

State of Colorado  
Energy & Carbon Management Commission1120 Lincoln Street, Suite 801, Denver, Colorado 80203  
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Report taken by:

Alexander Ahmadian

## 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: (720) 929-4306
City: DENVER	State: CO	Zip: 80217-3779
Contact Person: Erik Mickelson	Email: Erik_Mickelson@oxy.com	Mobile: ( )

## PROJECT, PURPOSE &amp; SITE INFORMATION

## PROJECT INFORMATION

Remediation Project #: 22828 Initial Form 27 Document #: 403020116

## 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 #: 123-15099	County Name: WELD
Facility Name: HSR-SMOLOWE 9-1A	Latitude: 40.252880	Longitude: -104.717620	
** correct Lat/Long if needed: Latitude: _____		Longitude: _____	
QtrQtr: NESE	Sec: 1	Twp: 3N	Range: 66W Meridian: 6 Sensitive Area? Yes

Facility Type: SPILL OR RELEASE	Facility ID: 482296	API #: _____	County Name: WELD
Facility Name: HSR-Smolowe 9-1A	Latitude: 40.252880	Longitude: -104.717620	
** correct Lat/Long if needed: Latitude: _____		Longitude: _____	
QtrQtr: NESE	Sec: 1	Twp: 3N	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? No

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

Retention pond located approximately 600 feet (ft) to the north; Occupied buildings located approximately 1,000 ft to the northeast; Agriculture surrounding.

## 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) Thermogenic Gas

### DESCRIPTION OF IMPACT

Impacted?	Impacted Media	Extent of Impact	How Determined
Yes	SOILS	See attached data.	Soil Vapor Samples/Lab 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 HSR-Smolowe 9-1A wellhead on May 11, 2022. Groundwater was not encountered in the wellhead cut and cap excavation. 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@6'-WP) was submitted for laboratory analysis of reduced list Table 915-1 constituents, as approved in the Form 27 Initial dated April 19, 2022 (Document No. 403020116), to determine if a release occurred. The flowline associated with the wellhead was removed on November 22, 2022. Soil samples were not required during flowline removal as no field indication of impact or hard bends most likely to have been affected by the operational life of the flowline were encountered during removal activities. 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 2. The Form 44 is attached.

During plugging and abandonment activities at the HSR-Smolowe 9-1A wellhead, five shallow soil vapor points (SVPs) were installed in the vicinity of the wellhead. On May 18, 2022, methane was detected with field screening equipment at SVP04 and SVP05. WSP collected samples from all five SVPs using IsoTubes™ an IsoTube™ sampling manifold in conjunction with the pump on a Landtec GEM™5000 (GEM). The samples were submitted to IsoTech Laboratories (IsoTech) for gas composition analysis. Results from the gas composition analysis were received from IsoTech on June 1, 2022 and indicated the presence of a trace concentration of thermogenic gas. The release was reported to the ECMC in the Form 19 Initial dated June 2, 2022 (Document No. 403065544). The volume of the release is unknown. The original soil vapor points were destroyed. New soil vapor points were installed in fourth quarter of 2022 to continue the assessment. The soil vapor points are depicted on Figure 1.

### 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 May 11, 2022, a soil sample was collected from the base of the cut and cap excavation (B01@6'-WP). The sample was submitted for laboratory analysis of reduced list Table 915-1 constituents using ECMC-approved methods, as approved in the Form 27 Initial dated April 19, 2022 (Document No. 403020116). Results indicated that soil was in compliance with ECMC Table 915-1 standards. The wellhead excavation and flowline are depicted on Figures 1 and 2, respectively. The PID readings and soil sample results are summarized in Tables 1 and 2, respectively. The laboratory report is 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 or 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 ):

The separator inlet sample was collected as part of the Smolowe/Phipps9&10-1 O SA Facility decommissioning activities (Remediation No. 22930). Both proposed flowline sampling locations were excavated as part of the facility project.

On May 11, 2022, visual inspection and/or 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 12 pothole locations during flowline removal. Based on the inspection and screening results, hydrocarbon-impacted soil was not observed at the screening locations.

On November 1, 2023, Ensolum, LLC. (Ensolum) visited the site to screen and sample the SVPs using IsoTubes™ and an IsoTube™ sampling manifold in conjunction with the pump on a GEM. Samples collected from SVP06 through SVP35 were submitted to Isotech for gas composition and isotopic analysis. During the field screening event, methane was not detected by the GEM in any of the SVPs.

## **SITE INVESTIGATION REPORT**

### **SAMPLE SUMMARY**

#### **Soil**

Number of soil samples collected 1

Number of soil samples exceeding 915-1 0

Was the areal and vertical extent of soil contamination delineated? Yes

Approximate areal extent (square feet) 0

#### **NA / ND**

ND Highest concentration of TPH (mg/kg)           

-- Highest concentration of SAR 1.55

BTEX > 915-1 No

Vertical Extent > 915-1 (in feet) 0

#### **Groundwater**

Number of groundwater samples collected 0

Was extent of groundwater contaminated delineated? Yes

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?

