

# State of Colorado Oil and Gas Conservation Commission

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401483227

Receive Date:

12/19/2017

Report taken by:

BOB CHESSON

## 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@anadarko.com</u>	Mobile: <u>( )</u>

### PROJECT, PURPOSE & SITE INFORMATION

#### PROJECT INFORMATION

Remediation Project #: 10777 Initial Form 27 Document #: 401471221

#### 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

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

Facility Type: <u>LOCATION</u>	Facility ID: <u>317946</u>	API #: _____	County Name: <u>WELD</u>
Facility Name: <u>CANNON H-63N65W 33SWSW</u>		Latitude: <u>40.177410</u>	Longitude: <u>-104.674340</u>
		** correct Lat/Long if needed: Latitude: <u>40.175374</u>	Longitude: <u>-104.677199</u>
QtrQtr: <u>SWSW</u>	Sec: <u>33</u>	Twp: <u>3N</u>	Range: <u>65W</u> Meridian: <u>6</u> Sensitive Area? <u>Yes</u>
Facility Type: <u>LOCATION</u>	Facility ID: <u>327957</u>	API #: _____	County Name: <u>WELD</u>
Facility Name: <u>CANNON LAND-63N65W 28SESE</u>		Latitude: <u>40.190957</u>	Longitude: <u>-104.661776</u>
		** correct Lat/Long if needed: Latitude: <u>40.196391</u>	Longitude: <u>-104.660451</u>
QtrQtr: <u>SESE</u>	Sec: <u>28</u>	Twp: <u>3N</u>	Range: <u>65W</u> Meridian: <u>6</u> Sensitive Area? <u>Yes</u>
Facility Type: <u>LOCATION</u>	Facility ID: <u>328463</u>	API #: _____	County Name: <u>WELD</u>
Facility Name: <u>MOSER-63N65W 28SENE</u>		Latitude: <u>40.197740</u>	Longitude: <u>-104.660870</u>
		** correct Lat/Long if needed: Latitude: <u>40.196731</u>	Longitude: <u>-104.660477</u>
QtrQtr: <u>SENE</u>	Sec: <u>28</u>	Twp: <u>3N</u>	Range: <u>65W</u> Meridian: <u>6</u> Sensitive Area? <u>Yes</u>

Facility Type:	LOCATION	Facility ID:	329672	API #:		County Name:	WELD
Facility Name:		UPRC-63N65W 33NWNW		Latitude:	40.187820	Longitude:	-104.676230
				** correct Lat/Long if needed: Latitude:	40.188897	Longitude:	-104.676434
QtrQtr:	NWNW	Sec:	33	Twp:	3N	Range:	65W
				Meridian:	6	Sensitive Area?	Yes

Facility Type:	LOCATION	Facility ID:	336494	API #:		County Name:	WELD
Facility Name:		WARDELL 3N-20HZ		Latitude:	40.190428	Longitude:	-104.688958
				** correct Lat/Long if needed: Latitude:	40.189463	Longitude:	-104.688493
QtrQtr:	SESW	Sec:	29	Twp:	3N	Range:	65W
				Meridian:	6	Sensitive Area?	Yes

**SITE CONDITIONS**

General soil type - USCS Classifications	SC	Most Sensitive Adjacent Land Use	Agriculture
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?	No		

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

NA

## SITE INVESTIGATION PLAN

### TYPE OF WASTE:

☐ E&P Waste

☐ Other E&P Waste

☒ Non-E&P Waste

☐ Produced Water

☐ Workover Fluids

No Waste Generated

☐ 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	SOILS	See attached Sump Closure Reports	Soil sample results provided

### INITIAL ACTION SUMMARY

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

The objective of the soil and groundwater (if present) sampling was to determine if petroleum hydrocarbon impacts to the subsurface media resulted from Kerr-McGee operating a produced water sump at the site.

### 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 ):

Soil sampling was conducted to determine if petroleum hydrocarbon impacts to subsurface soil resulted from Kerr-McGee operating a produced water sump at the respective sites. For each sump closure site, one or more soil samples were collected for laboratory analysis of benzene, toluene, ethylbenzene, and total xylenes (BTEX), total petroleum hydrocarbons (TPH), pH, and specific conductivity (EC). The soil sampling activities, laboratory analytical results, and conclusions are summarized in the attached Sump Closure Reports.

#### Proposed Groundwater Sampling

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

If groundwater was encountered in the sump excavation, a groundwater sample was collected and submitted for laboratory analysis of BTEX. The groundwater sampling activities are summarized in the attached Sump Closure Reports, as applicable.

#### 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 10

Number of soil samples exceeding 910-1 1

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

Approximate areal extent (square feet) 832

### NA / ND

-- Highest concentration of TPH (mg/kg) 905

NA Highest concentration of SAR

BTEX > 910-1 Yes

Vertical Extent > 910-1 (in feet) 5

### Groundwater

Number of groundwater samples collected 0

Was extent of groundwater contaminated delineated? No

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.

Soil samples were collected from the sump excavation for laboratory analysis of TPH, BTEX, pH, and EC. Impacted soil, if encountered, was transported to either the Kerr-McGee Land Treatment Facility in Weld County, Colorado, or to a licensed disposal facility, as applicable. The Sump Closure Reports are attached.

## 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.

Source removal, as applicable, has been completed at the sump closure sites as summarized in the attached Sump Closure Reports. Groundwater impacts were not encountered. No further action is required for these sites.

## 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) 20  
Name of Licensed Disposal Facility or COGCC Facility ID # 434766  
No 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

## REMEDATION PROGRESS UPDATE

### PERIODIC REPORTING

**Frequency:** ☐ Quarterly ☐ Semi-Annually ☐ Annually ☒ Other Produced Water Vessel Closure

**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? Yes

Describe beneficial use, if any, of E&P Waste derived from this remediation project:

The petroleum hydrocarbon impacted soil from the Wardell 3C-20HZ excavation was transported to the Aggregate Recycle Facility in Weld County, Colorado, for recycling.

Volume of E&P Waste (solid) in cubic yards 20

E&P waste (solid) description Petroleum hydrocarbon impacted soil (Wardell 3C-20HZ)

COGCC Disposal Facility ID #, if applicable: 434766

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

Volume of E&P Waste (liquid) in barrels 0

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? No

Do all soils meet Table 910-1 standards? \_\_\_\_\_

Does the previous reply indicate consideration of background concentrations? \_\_\_\_\_

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? \_\_\_\_\_

Is additional groundwater monitoring to be conducted? \_\_\_\_\_

## 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.

Sump closure sites have been reclaimed (interim) or are in the process of being reclaimed (final) 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). 01/26/2017

Date of commencement of Site Investigation. 01/26/2017

Date of completion of Site Investigation. 05/05/2017

### 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: Phil Hamlin

Title: Senior HSE Representative

Submit Date: 12/19/2017

Email: Phil.Hamlin@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: BOB CHESSON

Date: 12/20/2017

Remediation Project Number: 10777

### 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

401483227	FORM 27-SUPPLEMENTAL-SUBMITTED
401483267	SITE INVESTIGATION REPORT
401483270	SITE INVESTIGATION REPORT
401483271	SITE INVESTIGATION REPORT
401483272	SITE INVESTIGATION REPORT
401483273	SITE INVESTIGATION REPORT

Total Attach: 6 Files

## General Comments

### User Group

### Comment

### Comment Date

		Stamp Upon Approval
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Total: 0 comment(s)