ and have not yet been addressed.	09/04/2025

Total: 3 comment(s)