

State of Colorado  
Energy & Carbon Management Commission

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Document Number:  
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Receive Date:  
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Report taken by:  
\_\_\_\_\_

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 COGCC 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: (970) 515-1698  
City: DENVER State: CO Zip: 80217-3779 Mobile: ( )  
Contact Person: Gregory Hamilton Email: Gregory\_Hamilton@oxy.com

PROJECT, PURPOSE & SITE INFORMATION

PROJECT INFORMATION

Remediation Project #: 27571 Initial Form 27 Document #: 403299781

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

No Multiple Facilities

Facility Type: WELL Facility ID: API #: 123-22605 County Name: WELD  
Facility Name: SHUTT 20-34 Latitude: 40.265330 Longitude: -104.758710  
\*\* correct Lat/Long if needed: Latitude: Longitude:  
QtrQtr: NWSE Sec: 34 Twp: 4N Range: 66W Meridian: 6 Sensitive Area? Yes

SITE CONDITIONS

General soil type - USCS Classifications SC 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

Agriculture

SITE INVESTIGATION PLAN

TYPE OF WASTE:

- X 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

Table with 4 columns: Impacted?, Impacted Media, Extent of Impact, How Determined. Rows include UNDETERMINED GROUNDWATER and SOILS.

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 Shutt 20-34 wellhead on April 18, 2023. Groundwater was encountered in the wellhead cut and cap excavation. Visual inspection and field screening of soils around the wellhead and associated pumping equipment was conducted following cut and cap operations...

Flowline removal activities are pending and will be summarized 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 ):

On May 8, 2023, excavation activities were conducted to address soil impacts at the former wellhead location and six confirmation soil samples were collected from the base and sidewalls of the excavation extent at approximately 7 feet below ground surface (ft bgs) and 5 ft bgs, respectively.

Proposed Groundwater Sampling

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

Groundwater was encountered in the wellhead cut and cap excavation and one groundwater sample (WH-GW01) was submitted for laboratory analysis of Table 915-1 constituents. One background groundwater sample (BG-GW01) was submitted for laboratory analysis of Table 915-1 inorganic constituents.

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 April 18, 2023, visual inspection and/or field screening of soils were conducted at four sidewall locations within the cut and cap excavation area and four locations at the ground surface adjacent to the excavation. 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 COGCC Operator Guidance. A photographic log is attached.

On April 24, 2023, a soil gas survey was conducted at 5 soil vapor points (SVPs) installed adjacent to the former wellhead location following cut and cap operations. Trace methane was detected by the GEM 5000 gas meter at SVP02. Soil gas samples were submitted to Isotech Laboratories for gas composition and isotopic analysis. Analytical results indicated that no thermogenic gas (C2-C5) was present. The SVP locations are illustrated on Figure 1. The lab report is included as an attachment.

**SITE INVESTIGATION REPORT**

**SAMPLE SUMMARY**

<b>Soil</b>	<b>NA / ND</b>
Number of soil samples collected <u>8</u>	-- Highest concentration of TPH (mg/kg) <u>24.2</u>
Number of soil samples exceeding 915-1 <u>8</u>	-- Highest concentration of SAR <u>4.34</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>1891</u>	Vertical Extent > 915-1 (in feet) <u>7</u>

**Groundwater**

Number of groundwater samples collected <u>1</u>	ND Highest concentration of Benzene (µg/l) <u>          </u>
Was extent of groundwater contaminated delineated? <u>No</u>	ND Highest concentration of Toluene (µg/l) <u>          </u>
Depth to groundwater (below ground surface, in feet) <u>5</u>	-- Highest concentration of Ethylbenzene (µg/l) <u>2.27</u>
Number of groundwater monitoring wells installed <u>0</u>	-- Highest concentration of Xylene (µg/l) <u>3.18</u>
Number of groundwater samples exceeding 915-1 <u>0</u>	NA Highest concentration of Methane (mg/l) <u>          </u>

**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?

Empty text box for impacts to adjacent property or offsite impacts identified.

Were background samples collected as part of this site investigation?

Six background soil samples (Native-BG01@3' through Native-BG03@3' and Native-BG01@6' through Native-BG03@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 COGCC-approved methods. Laboratory analytical results indicate that SAR, pH, and arsenic are naturally high in the native soil. Analytical results from the background soil samples are presented in Table 2.

One background groundwater sample (BG-GW01) was submitted for laboratory analysis of Table 915-1 inorganic constituents. The groundwater sample analytical results are summarized in Table 3.

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?

Flowline removal activities are pending and will be summarized 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 wellhead cut and cap excavation was removed and transported to a licensed disposal facility. Final disposal information will be provided upon completion of the partial flowline removal. Disposal records will be kept on file and available upon request. The wellhead cut and cap excavation area has been 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 impacted soils in the excavation area have been remediated to be in compliance with the COGCC Table 915-1 standards and/or within the range of site-specific background levels. Groundwater was encountered in the wellhead excavation area and one sample was submitted for laboratory analysis of Table 915-1 constituents. Analytical results indicate groundwater is in compliance with Table 915-1 standards and/or within range of site-specific background levels. The flowline removal is pending and will be summarized in a subsequent Form 27 Supplemental report within 90 days following the completion of flowline removal activities.

## 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 COGCC 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.

# 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 Colorado Oil and Gas Conservation 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: \$ 14500 \_\_\_\_\_

## 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 \_\_\_\_\_

COGCC Disposal Facility ID #, if applicable: \_\_\_\_\_

Non-COGCC Disposal Facility: \_\_\_\_\_

Volume of E&P Waste (liquid) in barrels \_\_\_\_\_

E&P waste (liquid) description \_\_\_\_\_

COGCC Disposal Facility ID #, if applicable: \_\_\_\_\_

Non-COGCC 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 COGCC 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 COGCC 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. 04/21/2023

Actual Spill or Release date, or date of discovery. 04/21/2023

### SITE INVESTIGATION DATES

Date of Initial Actions described in Site Investigation Plan (start date). 04/18/2023

Proposed site investigation commencement. 04/18/2023

Proposed completion of site investigation. \_\_\_\_\_

### REMEDIAL ACTION DATES

Proposed start date of Remediation. 04/18/2023

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: Gregory Hamilton

Title: Environmental Lead

Submit Date: \_\_\_\_\_

Email: Gregory\_Hamilton@oxy.com

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

COGCC Approved: \_\_\_\_\_

Date: \_\_\_\_\_

Remediation Project Number: 27571

**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**

403389789	CORRESPONDENCE
403455159	ANALYTICAL RESULTS
403455160	PHOTO DOCUMENTATION
403455161	ANALYTICAL RESULTS
403455164	SOIL SAMPLE LOCATION MAP

Total Attach: 5 Files

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

		Stamp Upon Approval
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Total: 0 comment(s)