

State of Colorado  
Oil and Gas Conservation Commission

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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.

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

OPERATOR INFORMATON

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) 515-1698</u>
City: <u>DENVER</u>	State: <u>CO</u>	Zip: <u>80217-3779</u>
Contact Person: <u>Greg Hamilton</u>	Email: <u>Gregory.Hamilton@anadarko.com</u>	Mobile: <u>( )</u>

PROJECT, PURPOSE & SITE INFORMATION

**PROJECT INFORMATION**  
Remediation Project #: 13198 Initial Form 27 Document #: 401988757

**PURPOSE INFORMATION**

<input type="checkbox"/> 901.e. Sensitive Area Determination	<input type="checkbox"/> 909.c.(5), Rule 910.b.(4): Remediation of impacted ground water
<input checked="" 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 type="checkbox"/> 909.c.(2), Rule 906: Spill/Release Remediation	<input checked="" 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 Facilites ( in accordance with Rule 909.c. )

Facility Type: <u>TANK BATTERY</u>	Facility ID: <u>442141</u>	API #: _____	County Name: <u>WELD</u>
Facility Name: <u>BROWN TANK BATTERY 13C-26HZ</u>	Latitude: <u>40.177437</u>	Longitude: <u>-104.749876</u>	
	** correct Lat/Long if needed: Latitude: <u>40.177272</u>	Longitude: <u>-104.749979</u>	
QtrQtr: <u>SWSW</u>	Sec: <u>35</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 CL Most Sensitive Adjacent Land Use Surface Water

Is domestic water well within 1/4 mile? No 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**

NA

# SITE INVESTIGATION PLAN

## TYPE OF WASTE:

- |  |  |   |
|--|--|---|
| <input type="checkbox"/> E&P Waste       | <input type="checkbox"/> Other E&P Waste                   | <input checked="" type="checkbox"/> Non-E&P Waste |
| <input type="checkbox"/> Produced Water  | <input type="checkbox"/> Workover Fluids                   | No Waste Generated _____                          |
| <input type="checkbox"/> Oil             | <input type="checkbox"/> Tank Bottoms                      |   |
| <input type="checkbox"/> Condensate      | <input type="checkbox"/> Pigging Waste                     |   |
| <input type="checkbox"/> Drilling Fluids | <input type="checkbox"/> Rig Wash                          |   |
| <input type="checkbox"/> Drill Cuttings  | <input type="checkbox"/> Spent Filters                     |   |
|  | <input type="checkbox"/> Pit Bottoms                       |   |
|  | <input type="checkbox"/> Other (as described by EPA) _____ |   |

## DESCRIPTION OF IMPACT

Impacted?	Impacted Media	Extent of Impact	How Determined
No	SOILS	50' N-S x 30' E-W x 3.5' bgs	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.

A partially buried produced water vessel (PWV) was removed from the Brown 32-35 location on March 7, 2019. Groundwater and impacted soil were not encountered in the PWV excavation. A liner was not present beneath the PWV at this site. The PWV at this facility will be replaced. Soil samples from the excavation were submitted for laboratory analysis, to determine if a release occurred. The general site layout, soil sample location, and PWV excavation dimensions are depicted on the Excavation Site Map provided as 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 March 7, 2019, following removal of the PWV, soil samples were collected from the sidewalls and base of the excavation. The soil samples were field-screened for volatile organic compounds using a photoionization detector (PID). Soil samples B01@3.5', B02@3.5', W01@2.5', and W02@2.5' were submitted for laboratory analysis of benzene, toluene, ethylbenzene, and total xylenes (BTEX) and total petroleum hydrocarbons (TPH) – gasoline range organics (GRO) by EPA Method 8260C, TPH diesel and oil range organics (DRO and ORO) by EPA Method 8015, pH, and electrical conductivity (EC). Laboratory analytical results for all four soil samples indicate that BTEX, TPH, pH, and EC concentrations and levels were in full compliance with COGCC Table 910-1 allowable levels. The soil sample analytical results are summarized in Table 1, and the laboratory analytical report is attached.

### Proposed Groundwater Sampling

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

No groundwater was encountered in the excavation.

### 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 4  
Number of soil samples exceeding 910-1 0  
Was the areal and vertical extent of soil contamination delineated? Yes  
Approximate areal extent (square feet) 0

### NA / ND

-- Highest concentration of TPH (mg/kg) 10.8  
NA Highest concentration of SAR           
BTEX > 910-1 No  
Vertical Extent > 910-1 (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 910-1         

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 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?

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 results indicate that the soil samples were in full compliance with COGCC Table 910-1 allowable levels, therefore, no soils were removed. The excavation area was backfilled and contoured to match pre-existing site 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 results indicate that all soil sample concentrations were in compliance with COGCC allowable levels. Groundwater was not encountered in the PVV excavation. Based on the analytical data presented herein, assessment is complete at this site and no further activities are required. Upon COGCC approval of the Initial Form 27, Kerr-McGee will submit a Supplemental Form 27 request for a No Further Action (NFA) determination for this site.

## **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**

No \_\_\_\_\_ Bioremediation ( or enhanced bioremediation )  
No \_\_\_\_\_ Chemical oxidation  
No \_\_\_\_\_ Air sparge / Soil vapor extraction  
No \_\_\_\_\_ Natural Attenuation  
No \_\_\_\_\_ 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.

NA

# REMEDIATION PROGRESS UPDATE

## PERIODIC REPORTING

**Frequency:**  Quarterly  Semi-Annually  Annually  Other Final Report \_\_\_\_\_  
**Report Type:**  Groundwater Monitoring  Land Treatment Progress Report  O&M Report  
 Other Produced water vessel closure \_\_\_\_\_

## 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? Yes \_\_\_\_\_

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? Yes \_\_\_\_\_

Is additional groundwater monitoring to be conducted? No \_\_\_\_\_

## 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? 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. \_\_\_\_\_

Actual Spill or Release date, if known. \_\_\_\_\_

### SITE INVESTIGATION DATES

Date of Initial Actions described in Site Investigation Plan (start date). 03/07/2019

Date of commencement of Site Investigation. 03/07/2019

Date of completion of Site Investigation. 03/07/2019

### REMEDIAL ACTION DATES

Date of commencement of Remediation. \_\_\_\_\_

Date of completion of Remediation. \_\_\_\_\_

### SITE RECLAMATION DATES

Date of commencement of Reclamation. \_\_\_\_\_

Date of completion of Reclamation. \_\_\_\_\_

### OPERATOR COMMENT

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

Signed: Greg Hamilton

Title: Sr. Staff Enviro. Rep.

Submit Date: 04/22/2019

Email: Gregory.Hamilton@anadarko.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: 04/22/2019

Remediation Project Number: 13198

### COA Type

### Description

	Based on the information presented, it appears that no further action is necessary at this time and the COGCC approves the closure request. However, should future conditions at the site indicate contaminant concentrations in soils exceeding COGCC standards or if ground water is found to be impacted, then further investigation and/or further remediation activities may be required. In addition, the surface area disturbed by the remediation activity shall be reclaimed in accordance with the 1000 Series Reclamation Rules.
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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

402012033	FORM 27-SUPPLEMENTAL-SUBMITTED
402012041	ANALYTICAL RESULTS
402012043	SOIL SAMPLE LOCATION MAP

Total Attach: 3 Files

### General Comments

#### User Group

#### Comment

#### Comment Date

		Stamp Upon Approval
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Total: 0 comment(s)