

State of Colorado
Energy & Carbon Management Commission

1120 Lincoln Street, Suite 801, Denver, Colorado 80203
Phone: (303) 894-2100 Fax: (303) 894-2109



Document Number:
403725696
Receive Date:
03/29/2024

Report taken by:
Laurel Anderson

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 & GAS ONSHORE LP</u>	Operator No: <u>47120</u>	Phone Numbers Phone: <u>(720) 929-4306</u> Mobile: <u>()</u>
Address: <u>P O BOX 173779</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>	

PROJECT, PURPOSE & SITE INFORMATION

PROJECT INFORMATION

Remediation Project #: 24884 Initial Form 27 Document #: 403158691

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: <u>LOCATION</u>	Facility ID: <u>318259</u>	API #: _____	County Name: <u>WELD</u>
Facility Name: <u>WILLIAM DEASON GAS UNIT-61N66W 6NWSE</u>		Latitude: <u>40.076840</u>	Longitude: <u>-104.818120</u>
** correct Lat/Long if needed: Latitude: _____		Longitude: _____	
QtrQtr: <u>NWSE</u>	Sec: <u>6</u>	Twp: <u>1N</u>	Range: <u>66W</u> Meridian: <u>6</u> Sensitive Area? <u>Yes</u>

Facility Type: <u>SPILL OR RELEASE</u>	Facility ID: <u>482371</u>	API #: _____	County Name: <u>WELD</u>
Facility Name: <u>Deason William GU 1 Tank Battery</u>		Latitude: <u>40.077534</u>	Longitude: <u>-104.818122</u>
** correct Lat/Long if needed: Latitude: _____		Longitude: _____	
QtrQtr: <u>NWSE</u>	Sec: <u>6</u>	Twp: <u>1N</u>	Range: <u>66W</u> Meridian: <u>6</u> Sensitive Area? <u>Yes</u>

SITE CONDITIONS

General soil type - USCS Classifications CH Most Sensitive Adjacent Land Use Residential
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

The nearest building is located approximately 180 feet northeast of the facility.
The nearest domestic water well is located approximately 290 feet northeast of the facility.
Surface water is located approximately 70 feet north of the facility.
A wetland is located approximately 70 feet north of the facility.
The facility is located within a designated high-priority habitat.

SITE INVESTIGATION PLAN

TYPE OF WASTE:

- E&P Waste Other E&P Waste Non-E&P Waste
 Produced Water Workover Fluids Non-Impacted Groundwater
 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
No	GROUNDWATER	No impacts encountered	Groundwater sampling and laboratory analysis
No	SOILS	117' (N-S) x 68' (E-W) x 6.5' bgs	Soil sampling and laboratory analysis

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 June 13, 2022, historically impacted soils were discovered during reclamation activities at the previously decommissioned Deason William GU 1 O SA Production Facility. The ECOM issued Spill/Release Point ID 482371 for this release. Excavation activities were subsequently conducted to address historical soil impacts in the initial reclamation area, as described in a previous Form 27-Supplemental (Document No. 403353197). Analytical results indicated that historical soil impacts in the initial reclamation area were remediated to be in compliance with ECOM Table 915-1 standards, and/or within the range of site-specific background levels (x 1.25 for metals). Non-impacted groundwater was encountered in the initial excavation area at approximately 3 feet below ground surface (bgs). On September 26, 2023, additional historically impacted soil was discovered during ongoing reclamation activities at this location, and a secondary waste characterization sample (REC2-B01@3") was collected, as described in a previous Form 27-Supplemental update (Document No. 403544523). Excavation activities to address historical soil impacts in the secondary excavation area were subsequently conducted, as described herein. Non-impacted groundwater was encountered in the secondary excavation area at approximately 3 feet below ground surface (bgs). Soil sample location and field screening data are presented in Table 1. Soil and groundwater analytical results are summarized in Tables 2 through 6. The soil and groundwater sample locations are illustrated on Figures 1 and 2.

