FORM 27 Rev 5/22

State of Colorado
Energy & Carbon Management Commission

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Report taken by: Kari Brown

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 INFORMATON

Name of Operator: KERR MCGEE OIL & GAS ONSHORE LP Operator No: 47120
Address: P O BOX 173779
City: DENVER State: CO Zip: 80217-3779
Contact Person: Erik Mickelson Email: DJRemediation_Forms@oxy.com

Phone Numbers
Phone: (720) 929-4306
Mobile: ( )

PROJECT, PURPOSE & SITE INFORMATION

PROJECT INFORMATION

Remediation Project #: 35188 Initial Form 27 Document #: 403714460

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.
- [X] 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.
- [X] 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: WELL Facility ID: API #: 123-09899 County Name: WELD
Facility Name: ADOLPH ANDERSON UNIT 2 Latitude: 40.126628 Longitude: -104.769531
** correct Lat/Long if needed: Latitude: Longitude:
QtrQtr: SWNW Sec: 22 Twp: 2N Range: 66W Meridian: 6 Sensitive Area? Yes

Facility Type: SPILL OR RELEASE Facility ID: 487490 API #: County Name: WELD
Facility Name: Anderson, Adolph Unit 2 Latitude: 40.126662 Longitude: -104.769666
** correct Lat/Long if needed: Latitude: Longitude:
QtrQtr: SWNW Sec: 22 Twp: 2N Range: 66W Meridian: 6 Sensitive Area? Yes

Facility Type: SPILL OR RELEASE Facility ID: 487494 API #: County Name: WELD

Facility Name: Anderson, Adolph Unit 2 Flowline Latitude: 40.126620 Longitude: -104.769924

** correct Lat/Long if needed: Latitude: Longitude:

QtrQtr: SWNW Sec: 22 Twp: 2N Range: 66W Meridian: 6 Sensitive Area? Yes

SITE CONDITIONS

General soil type - USCS Classifications SM

Most Sensitive Adjacent Land Use Occupied Buildings

Is domestic water well within 1/4 mile? Yes

Is surface water within 1/4 mile? No

Is groundwater less than 20 feet below ground surface? Yes

Other Potential Receptors within 1/4 mile

Water well 510 feet (ft). Livestock 130 ft west and 1,100 ft north. Occupied Building 1,310 ft north. Commercial Buildings 390 ft northwest, 900 ft northeast, and 1,250 ft south. County Road 910 ft west.

SITE INVESTIGATION PLAN

TYPE OF WASTE:

[X] **E&P Waste**	[ ] **Other E&P Waste**	[ ] **Non-E&P Waste**
[X] Produced Water	[ ] Workover Fluids	_____
[X] Oil	[ ] Tank Bottoms	
[X] 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	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.

Wellhead cut and cap operations were completed at the Anderson, Adolph Unit 2 Wellhead on July 12, 2024. Groundwater was not encountered during wellhead cut and cap activities. Visual inspection and field screening of soil around the wellhead and associated pumping equipment were conducted following cut and cap operations, and a soil sample (B01@5') was submitted for analysis of full list Table 915-1 constituents to determine if a release occurred. The flowline associated with the wellhead was removed between July 12 and July 22, 2024. Soil samples were collected from the locations where the flowline risers were disconnected from the wellhead (WH01-RISER@2.5') and from the separator (SEP01-RISER@3'), from where there was potential impact (FL01@4' and FL03@4'), and from where the flowline changed direction (FL02@4'). The samples were submitted for analysis of full list Table 915-1 constituents to determine if a release occurred. Laboratory analytical results indicated that 1,2,4-trimethylbenzene and 1,3,5-trimethylbenzene (TMBs) and polycyclic aromatic hydrocarbon (PAH) impacts exceeding the ECMC Table 915-1 allowable levels were present at the FL01, FL02, and FL03 locations. As such, Form 19 Initial/Supplemental Spill/Release Reports (Document Nos. 403864111 and 403866069) were submitted on July 25 and July 26, 2024 and the ECMC issued Spill/Release Point IDs 487490 and 487494. The wellhead excavation and flowline are depicted on Figures 1 and 2. The PID readings and soil sample results are summarized in Tables 1 and 2, respectively. The Form 44 is attached.

Excavation activities are ongoing and details will be provided in a subsequent Form 27 supplemental report.

