

# State of Colorado Oil and Gas Conservation Commission

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



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Report taken by:

Candice (Nikki) Graber

## 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: <u>KERR MCGEE OIL &amp; GAS ONSHORE LP</u>	Operator No: <u>47120</u>	<b>Phone Numbers</b>
Address: <u>P O BOX 173779</u>		Phone: <u>(720) 929-4306</u>
City: <u>DENVER</u>	State: <u>CO</u>	Zip: <u>80217-3779</u>
Contact Person: <u>Erik Mickelson</u>	Email: <u>Erik_Mickelson@oxy.com</u>	Mobile: <u>( )</u>

### PROJECT, PURPOSE & SITE INFORMATION

#### PROJECT INFORMATION

Remediation Project #: 20294 Initial Form 27 Document #: 402825372

#### 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: <u>WELL</u>	Facility ID: _____	API #: <u>123-22560</u>	County Name: <u>WELD</u>
Facility Name: <u>GUNZNER 19-13</u>		Latitude: <u>40.221180</u>	Longitude: <u>-104.844080</u>
** correct Lat/Long if needed: Latitude: _____		Longitude: _____	
QtrQtr: <u>SESW</u>	Sec: <u>13</u>	Twp: <u>3N</u>	Range: <u>67W</u>
Meridian: <u>6</u>		Sensitive Area? <u>Yes</u>	

#### SITE CONDITIONS

General soil type - USCS Classifications GM Most Sensitive Adjacent Land Use Agriculture and 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

## 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
No	GROUNDWATER	NA	Groundwater Samples/Laboratory Analytical Results
Yes	SOILS	See attached data.	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.

This form has been prepared to summarize assessment activities conducted during the re-entry cut and cap of the Gunzner 19-13 wellhead. Initial assessment activities were conducted between January 10 and January 19, 2022. Re-entry assessment activities were conducted between September 9 and November 30, 2022.

On May 27, 2022, gas bubbles were observed rising through shallow groundwater. Samples were collected and submitted for gas composition analysis on April 7, 2022. Sample results received on May 27, 2022 indicated the presence of thermogenic gas. The release was reported to the COGCC in a Form 19 Initial dated May 30, 2022 (Document No. 403062189; Spill/Release ID 482295).

On September 14, 2022, upon receipt of the laboratory analytical report for samples collected on September 9, 2022, historically impacted soil was discovered at the wellhead during re-entry cut and cap operations. Laboratory analytical results indicated the wellhead excavation soil sample B01 @5'-WP exceeded the COGCC Table 915-1 allowable levels for total petroleum hydrocarbons (TPH), arsenic, barium, cadmium, copper, lead, and silver. The release was reported to the COGCC in the Form 19 Initial dated September 15, 2022 (Document No. 403166667). The volume of the release is unknown. The impacted soil was excavated.

### 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 January 10 to November 30, 2022, soil samples were collected from the wellhead excavation, flowline potholes, and separator riser. The samples were field screened for total volatile organic compounds using a photoionization detector (PID). Based on PID readings, select soil samples were submitted for laboratory analysis. The impacted soil discovered during re-entry activities was excavated. Analytical results following excavation indicated soil was in full compliance with Table 915-1 standards or within the analytical variability of the background samples at the extents of the excavation. Therefore, further excavation was not warranted. The wellhead excavation on Figures 1a and 1b and flowline is depicted on Figure 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 ):

On January 10, 2022, one groundwater sample was collected from the wellhead excavations for Table 915-1 analyses. Analytical results indicated groundwater was in full compliance with COGCC Table 915-1 allowable levels. The excavation groundwater sample location is depicted on Figure 1. 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 ):

During the wellhead re-entry cut and cap operations, impacted soil was stockpiled on the ground surface to the northeast of the wellhead excavation. From September 29 through November 30, 2022, soil samples were collected from the former stockpile location and submitted for laboratory analysis. The impacted soil was excavated. Analytical results following excavation indicated soil was in full compliance with Table 915-1 standards or below background. Therefore, further excavation was not warranted.

The soil gas investigation is ongoing. Three soil vapor points (SVPs) were installed near the former wellhead following re-entry cut and cap operations (Figure 1). Trace methane was detected by the GEM at SVP02. Samples were not submitted for lab analysis as additional SVPs will be installed, screened, and sampled following the backfilling of the wellhead excavation. Please refer to the Form 27 supplemental report dated June 16, 2022 (Document No. 402995755) for more details.

## SITE INVESTIGATION REPORT

### SAMPLE SUMMARY

#### Soil

Number of soil samples collected 2

Number of soil samples exceeding 915-1 1

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

Approximate areal extent (square feet) 0

#### Groundwater

Number of groundwater samples collected 1

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

#### Surface Water

0 Number of surface water samples collected

0 Number of surface water samples exceeding 915-1

If surface water is impacted, other agency notification may be required.

