

# State of Colorado Oil and Gas Conservation Commission

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Report taken by:

Kari Oakman

## 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.

Refer to Rules 340, 905, 906, 907, 908, 909, and 910

### 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>(970) 336-3500</u>
City: <u>DENVER</u>	State: <u>CO</u>	Zip: <u>80217-3779</u>
Contact Person: <u>Phil Hamlin</u>	Email: <u>Phil_Hamlin@oxy.com</u>	Mobile: <u>( )</u>

### PROJECT, PURPOSE & SITE INFORMATION

#### PROJECT INFORMATION

Remediation Project #: 13292Initial Form 27 Document #: 401984019

#### PURPOSE INFORMATION

- |                                                                                                    |                                                                                                            |
|----------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------|
| <input type="checkbox"/> 901.e. Sensitive Area Determination                                       | <input checked="" type="checkbox"/> 909.c.(5), Rule 910.b.(4): Remediation of impacted ground water        |
| <input type="checkbox"/> 909.c.(1), Rule 905: Pit or PW vessel closure                             | <input type="checkbox"/> Rule 909.e.(2)A.: Notice completion of remediation in accordance with Rule 909.b. |
| <input checked="" type="checkbox"/> 909.c.(2), Rule 906: Spill/Release Remediation                 | <input type="checkbox"/> Rule 909.e.(2)B.: Closure of remediation project                                  |
| <input type="checkbox"/> 909.c.(3), Rule 907.e.: Land treatment of oily waste                      | <input type="checkbox"/> Rule 906.c.: Director request                                                     |
| <input type="checkbox"/> 909.c.(4), Rule 908.g.: Centralized E&P Waste Management Facility closure | <input type="checkbox"/> Other _____                                                                       |

#### SITE INFORMATION

N Multiple Facilities ( in accordance with Rule 909.c. )

Facility Type: <u>SPILL OR RELEASE</u>	Facility ID: <u>461372</u>	API #: _____	County Name: <u>WELD</u>
Facility Name: <u>Huett, Joseph Unit 2</u>		Latitude: <u>40.034481</u>	Longitude: <u>-104.851563</u>
** correct Lat/Long if needed: Latitude: _____		Longitude: _____	
QtrQtr: <u>NESE</u>	Sec: <u>23</u>	Twp: <u>1N</u>	Range: <u>67W</u>
Meridian: <u>6</u>		Sensitive Area? <u>Yes</u>	

#### SITE CONDITIONS

General soil type - USCS Classifications CLMost Sensitive Adjacent Land Use AgricultureIs domestic water well within 1/4 mile? YesIs surface water within 1/4 mile? YesIs groundwater less than 20 feet below ground surface? No

#### Other Potential Receptors within 1/4 mile

Water well located approximately 730 feet (ft) northeast, surface water approximately 1,000 ft northeast, occupied building approximately 690 ft northeast, and groundwater approximately 20 ft below ground surface (bgs).

# 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	See attached data	Groundwater Samples/Lab Analysis
Yes	SOILS	35' N-S x 65' E-W x 32' bgs (max)	Soil Samples/Lab Analysis

## INITIAL ACTION SUMMARY

Description of initial action or emergency response measures take to abate, investigate, and/or remediate impacts associated with E&P Waste.

During plugging and abandonment activities at the Huett, Joseph Unit #2 tank battery facility, historical petroleum hydrocarbon impacts were encountered. The volume of the release is unknown. The petroleum hydrocarbon 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 ):

Between January 15 and February 20, 2019, 26 soil samples were collected from the excavation base and sidewalls and submitted for laboratory analysis of total petroleum hydrocarbons (TPH), benzene, toluene, ethylbenzene, and total xylenes (BTEX), pH, and specific conductivity (EC). Laboratory analytical results indicated that TPH, BTEX, pH, and EC concentrations and levels were in full compliance with Colorado Oil and Gas Conservation Commission (COGCC) Table 910-1 allowable levels at the lateral extent of the excavation.