PROPOSED SAMPLING PLAN

Proposed Soil Sampling

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

Between September 11 and November 20, 2024, excavation activities were conducted to address remaining soil impacts at the FL01 and FL03 locations and 18 confirmation samples were collected from the base and sidewalls of the final excavation extents at depths of approximately 5 and 6 ft below ground surface (bgs) and 3 ft bgs, respectively. The confirmation soil samples were submitted for laboratory analysis of the excavation specific waste profile, including benzene, toluene, ethylbenzene, total xylenes (BTEX), TMBs, PAHs, total petroleum hydrocarbons (TPHs), and/or select Table 915-1 metals using ECMC-approved methods. Analytical results indicated that all samples at the final FL01 and FL03 excavation extents were within the ECMC Table 915-1 allowable levels and background levels x1.25 for Table 915-1 metals. Excavation activities are ongoing at the FL02 location. 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 and flowline removal 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 July 12 and July 22, 2024, visual inspection and field screening of soil were conducted at four sidewall locations within the cut and cap excavation area, four locations at the ground surface adjacent to the excavation, and two flowline potholes. 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.

On July 25, 2024, a soil gas survey was conducted at five soil vapor points installed adjacent to the former wellhead location following cut and cap operations. GEM 5000 field readings were all non-detect for methane at all soil vapor points. The soil vapor point locations are illustrated on Figure 1. The soil vapor field form is included as an attachment.

SITE INVESTIGATION REPORT

SAMPLE SUMMARY

Soil

Number of soil samples collected: 29

Number of soil samples exceeeding 915-1: 22

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

Approximate areal extent (square feet): 177

NA / ND

-- Highest concentration of TPH (mg/kg): 3.86

-- Highest concentration of SAR: 0.423

BTEX > 915-1: No

Vertical Extent > 915-1 (in feet): 6

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?

[X] Were background samples collected as part of this site investigation?

Twelve background soil samples were collected from native material outside of the wellhead excavation area. Twenty background soil samples were also collected as part of the HSR-Longmont 3-22A wellhead decommissioning activities (Rem No. 35190) and the Wheeler 1-21A wellhead decommissioning activities (Rem No. 35206), located 1360 ft northeast and 1840 ft northwest, respectively, from similar depths, and NRCS soil types (sand). 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 EC, SAR, pH, arsenic, barium, cadmium, hexavalent chromium, 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 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):

[X] 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 FL01, FL02, and FL03 excavations will be removed and transported to a licensed disposal facility. Final disposal information will be provided upon completion of assessment activities. Disposal records are 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 PAH impacts exceeding the ECMC Table 915-1 allowable level remain in the FL02 excavation area. Groundwater was not encountered during wellhead cut and cap and flowline removal activities. Excavation activities are ongoing and details will be provided in a subsequent Form 27 supplemental report.

Soil Remediation Summary

☐ **In Situ**

_____ Bioremediation (or enhanced bioremediation)

_____ Chemical oxidation

_____ Air sparge / Soil vapor extraction

_____ Natural Attenuation

_____ Other _____

☐ **Ex Situ**

_____ Excavate and offsite disposal

If Yes: Estimated Volume (Cubic Yards) _____

Name of Licensed Disposal Facility or ECMC Facility ID # _____

_____ Excavate and onsite remediation

_____ 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:

[X] 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: $ 11500

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 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. 07/25/2024

Actual Spill or Release date, or date of discovery. 07/25/2024

SITE INVESTIGATION DATES

Date of Initial Actions described in Site Investigation Plan (start date). 07/12/2024

Proposed site investigation commencement. 07/12/2024

Proposed completion of site investigation. 07/21/2025

REMEDIAL ACTION DATES

Proposed start date of Remediation. 07/12/2024

Proposed date of completion of Remediation. 07/21/2025

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

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: 01/23/2025 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: Kari Brown Date: 03/06/2025

Remediation Project Number: 35188

COA Type	Description
0 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
404044372	INVESTIGATION/REMEDIATION WORKPLAN (SUPPLEMENTAL)
404044389	PHOTO DOCUMENTATION
404044395	ANALYTICAL RESULTS
404045616	SOIL SAMPLE LOCATION MAP
404045618	SOIL SAMPLE LOCATION MAP
404048825	SOIL SAMPLE LOCATION MAP
404057988	CORRESPONDENCE
404057990	OTHER
404057994	ANALYTICAL RESULTS
404057996	ANALYTICAL RESULTS
404057997	ANALYTICAL RESULTS
404058000	ANALYTICAL RESULTS
404117975	FORM 27-SUPPLEMENTAL-SUBMITTED

Total Attach: 13 Files

General Comments

User Group	Comment	Comment Date
		Stamp Upon Approval

Total: 0 comment(s)