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):

On June 22, 2022 - January 19, 2023, excavation activities were conducted in the initial reclamation area, as described in a previous Form 27-Supplemental update (Document No. 403353197). Analytical results indicate that soil impacts in the initial excavation area were remediated to be in compliance with Table 915-1 standards and/or within site-specific background levels (x 1.25 for metals). On November 15, 2023 - January 18, 2024, additional excavation activities were conducted in the second reclamation area. Based on the results for waste characterization sample REC2-B01@3", confirmation soil samples from the second excavation area were submitted for laboratory analysis of BTEX, TPH, TMB, PAHs, and select Table 915-1 metals (As, Ba, Cd, Cu, Pb, Ni, Se, Ag, Zn). Analytical results indicate that soil impacts in the second excavation area were remediated to be in compliance with Table 915-1 standards and/or within the range of site-specific background levels (x 1.25 for metals).

Proposed Groundwater Sampling

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

Non-impacted groundwater was encountered within the reclamation excavation areas at approximately 3 feet bgs. On June 22, 2022, and November 15, 2023, two (2) groundwater samples (REC-GW01 and REC2-GW01) were collected from the excavation areas and submitted for laboratory analysis of benzene, toluene, ethylbenzene, total xylenes (BTEX), naphthalene, 1,2,4- and 1,3,5-trimethylbenzene (TMB) by United States Environmental Protection Agency (USEPA) Method 8260D. Analytical results indicated that constituent concentrations in groundwater samples REC-GW01 and REC2-GW01 were below laboratory detection limits and therefore in compliance with ECMC Table 915-1 standards. The groundwater sample locations and proposed temporary monitoring well locations are illustrated on Figure 3. The groundwater analytical results are presented in Table 6.

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):

Based on the groundwater monitoring COA that was issued by the ECMC for a previous Form 27-Supplemental update (Document No. 403353197), temporary groundwater monitoring wells will be installed at the site to continue monitoring clean groundwater conditions. Subsequent to installation, the temporary groundwater monitoring wells will be sampled for four consecutive quarters and submitted for laboratory analysis of the Table 915-1 organic constituents (BTEX, naphthalene, 1,2,4- and 1,3,5-TMB), as approved by the ECMC in a previous Form 27-Supplemental update (Document No. 403544523). The proposed temporary monitoring well locations are illustrated on Figure 3.

SITE INVESTIGATION REPORT

SAMPLE SUMMARY

Soil

Number of soil samples collected 7
 Number of soil samples exceeding 915-1 33
 Was the areal and vertical extent of soil contamination delineated? Yes
 Approximate areal extent (square feet) 6400

NA / ND

-- Highest concentration of TPH (mg/kg) 231.1
 -- Highest concentration of SAR 4.44
 BTEX > 915-1 No
 Vertical Extent > 915-1 (in feet) 6

Groundwater

Number of groundwater samples collected 2
 Was extent of groundwater contaminated delineated? Yes
 Depth to groundwater (below ground surface, in feet) 3
 Number of groundwater monitoring wells installed 0
 Number of groundwater samples exceeding 915-1 0

ND Highest concentration of Benzene (µg/l) _____
 ND Highest concentration of Toluene (µg/l) _____
 ND Highest concentration of Ethylbenzene (µg/l) _____
 ND Highest concentration of Xylene (µg/l) _____
 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?

Twenty-eight (28) background soil samples were collected from undisturbed native material adjacent to the former production facility and reclamation excavation locations, at comparable depth and soil composition to the confirmation and waste characterization soil samples. The background soil samples were submitted for laboratory analysis of Table 915-1 metals and/or the Soil Suitability for Reclamation Parameters using standard ECMC-approved methods appropriate for detecting the target analytes in Table 915-1. Analytical results for the background soil samples are presented in Tables 4 and 5.

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?

Based on the groundwater monitoring COA that was issued by the ECMC for a previous Form 27-Supplemental update (Document No. 403353197), temporary groundwater monitoring wells will be installed at the site to continue monitoring clean groundwater conditions. Subsequent to installation, the temporary groundwater monitoring wells will be sampled for four consecutive quarters and submitted for laboratory analysis of the Table 915-1 organic constituents (BTEX, naphthalene, 1,2,4- and 1,3,5-TMB), as approved by the ECMC in a previous Form 27-Supplemental update (Document No. 403544523). The proposed temporary monitoring well locations are illustrated on Figure 3.

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.