### Proposed Groundwater Sampling

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

On February 14, 2019, groundwater sample GW01 was collected from the excavation for BTEX analysis. Laboratory analytical results indicated sample GW01 exceeded the COGCC Table 910-1 allowable level for benzene at a concentration of 792 micrograms per liter (µg/L). On February 21, 2019, following the removal of impacted groundwater from the excavation, a second groundwater sample (GW02) was collected. Laboratory analytical results indicated sample GW02 exceeded the COGCC Table 910-1 allowable level for benzene at 208 µg/L. The excavation groundwater sample locations are depicted on Figure 1. The groundwater sample analytical results are summarized in Table 1.

### 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 ):

# SITE INVESTIGATION REPORT

## SAMPLE SUMMARY

### Soil

Number of soil samples collected 26

Number of soil samples exceeding 910-1 9

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

Approximate areal extent (square feet) 1765

### NA / ND

-- Highest concentration of TPH (mg/kg) 1713

NA Highest concentration of SAR

BTEX > 910-1 Yes

Vertical Extent > 910-1 (in feet) 32

### Groundwater

Number of groundwater samples collected 12

Was extent of groundwater contaminated delineated? No

Depth to groundwater (below ground surface, in feet) 20'

Number of groundwater monitoring wells installed 5

Number of groundwater samples exceeding 910-1 8

-- Highest concentration of Benzene (µg/l) 792

-- Highest concentration of Toluene (µg/l) 15.7

-- Highest concentration of Ethylbenzene (µg/l) 33.2

-- Highest concentration of Xylene (µg/l) 75.6

NA Highest concentration of Methane (mg/l)

### Surface Water

0 Number of surface water samples collected

Number of surface water samples exceeding 910-1

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

## OTHER INVESTIGATION INFORMATION

☒ Were impacts to adjacent property or offsite impacts identified?

Petroleum hydrocarbon impacted soil and groundwater were encountered in the agricultural field south of the former tank battery.

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

A background soil sample was submitted to the laboratory and placed on hold for analysis. Laboratory analytical results for excavation soil samples indicated that pH and EC levels were compliant at the extent of the excavation; therefore, the background soil sample was not run for laboratory analysis.

☐ 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?

Additional groundwater monitoring wells will be installed at the site to establish points of compliance.

# 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 2,870 cubic yards of petroleum hydrocarbon impacted soil was transported to the Kerr-McGee Land Treatment Facility in Weld County, Colorado, for recycling. The impacted soil was excavated into the capillary and phreatic zones to address potential hydrocarbon impacts that may have been present below the current groundwater table due to seasonal fluctuations. In order to remove the impacted soil from the excavation base to a total depth of 32 ft below ground surface (bgs), the excavation sidewalls were sloped (1.5:1 ratio) for stability in accordance with Occupational Safety and Health Administration Excavation Standard 29 Code of Federal Regulations Part 1926 Sub-part P Section 1926.652(c)(4). Approximately 20 barrels of impacted groundwater were removed from the excavation and transported to the Aggregate Recycling Facility in Weld County, Colorado, for recycling. The general site layout and excavation footprint are depicted on the Excavation Site Map provided as Figure 1.

## 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.

While backfilling the excavation, 375 pounds of COGAC®, a carbon-based bioremediation product designed to capture and degrade petroleum hydrocarbons via chemical oxidation and passive bio-stimulation, were applied to the clean backfill in a series of lifts in the capillary and phreatic horizons.

