

State of Colorado
Energy & Carbon Management Commission1120 Lincoln Street, Suite 801, Denver, Colorado 80203
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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
Address: P O BOX 173779		Phone: (713) 350-4906
City: DENVER	State: CO	Zip: 80217-3779
Contact Person: Ariana Ochoa	Email: DJRemediation_Forms@oxy.com	Mobile: ()

PROJECT, PURPOSE & SITE INFORMATION

PROJECT INFORMATION

Remediation Project #: 31038 Initial Form 27 Document #: 403461113

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: WELL	Facility ID: _____	API #: 123-21842	County Name: WELD
Facility Name: MCPEEK 3-18	Latitude: 40.143730	Longitude: -104.822990	
** correct Lat/Long if needed: Latitude: _____		Longitude: _____	
QtrQtr: NENW	Sec: 18	Twp: 2N	Range: 66W
Meridian: 6	Sensitive Area? Yes		

Facility Type: SPILL OR RELEASE	Facility ID: 485290	API #: _____	County Name: WELD
Facility Name: McPeek 3-18 Flowline	Latitude: 40.143349	Longitude: -104.818661	
** correct Lat/Long if needed: Latitude: _____		Longitude: _____	
QtrQtr: NENW	Sec: 18	Twp: 2N	Range: 66W
Meridian: 6	Sensitive Area? Yes		

SITE CONDITIONS

General soil type - USCS Classifications SP

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

Irrigation Ditch 210 feet (ft) south. Water well 220 ft southeast.

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.

Wellhead cut and cap operations were completed at the McPeck 3-18 wellhead on September 20, 2023. Visual inspection and field screening of soils around the wellhead and associated pumping equipment was conducted following cut and cap operations, and a soil sample (B01@6') was submitted for analysis of full 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), Table 915-1 polycyclic aromatic hydrocarbons (PAHs), pH, electrical conductivity (EC), sodium adsorption ratio (SAR), boron, and Table 915-1 metals to determine if a release occurred. Initial results indicated that pH exceeding the ECMC Table 915-1 allowable level and background was present at the former wellhead location. The location was resampled for pH and the results were within range of site-specific background levels. The flowline associated with the wellhead was removed between September 20 and September 28, 2023. Samples were collected from the location where the flowline riser was disconnected from the wellhead (WH01-RISER@5'), from where groundwater was present (FL01@2', FL02@2', FL03@2', FL04@2', FL05@2', FL06@2', and FL09@4') and from the locations the flowline crossed the irrigation ditch (FL07@2' and FL08@3'). Samples were submitted for full list Table 915-1 constituents to determine if a release occurred. Analytical results indicated that TPH, BTEX, TMBs, PAH, arsenic, barium, cadmium, lead, and/or selenium impacts exceeding Table 915-1 allowable levels and background levels were present at the FL01, FL02, FL04, FL05, FL08, and FL09 locations. As such, a Form 19 Initial/Supplemental Spill/Release Report (Document No. 403562655) was submitted on October 20, 2023 and the ECMC issued Spill/Release Point ID 485290.

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):

From September 20 to September 28, 2023, samples were collected from the base of the cut and cap excavation (B01@6'), from the location where the flowline riser was disconnected from the wellhead (WH01-RISER@5'), from where groundwater was present (FL01@2', FL02@2', FL03@2', FL04@2', FL05@2', FL06@2', and FL09@4') and from the locations the flowline crossed the irrigation ditch (FL07@2' and FL08@3'). Samples were submitted for full list Table 915-1 constituents. Analytical results indicated that TPH, BTEX, TMBs, PAH, arsenic, barium, cadmium, lead, and/or selenium impacts exceeding Table 915-1 allowable levels and background levels were present at the FL01, FL02, FL04, FL05, FL08, and FL09 locations. Excavation activities are ongoing. The wellhead excavation and flowline are depicted on Figures 1 and 2. The PID readings and soil sample results are summarized in Table 1 and Table 2, respectively, and the laboratory reports are attached.

Proposed Groundwater Sampling

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

Between September 20 and September 28, 2023, eight groundwater samples were collected from the wellhead excavation (GW01) and from flowline potholes (FL-GW01 through FL-GW07). Groundwater samples were submitted for analysis of full list Table 915-1 constituents. Four background groundwater samples (BG-GW01 through BG-GW04) were also collected for Table 915-1 inorganic constituents. Based on the laboratory analytical results, samples FL-GW01 through FL-GW06 exceeded the ECMC Table 915-1 allowable levels and/or background levels for benzene, total dissolved solids (TDS), chloride ion, and/or sulfate ion. The excavation groundwater sample and background sample locations are depicted on Figure 1. The flowline pothole groundwater sample locations are depicted on Figure 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):

Between September 20 and September 28, 2023, visual inspection and field screening of soils were conducted at four sidewall locations within the cut and cap excavation area, four locations at the ground surface adjacent to the excavation, and 22 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.