From June 22, 2022, through January 19, 2023, approximately 300 cubic yards of impacted soil were removed from the initial excavation area and transported to the Front Range Landfill in Erie, Colorado for disposal; approximately 1,080 cubic yards of impacted soil were removed from the initial excavation area and transported to the Buffalo Ridge Landfill in Keenesburg, Colorado for disposal. Following the collection of groundwater sample REC-GW01, approximately 3,780 barrels of non-impacted groundwater were removed from the initial excavation area via vacuum truck, and transported to the Kerr-McGee Aggregate Recycle Facility in Weld County, Colorado for recycling. From November 15, 2023, through January 18, 2024, approximately 180 cubic yards of impacted soil were removed from the second excavation area and transported to the Buffalo Ridge Landfill in Keenesburg, Colorado for disposal. The excavation areas were subsequently backfilled and contoured to match pre-existing site 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 that impacted soils in the initial and second reclamation excavation areas have been remediated to be in compliance with the Table 915-1 standards and/or within the acceptable range of site-specific background levels (x 1.25 for metals). Laboratory analytical results indicate that constituent concentrations in the groundwater samples collected from the reclamation excavation areas (REC-GW01 and REC2-GW01) were below laboratory detection limits (ND). As such, current groundwater conditions at this site are in compliance with ECMC Table 915-1 standards. Based on the groundwater monitoring COA that was issued by the ECMC for a previous Form 27-Supplemental (Document No. 403353197), temporary groundwater monitoring wells will be installed at the site to continue monitoring clean groundwater conditions. Subsequent to installation, the temporary groundwater monitoring wells will be sampled for four consecutive quarters and submitted for laboratory analysis of the Table 915-1 organic constituents (BTEX, naphthalene, 1,2,4- and 1,3,5-TMB), as approved by the ECMC in a previous Form 27-Supplemental update (Document No. 403544523). The estimated time to attain NFA is four quarters from the date of monitoring well installation and initiation of groundwater monitoring.

Soil Remediation Summary

In Situ

Ex Situ

_____ Bioremediation (or enhanced bioremediation)

Yes Excavate and offsite disposal

_____ Chemical oxidation

If Yes: Estimated Volume (Cubic Yards) 1560

_____ Air sparge / Soil vapor extraction

Name of Licensed Disposal Facility or ECMC Facility ID # _____

_____ Natural Attenuation

No 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.

Based on the groundwater monitoring COA that was issued by the ECMC for a previous Form 27-Supplemental (Document No. 403353197), temporary groundwater monitoring wells will be installed at the site to continue monitoring clean groundwater conditions. Subsequent to installation, the temporary groundwater monitoring wells will be sampled for four consecutive quarters and submitted for laboratory analysis of the Table 915-1 organic constituents (BTEX, naphthalene, 1,2,4- and 1,3,5-TMB), as approved by the ECMC in a previous Form 27-Supplemental update (Document No. 403544523). The excavation groundwater sample locations and proposed temporary monitoring well locations are illustrated on Figure 3. Groundwater analytical data is presented in Table 6. A groundwater monitoring location figure illustrating the locations of the surveyed temporary monitoring wells will be provided in a forthcoming Form 27-Supplemental update.

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 Remediation progress update _____

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 Colorado 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: \$ 45000 _____

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 3,780 barrels of non-impacted groundwater were removed from the initial reclamation excavation area via vacuum truck and transported to the Kerr-McGee Aggregate Recycle Facility in Weld County, Colorado for recycling.

Volume of E&P Waste (solid) in cubic yards _____ 1560

E&P waste (solid) description _____ Impacted soil

ECMC Disposal Facility ID #, if applicable: _____

Non-ECMC Disposal Facility: _____
Front Range Landfill - Erie, Colorado;
Buffalo Ridge Landfill - Keenesburg,
Colorado

Volume of E&P Waste (liquid) in barrels _____ 3780

E&P waste (liquid) description _____ Non-impacted groundwater

ECMC Disposal Facility ID #, if applicable: _____ 434766

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? Yes

Does the previous reply indicate consideration of background concentrations? Yes

Does Groundwater meet Table 915-1 standards? Yes

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. Timeliness of reclamation initiation and completion will be subject to NFA, surface owner discretion and land use, and suitable ground conditions which allow for execution of surface reclamation activities so as to not cause unwarranted damages.