## Soil Remediation Summary

☐ In Situ

Bioremediation ( or enhanced bioremediation )

Chemical oxidation

Air sparge / Soil vapor extraction

Natural Attenuation

Other

☒ Ex Situ

Yes Excavate and offsite disposal

If Yes: Estimated Volume (Cubic Yards) 2870

Name of Licensed Disposal Facility or COGCC Facility ID # 149007

No Excavate and onsite remediation

Land Treatment

Bioremediation (or enhanced bioremediation)

Chemical oxidation

Other

## Groundwater Remediation Summary

Yes Bioremediation ( or enhanced bioremediation )

Yes Chemical oxidation

No Air sparge / Soil vapor extraction

Yes Natural Attenuation

Yes Other COGAC® Application and Groundwater Removal

## 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 MW01 through MW05 are sampled on a quarterly basis and submitted for laboratory analysis for BTEX by United States Environmental Protection Agency Method 8260D. The monitoring well locations are depicted on Figure 1. A Groundwater Elevation Contour Map generated using the March 2020 survey data is provided as Figure 2. The groundwater analytical results are summarized in Table 1, and the laboratory analytical report for the March 2020 groundwater monitoring event is attached.

Groundwater monitoring will continue on a quarterly basis until a No Further Action status request is warranted.

## REMEDIATION PROGRESS UPDATE

### PERIODIC REPORTING

**Frequency:** ☒ Quarterly ☐ Semi-Annually ☐ Annually ☐ Other \_\_\_\_\_

**Report Type:** ☒ Groundwater Monitoring ☐ Land Treatment Progress Report ☐ O&M Report  
☐ Other \_\_\_\_\_

### 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:

The petroleum hydrocarbon impacted soil was excavated and transported to the Kerr-McGee Land Treatment Facility in Weld County, Colorado, for recycling. The petroleum hydrocarbon impacted groundwater was removed from the excavation and transported to the Aggregate Recycling Facility in Weld County, Colorado, for recycling.

Volume of E&P Waste (solid) in cubic yards 2870

E&P waste (solid) description Petroleum hydrocarbon impacted soil

COGCC Disposal Facility ID #, if applicable: 149007

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

Volume of E&P Waste (liquid) in barrels 20

E&P waste (liquid) description Petroleum hydrocarbon impacted groundwater

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

Do all soils meet Table 910-1 standards? Yes

Does the previous reply indicate consideration of background concentrations? No

Are the only residual soil impacts pH, SAR, or EC at depths greater than 3 feet below ground surface? \_\_\_\_\_

Does Groundwater meet Table 910-1 standards? No

Is additional groundwater monitoring to be conducted? Yes

## 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 Kerr-McGee facility was deconstructed. The site will be reclaimed in accordance with COGCC 1000 Series Reclamation Rules.

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 approve the seed mix? \_\_\_\_\_

If NO, does the seed mix comply with local soil conservation district recommendations? \_\_\_\_\_

## IMPLEMENTATION SCHEDULE

### PRIOR DATES

Date of Surface Owner notification/consultation, if required. 01/16/2019

Actual Spill or Release date, if known. 01/16/2019

### SITE INVESTIGATION DATES

Date of Initial Actions described in Site Investigation Plan (start date). 01/15/2019

Date of commencement of Site Investigation. 01/15/2019

Date of completion of Site Investigation.

### REMEDIAL ACTION DATES

Date of commencement of Remediation. 01/15/2019

Date of completion of Remediation.

### SITE RECLAMATION DATES

Date of commencement of Reclamation.

Date of completion of Reclamation.

### OPERATOR COMMENT

Form 27 update reports will be submitted to the COGCC on a quarterly basis until the extent of groundwater impacts has been fully delineated

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

Signed: Phil Hamlin

Title: Senior Environmental Rep.

Submit Date: 04/15/2020

Email: Phil\_Hamlin@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: Kari Oakman

Date: 04/20/2020

Remediation Project Number: 13292

### COA Type

### Description

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### 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

402360400	FORM 27-SUPPLEMENTAL-SUBMITTED
402362310	SITE MAP
402362311	GROUND WATER ELEVATION MAP
402367924	ANALYTICAL RESULTS

Total Attach: 4 Files

### General Comments

#### User Group

#### Comment

#### Comment Date

		Stamp Upon Approval
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Total: 0 comment(s)