Following cut and cap operations, a soil gas survey was conducted. Five soil vapor points were installed adjacent to the former wellhead location. 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 11

Number of soil samples exceeding 915-1 11

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

Approximate areal extent (square feet) 600

NA / ND

-- Highest concentration of TPH (mg/kg) 1912

-- Highest concentration of SAR 6.21

BTEX > 915-1 Yes

Vertical Extent > 915-1 (in feet) 4

Groundwater

Number of groundwater samples collected 8

Was extent of groundwater contaminated delineated? No

Depth to groundwater (below ground surface, in feet) 3

Number of groundwater monitoring wells installed 0

Number of groundwater samples exceeding 915-1 5

-- Highest concentration of Benzene (µg/l) 5.95

-- Highest concentration of Toluene (µg/l) 7.52

-- Highest concentration of Ethylbenzene (µg/l) 13.6

-- Highest concentration of Xylene (µg/l) 102

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?

Eight background soil samples (Native-BG01@3' through Native-BG04@3' and Native-BG01@6' through Native-BG04@6') were collected from native material adjacent to the wellhead cut and cap excavation. The background soil samples were submitted for laboratory analysis of pH, EC, SAR, boron, and metals using ECMC-approved methods. Laboratory analytical results indicate that EC, SAR, pH, arsenic, and barium 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 Figure 1.

☐ 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 will be summarized in a subsequent Form 27 Supplemental report. Groundwater monitoring wells will be installed to delineate the dissolved-phase plume once excavation activities are complete.

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 excavations 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 impacts exceeding the ECMC Table 915-1 allowable level and background levels for TPH, BTEX, TMBs, PAHs, arsenic, barium, cadmium, lead, and/or selenium are present in the wellhead cut and cap excavation area and several flowline potholes. Excavation activities are ongoing. Groundwater was encountered in the wellhead excavation and several flowline potholes at approximately 3-5 ft bgs. Eight groundwater samples were collected from the wellhead excavation (GW01) and from flowline potholes (FL-GW01 through FL-GW07) and were submitted for laboratory analysis. Laboratory analytical results for samples FL-GW01 through FL-GW06 exceeded the ECMC Table 915-1 allowable levels and/or background levels for benzene, TDS, chloride ion, and/or sulfate ion. Confirmation soil sample results will be summarized in a subsequent Form 27 Supplemental report.

Soil Remediation Summary

☐

In Situ

☐

Ex Situ

_____ Bioremediation (or enhanced bioremediation)

_____ Chemical oxidation

_____ Air sparge / Soil vapor extraction

_____ Natural Attenuation

_____ Other _____

_____ Excavate and offsite disposal

_____ If Yes: Estimated Volume (Cubic Yards) _____

_____ Name of Licensed Disposal Facility or COGCC 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.

Groundwater monitoring wells will be installed to delineate the dissolved-phase plume once excavation activities are complete.

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: \$ 18500

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. 10/17/2023

Actual Spill or Release date, or date of discovery. 10/17/2023

SITE INVESTIGATION DATES

Date of Initial Actions described in Site Investigation Plan (start date). 09/20/2023

Proposed site investigation commencement. 09/20/2023

Proposed completion of site investigation. _____

REMEDIAL ACTION DATES

Proposed start date of Remediation. 09/25/2023

Proposed date of completion of Remediation. _____

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

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I hereby certify all statements made in this form are to the best of my knowledge true, correct, and complete.

Signed: Ariana Ochoa

Title: Sr. HSE Advisor

Submit Date: _____

Email: DJRemediation_Forms@oxy.com

Based on the information provided herein, this Application for Site Investigation and Remediation Workplan complies with ECOMC Rules and applicable orders and is hereby approved.

ECMC Approved: _____

Date: _____

Remediation Project Number: 31038

COA Type**Description**

0 COA	

Attachment Check 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**

403580685	CORRESPONDENCE
403580688	ANALYTICAL RESULTS
403580694	PHOTO DOCUMENTATION
403580697	OTHER
403580704	SOIL SAMPLE LOCATION MAP
403580705	SOIL SAMPLE LOCATION MAP

Total Attach: 6 Files

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

		Stamp Upon Approval
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Total: 0 comment(s)