☐ Were background samples collected as part of this site investigation?

☐ 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?

## **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.

Laboratory analytical results indicate that reduced list Table 915-1 constituent concentrations in the soil sample collected from the base of the cut and cap excavation (B01@6'-WP) were in compliance with the ECMC Table 915-1 standards; therefore, no soils were removed from the site during wellhead cut and cap or flowline removal operations. The excavation area was backfilled and contoured to match pre-existing site conditions.

On November 1, 2023, Ensolum visited the site to screen and sample the SVPs using IsoTubes™ and an IsoTube™ sampling manifold in conjunction with the pump on a Landtec GEM. Samples collected from SVP06 through SVP35 were submitted to Isotech for gas composition and isotopic analysis. During the field screening event, methane was not detected by the GEM in any of the SVPs.

## **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 reduced list Table 915-1 constituent concentrations in the soil sample collected from the base of the cut and cap excavation (B01@6'-WP) were in compliance with the ECMC Table 915-1 standards. Groundwater was not encountered in the cut and cap excavation or flowline potholes.

Analytical results from the November 2023 soil vapor sampling event were received on December 6 and December 20, 2023. Trace methane (0.0023%) was detected in one of the samples (SVP08) versus 17 detections ranging from 0.0002% to 0.0007% during the July 2023 sampling event. Thermogenic gases (C2-C5) were not detected in any of the samples.

The November 2023 tabulated field data and laboratory analytical results are included as Tables 1A and 2A, respectively. Historical field data and laboratory analytical results are included as Tables 1B and 2B, respectively. The laboratory report from the July 2023 sampling event is attached.

Trace thermogenic gases (C2-C5) have not been detected in any samples collected at the site for the previous three consecutive sampling events that were conducted on April 18, July 1, and November 1, 2023. As such, Kerr-McGee is requesting a No Further Action (NFA) determination for this location.

## **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 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.

## REMEDATION 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 NFA Status Request

### 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: \$ 0

### WASTE DISPOSAL INFORMATION

Was E&P waste generated as part of this remediation? No

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:

## REMEDATION COMPLETION REPORT

### REMEDATION COMPLETION SUMMARY

Is this a Final Closure Request for this Remediation Project? Yes

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? No

Does Groundwater meet Table 915-1 standards? Yes

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 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. 03/02/2024

Proposed date of completion of Reclamation. 04/02/2024

## 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. 06/02/2022

Actual Spill or Release date, or date of discovery. 06/02/2022

### SITE INVESTIGATION DATES

Date of Initial Actions described in Site Investigation Plan (start date). 05/11/2022

Proposed site investigation commencement. 05/11/2022

Proposed completion of site investigation. 07/01/2023

### REMEDIAL ACTION DATES

Proposed start date of Remediation. 07/02/2023

Proposed date of completion of Remediation. 12/20/2023

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 analytical and soil screening data provided herein, Kerr-McGee is requesting an NFA determination for this location.

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: 01/30/2024

Email: Erik\_Mickelson@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: Alexander Ahmadian

Date: 02/23/2024

Remediation Project Number: 22828

**COA Type****Description**

	<p>Based on the information presented, it appears that no further remedial action is necessary at this time and the ECMC approves the closure request. However, should future conditions at the site indicate contaminant concentrations in soils exceeding ECMC standards or if groundwater is found to be impacted, then further investigation and/or remediation activities may be required.</p> <p>This no further action determination is limited to environmental remediation. Operator is required to comply with ECMC 1100 Series Rules for Flowline Regulations for all Flowline Abandonment activities and ECMC 400 Series Rules for Wellhead Plugging and Abandonment.</p> <p>The surface area disturbed by the remediation activity shall be reclaimed in accordance with the 1000 Series Reclamation Rules. For locations with active ongoing oil and gas operations, comply with Rule 1003 interim reclamation requirements and for locations that will no longer have active oil and gas operations, comply with Rule 1004 Final Reclamation requirements.</p>
1 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**

403669638	INVESTIGATION/REMEDATION WORKPLAN (SUPPLEMENTAL)
403669651	CORRESPONDENCE
403669652	ANALYTICAL RESULTS
403669653	PHOTO DOCUMENTATION
403669654	ANALYTICAL RESULTS
403669657	SOIL SAMPLE LOCATION MAP
403669658	SITE MAP
403669659	SOIL SAMPLE LOCATION MAP
403697049	FORM 27-SUPPLEMENTAL-SUBMITTED

Total Attach: 9 Files

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

		Stamp Upon Approval
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Total: 0 comment(s)