#### NA / ND

ND Highest concentration of TPH (mg/kg)           

-- Highest concentration of SAR 3.86

BTEX > 915-1 No

Vertical Extent > 915-1 (in feet) 0

-- Highest concentration of Benzene (µg/l) 1.24

-- Highest concentration of Toluene (µg/l) 3.68

-- Highest concentration of Ethylbenzene (µg/l) 1.1

-- Highest concentration of Xylene (µg/l) 8.16

NA Highest concentration of Methane (mg/l)           

### OTHER INVESTIGATION INFORMATION

☐ Were impacts to adjacent property or offsite impacts identified?

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

Eleven background soil samples were collected for laboratory analysis of pH, specific conductivity (EC), sodium adsorption ration (SAR), boron, and metals. Laboratory analytical results indicated that levels of arsenic, lead, and selenium are naturally high in the soil.

☐ 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?

The soil gas investigation is ongoing. Following the backfilling of the wellhead excavation, additional soil vapor points will be installed adjacent to the former wellhead location. Please refer to the Form 27 supplemental report dated June 16, 2022 (Document No. 402995755) for more details.

## 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.

Approximately 1,245 bbls of non-impacted water were removed from the site and transported to the Aggregate Recycle Facility in Weld County, Colorado for recycling. Approximately 300 cubic yards of impacted soil were removed from the site and transported to the Kerr-McGee Land Treatment Facility in Weld County, Colorado for recycling. Disposal records are kept on file and are available upon request.

The soil gas investigation is ongoing. Following the backfilling of the wellhead excavation, additional soil vapor points will be installed adjacent to the former wellhead location. Please refer to the Form 27 supplemental report dated June 16, 2022 (Document No. 402995755) for more details.

## 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.

The soil gas investigation is ongoing. Following the backfilling of the wellhead excavation, additional soil vapor points will be installed adjacent to the former wellhead location. Please refer to the Form 27 supplemental report dated June 16, 2022 (Document No. 402995755) for more details.

### Soil Remediation Summary

☐ In Situ

☒ Ex Situ

\_\_\_\_\_ Bioremediation ( or enhanced bioremediation )

Yes \_\_\_\_\_ Excavate and offsite disposal

\_\_\_\_\_ Chemical oxidation

If Yes: Estimated Volume (Cubic Yards) \_\_\_\_\_ 300

\_\_\_\_\_ Air sparge / Soil vapor extraction

Name of Licensed Disposal Facility or COGCC Facility ID # \_\_\_\_\_ 149007

\_\_\_\_\_ 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.

## 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 Wellhead re-entry and soil gas investigation 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 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: \$ 15000

### 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 1,245 bbls of non-impacted water were removed from the site and transported to the Aggregate Recycle Facility in Weld County, Colorado for recycling. Approximately 300 cubic yards of impacted soil were removed from the site and transported to the Kerr-McGee Land Treatment Facility in Weld County, Colorado for recycling.

Volume of E&P Waste (solid) in cubic yards 300

E&P waste (solid) description Impacted Soil

COGCC Disposal Facility ID #, if applicable: 149007

Non-COGCC Disposal Facility:

Volume of E&P Waste (liquid) in barrels 1245

E&P waste (liquid) description Non-Impacted Water

COGCC Disposal Facility ID #, if applicable: 434766

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? 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 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. 08/11/2021

Actual Spill or Release date, or date of discovery. 05/27/2022

### SITE INVESTIGATION DATES

Date of Initial Actions described in Site Investigation Plan (start date). 01/10/2022

Proposed site investigation commencement. 01/10/2022

Proposed completion of site investigation. 03/31/2023

### REMEDIAL ACTION DATES

Proposed start date of Remediation. 04/01/2023

Proposed date of completion of Remediation. 12/31/2023

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, soil assessment is complete and Kerr-McGee is requesting an NFA determination for the wellhead closure at this location. The soil vapor investigation is ongoing.

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: 12/12/2022

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: Candice (Nikki) Graber

Date: 03/20/2023

Remediation Project Number: 20294

**COA Type****Description**

	Operator will submit a minimum of one soil sample for contaminants of concern from each soil boring advanced during monitoring well installation. Contaminants of concern shall include all organics detected in the waste characterization sample, arsenic, barium, cadmium, copper, lead, and silver.
	Due to the presence of impacted soil in contact with groundwater Operator will install monitoring wells (within the spill/release area, cross-gradient, 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.
	Soil sample Sep-BH01 @0.5 is not within native material and should not be included in background determinations.
3 COAs	

**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**

403248094	FORM 27-SUPPLEMENTAL-SUBMITTED
403250706	PHOTO DOCUMENTATION
403250709	OTHER
403250712	SOIL SAMPLE LOCATION MAP
403253132	ANALYTICAL RESULTS
403253526	SOIL SAMPLE LOCATION MAP
403253528	SOIL SAMPLE LOCATION MAP

Total Attach: 7 Files

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

		Stamp Upon Approval
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Total: 0 comment(s)