

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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Receive Date:  
02/17/2022

Report taken by:  
PETER GINTAUTAS

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> Phone: <u>(720) 929-4306</u> Mobile: <u>( )</u>
Address: <u>P O BOX 173779</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>		

PROJECT, PURPOSE & SITE INFORMATION

PROJECT INFORMATION

Remediation Project #: 9297 Initial Form 27 Document #: 200437747

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: thermogenic methane in GW

SITE INFORMATION

No Multiple Facilities

Facility Type: <u>NONFACILITY</u>	Facility ID: <u>453967</u>	API #: _____	County Name: <u>WELD</u>
Facility Name: <u>752520 73N66W</u>	Latitude: <u>40.234400</u>	Longitude: <u>-104.815500</u>	
** correct Lat/Long if needed: Latitude: _____		Longitude: _____	
QtrQtr: <u>SWSE</u>	Sec: <u>7</u>	Twp: <u>3N</u>	Range: <u>66W</u> Meridian: <u>6</u> Sensitive Area? <u>Yes</u>

SITE CONDITIONS

General soil type - USCS Classifications SM Most Sensitive Adjacent Land Use IRRIGATED  
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

Groundwater.

SITE INVESTIGATION PLAN

TYPE OF WASTE:

- E&P Waste, Other E&P Waste, Non-E&P Waste, Produced Water, Workover Fluids, Thermogenic Gas, 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. Row 1: Yes, GROUNDWATER, thermogenic gas present in GW, sampling and 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.

A temporary water system was installed in 2013 to provide potable water for the Henrickson residence. The water well was disconnected from the residence at that time. An assessment is currently underway to determine which, if any, producing gas well in the area is the source of the dissolved hydrocarbon in the water well. Even though no source has yet been identified, in January of 2014 Kerr-McGee provided a domestic water tap to the Henrickson residence, as a permanent solution.

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 ):

Empty text box for soil sampling details.

Proposed Groundwater Sampling

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

The subject water well (permit #15631) has been on a quarterly sampling schedule since the 3rd quarter of 2013. No samples were collected the 1st and 2nd quarters of 2014 due to surface damages to the well casing, and a failure of the well pump. Starting on May 12, 2015 the subject water well was sampled on a bimonthly basis. Starting on 2/16/2019, the well is being sampled on a quarterly basis, as possible. All water samples will be analyzed per COGCC Rule 615e(2-4) constituents, at a minimum. Notification requirements in COGCC Rule 615e(4)C will be followed, as appropriate.

Proposed Surface Water Sampling

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

Empty text box for surface water sampling details.

Additional Investigative Actions

Additional alternative investigative actions described in attached Site Investigation Plan ( summary ):

Kerr-McGee is currently investigating their production wells within a 3/4 mi radius of the subject water well. Any production well identified as a potential source will be sampled (production gas, and if present, any gas/liquids in the bradenhead) for comparison to the impacts in the subject water well. Any production well with identified integrity issues will be properly remediated.

SITE INVESTIGATION REPORT

## SAMPLE SUMMARY

### Soil

Number of soil samples collected 0  
Number of soil samples exceeding 915-1 \_\_\_\_\_  
Was the areal and vertical extent of soil contamination delineated? \_\_\_\_\_  
Approximate areal extent (square feet) \_\_\_\_\_

### NA / ND

\_\_\_\_\_ Highest concentration of TPH (mg/kg) \_\_\_\_\_  
\_\_\_\_\_ Highest concentration of SAR \_\_\_\_\_  
BTEX > 915-1 \_\_\_\_\_  
Vertical Extent > 915-1 (in feet) \_\_\_\_\_

### Groundwater

Number of groundwater samples collected 39  
Was extent of groundwater contaminated delineated? No  
Depth to groundwater (below ground surface, in feet) 90'  
Number of groundwater monitoring wells installed 0  
Number of groundwater samples exceeding 915-1 0

-- \_\_\_\_\_ Highest concentration of Benzene (µg/l) 7.8  
-- \_\_\_\_\_ Highest concentration of Toluene (µg/l) 233  
ND \_\_\_\_\_ Highest concentration of Ethylbenzene (µg/l) \_\_\_\_\_  
ND \_\_\_\_\_ Highest concentration of Xylene (µg/l) \_\_\_\_\_  
-- \_\_\_\_\_ Highest concentration of Methane (mg/l) 76

### 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.

## 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?

Kerr-McGee is continuing to assess, and as needed, remediate their production wells in the vicinity of the subject water well.

## 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.

Any production well identified as a potential source of the impact to the subject water well will be remediated. Once the source has been eliminated, natural attenuation of the impact is expected.

### 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.

Analytical data suggests continued overall decline in the degree of thermogenic impacts to the water well since sampling was initiated. The latest sample exhibits the lowest amount of thermogenic methane to date. With the continued decline of thermogenic impacts to this water well, Kerr-McGee requests moving to semi-annual sampling in 2022.

### Soil Remediation Summary

In Situ

Ex Situ

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

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

\_\_\_\_\_ Chemical oxidation  
\_\_\_\_\_ Air sparge / Soil vapor extraction  
\_\_\_\_\_ Natural Attenuation  
\_\_\_\_\_ Other \_\_\_\_\_

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  
Yes \_\_\_\_\_ 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.

See comments under Proposed Groundwater Sampling in the Site Investigation Plan section of this document.

## **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 \_\_\_\_\_

### **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: \_\_\_\_\_

# 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? 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.

N/A

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. \_\_\_\_\_

Actual Spill or Release date, or date of discovery. \_\_\_\_\_

### SITE INVESTIGATION DATES

Date of Initial Actions described in Site Investigation Plan (start date). 03/27/2013

Proposed site investigation commencement. 03/27/2013

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

## REMEDIAL ACTION DATES

Proposed start date of Remediation. \_\_\_\_\_

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

Summary data tables and laboratory analytical reports for the 2021 sampling events are attached. Analytical results were uploaded to the COENV database via Form 43 (Document #s 402660777, 402803692, 402876601, and 402950296). For 2022, Kerr-McGee recommends moving to semi-annual sampling of the subject water well as identified in the Proposed Groundwater Sampling section. Kerr-McGee will continue an annual Form 27 reporting schedule, as approved by the Director under COGCC Rule 913.e.

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

Signed: Erik Mickelson \_\_\_\_\_

Title: Sr Environmental Advisor \_\_\_\_\_

Submit Date: 02/17/2022 \_\_\_\_\_

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: PETER GINTAUTAS \_\_\_\_\_

Date: 02/17/2022 \_\_\_\_\_

Remediation Project Number: 9297 \_\_\_\_\_

## Condition of Approval

### COA Type

### Description

1 COA	The analytical data provided to date indicates a decrease in thermogenic gas content and the request to sample on a semi-annual basis is justified and approved at this time.
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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

402952181	FORM 27-SUPPLEMENTAL-SUBMITTED
402952203	ANALYTICAL RESULTS
402952204	ANALYTICAL RESULTS
402952205	ANALYTICAL RESULTS
402952207	ANALYTICAL RESULTS
402952208	ANALYTICAL RESULTS
402952209	ANALYTICAL RESULTS
402952210	ANALYTICAL RESULTS
402952211	ANALYTICAL RESULTS
402952212	ANALYTICAL RESULTS

Total Attach: 10 Files

## General Comments

**User Group**

**Comment**

**Comment Date**

<b><u>User Group</u></b>	<b><u>Comment</u></b>	<b><u>Comment Date</u></b>
		Stamp Upon Approval

Total: 0 comment(s)