Is the described reclamation complete? No

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? Yes

If YES, does the seed mix comply with local soil conservation district recommendations? Yes

Did the local soil conservation district provide the seed mix? No

SITE RECLAMATION DATES

Proposed date of commencement of Reclamation. 06/30/2026

Proposed date of completion of Reclamation. 07/31/2026

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. 06/14/2022

Actual Spill or Release date, or date of discovery. 06/13/2022

SITE INVESTIGATION DATES

Date of Initial Actions described in Site Investigation Plan (start date). 06/13/2022

Proposed site investigation commencement. 06/22/2022

Proposed completion of site investigation. 02/27/2024

REMEDIAL ACTION DATES

Proposed start date of Remediation. 06/22/2022

Proposed date of completion of Remediation. 06/30/2025

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

Based on the groundwater monitoring COA that was issued by the ECMC for a previous Form 27-Supplemental (Document No. 403353197), temporary groundwater monitoring wells will be installed at the site to continue monitoring clean groundwater conditions. Form 27-Supplemental Updates will be submitted to the ECMC on a quarterly basis until temporary groundwater monitoring wells have been installed and the ECMC-mandated four quarters of groundwater monitoring have been initiated. The Project Implementation Summary is provided as Attachment C.

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: 03/29/2024

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: Laurel Anderson

Date: 07/25/2024

Remediation Project Number: 24884

COA Type

Description

	Operator shall provide notice to Area EPS, Laurel Anderson (laurel.anderson@state.co.us) and DJ Basin Environmental Supervisor, Nikki Graber (nikki.graber) at least 48-hour prior to monitoring well installation.
	Analytical data for multiple soil samples indicate the concentrations of multiple contaminants of concern are less than the laboratory method detection/reporting limit; however, the laboratory method detection/reporting limit is greater than the protection of groundwater soil screening levels. Operator shall ensure all future confirmation samples are analyzed for full Table 915-1 using appropriate methods which have detection limits less than or equal to the cleanup concentrations in Table 915-1 and WQCC Regulation 41, as incorporated by reference in Rule 901.b.
	Per COA on Form 27s Doc #403353197: "Operator shall submit a minimum of one soil sample for laboratory analysis of full Table 915-1 Parameters - TPH (C6-C36), Table 915-1 Organic Compounds in Soil, Table 915-1 metals, and Table 915-1 Soil Suitability for Reclamation (Electrical conductivity, Sodium adsorption ratio, and pH by saturated paste method, boron (hot water soluble)) from each soil boring advanced during monitoring well installation. -The sample collected will be from the interval(s) displaying the highest degree of impacts or in the absence of apparent impacts from the interval in which organic compounds were previously detected or the soil-groundwater interface." Note: Soil samples shall be collected at a depth to ensure samples are representative conditions of in-situ soil beneath the backfill of excavations conducted during previous site investigation and remediation activities. In accordance with Rule 914, if impacts are observed during monitoring well installation a step out monitoring well(s) shall be installed to define the horizontal extent of impacts to soil and groundwater and the monitoring wells shall be installed within 45 days of observations.
	Per COA on Form 27s Doc #403353197: "Due to the presence of impacted soil in contact with groundwater Operator will install monitoring wells (within the spill/release area, crossgradient, down-gradient, and up-gradient) to properly characterize groundwater pursuant to Rule 915. Operator will analyze groundwater samples from all monitoring wells for Table 915-1 Parameters for a minimum of four quarterly monitoring events." ECMC does not approve of Operator's request for contaminant of concern reduction.
	Operator shall update the Sample Summary section on the subsequent Supplemental Form 27 to reflect ongoing site investigation activities.

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.

<u>Att Doc Num</u>	<u>Name</u>
403725696	FORM 27-SUPPLEMENTAL-SUBMITTED
403733970	ANALYTICAL RESULTS
403733971	PHOTO DOCUMENTATION
403733972	IMPLEMENTATION SCHEDULE
403733974	SOIL SAMPLE LOCATION MAP
403733975	SOIL SAMPLE LOCATION MAP
403733976	GROUND WATER SAMPLE LOCATION
403733977	ANALYTICAL RESULTS

Total Attach: 8 Files

General Comments

<u>User Group</u>	<u>Comment</u>	<u>Comment Date</u>
		Stamp Upon Approval

Total: 0 comment(s)