

# State of Colorado Oil and Gas Conservation Commission

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401645361

Receive Date:

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

### PROJECT, PURPOSE & SITE INFORMATION

#### PROJECT INFORMATION

Remediation Project #: 11360 Initial Form 27 Document #: 401629262

#### 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>305817</u>	API #: _____	County Name: <u>WELD</u>
Facility Name: <u>B &amp; M-62N65W 5NWNE</u>		Latitude: <u>40.173530</u>	Longitude: <u>-104.685780</u>
		** correct Lat/Long if needed: Latitude: <u>40.174146</u>	Longitude: <u>-104.688093</u>
QtrQtr: <u>NWNE</u>	Sec: <u>5</u>	Twp: <u>2N</u>	Range: <u>65W</u> Meridian: <u>6</u> Sensitive Area? <u>Yes</u>
Facility Type: <u>LOCATION</u>	Facility ID: <u>318052</u>	API #: _____	County Name: <u>WELD</u>
Facility Name: <u>MAYER WALTER GU-63N67W 27NWNE</u>		Latitude: <u>40.200340</u>	Longitude: <u>-104.872725</u>
		** correct Lat/Long if needed: Latitude: <u>40.200683</u>	Longitude: <u>-104.868192</u>
QtrQtr: <u>NWNE</u>	Sec: <u>27</u>	Twp: <u>3N</u>	Range: <u>67W</u> Meridian: <u>6</u> Sensitive Area? <u>Yes</u>
Facility Type: <u>LOCATION</u>	Facility ID: <u>319164</u>	API #: _____	County Name: <u>WELD</u>
Facility Name: <u>BUTTERBALL 24N2-34HZ</u>		Latitude: <u>40.157130</u>	Longitude: <u>-104.871050</u>
		** correct Lat/Long if needed: Latitude: <u>40.158033</u>	Longitude: <u>-104.871076</u>
QtrQtr: <u>NENE</u>	Sec: <u>10</u>	Twp: <u>2N</u>	Range: <u>67W</u> Meridian: <u>6</u> Sensitive Area? <u>Yes</u>

Facility Type: LOCATION		Facility ID: 326696		API #:		County Name: WELD	
Facility Name: HOVEY WANKER-64N67W 9SESE				Latitude: 40.321061		Longitude: -104.888931	
				** correct Lat/Long if needed: Latitude: 40.320061		Longitude: -104.886941	
QtrQtr: SESE	Sec: 9	Twp: 4N	Range: 67W	Meridian: 6	Sensitive Area? Yes		

Facility Type: LOCATION		Facility ID: 327245		API #:		County Name: WELD	
Facility Name: B & M USX X-62N65W 5NWNW				Latitude: 40.171813		Longitude: -104.693220	
				** correct Lat/Long if needed: Latitude: 40.174124		Longitude: -104.688135	
QtrQtr: NWNW	Sec: 5	Twp: 2N	Range: 65W	Meridian: 6	Sensitive Area? Yes		

Facility Type: LOCATION		Facility ID: 331399		API #:		County Name: WELD	
Facility Name: ULRICH P-63N67W 22SENE				Latitude: 40.213208		Longitude: -104.869841	
				** correct Lat/Long if needed: Latitude: 40.214615		Longitude: -104.868656	
QtrQtr: SENE	Sec: 22	Twp: 3N	Range: 67W	Meridian: 6	Sensitive Area? Yes		

Facility Type: LOCATION		Facility ID: 332961		API #:		County Name: WELD	
Facility Name: MILLER-63N67W 26NWNE				Latitude: 40.201638		Longitude: -104.856595	
				** correct Lat/Long if needed: Latitude: 40.200427		Longitude: -104.854000	
QtrQtr: NWNE	Sec: 26	Twp: 3N	Range: 67W	Meridian: 6	Sensitive Area? Yes		

Facility Type: LOCATION		Facility ID: 418518		API #:		County Name: WELD	
Facility Name: Dechant X 01-06				Latitude: 40.168690		Longitude: -104.613930	
				** correct Lat/Long if needed: Latitude: 40.167606		Longitude: -104.611870	
QtrQtr: SENW	Sec: 1	Twp: 2N	Range: 65W	Meridian: 6	Sensitive Area? Yes		

Facility Type: TANK BATTERY		Facility ID: 442619		API #:		County Name: WELD	
Facility Name: POWERS TANK BATTERY 35N-22HZ				Latitude: 40.126770		Longitude: -104.657414	
				** correct Lat/Long if needed: Latitude: 40.125961		Longitude: -104.657682	
QtrQtr: NENW	Sec: 22	Twp: 2N	Range: 65W	Meridian: 6	Sensitive Area? Yes		

Facility Type: TANK BATTERY		Facility ID: 444980		API #:		County Name: WELD	
Facility Name: PSC/PESCO 13-2A O SA 34003253				Latitude: 40.254590		Longitude: -104.864311	
				** correct Lat/Long if needed: Latitude: 40.254553		Longitude: -104.864325	
QtrQtr:	Sec: 2	Twp: 3N	Range: 67W	Meridian: 6	Sensitive Area? Yes		

Facility Type: TANK BATTERY		Facility ID: 445531		API #:		County Name: WELD	
Facility Name: MILLER, JACK-63N67W 26SWNE				Latitude: 40.199870		Longitude: -104.854040	
				** correct Lat/Long if needed: Latitude: 40.200264		Longitude: -104.853910	
QtrQtr: SWNE	Sec: 26	Twp: 3N	Range: 67W	Meridian: 6	Sensitive Area? Yes		

## SITE CONDITIONS

General soil type - USCS Classifications SC 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

### 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
No	SOILS	See 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 sampling was to determine if petroleum hydrocarbon impacts to the subsurface media resulted from 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 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 ):

#### 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 14

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) 457

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.

Soil samples were collected from the sump excavations for laboratory analysis of TPH, BTEX, pH, and EC. Soil samples were in full compliance with COGCC Table 910-1 allowable levels. 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.

Soil impacts were not encountered above COGCC Table 910-1 allowable levels. 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

\_\_\_\_\_ 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

## REMEDATION PROGRESS UPDATE

### PERIODIC REPORTING

**Frequency:** ☐ Quarterly ☐ Semi-Annually ☐ Annually ☒ Other Final Report; 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? 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: \_\_\_\_\_

## REMEDATION COMPLETION REPORT

### REMEDATION COMPLETION SUMMARY

Is this a Final Closure Request for this Remediation Project? Yes

Do all soils meet Table 910-1 standards? No

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? Yes

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.

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). 10/10/2017

Date of commencement of Site Investigation. 10/10/2017

Date of completion of Site Investigation. 12/29/2017

### **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**

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

Signed: Erik Mickelson

Title: Senior HSE Representative

Submit Date: 06/12/2018

Email: Erik.Mickelson@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: 06/12/2018

Remediation Project Number: 11360

**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**

401645361	FORM 27-SUPPLEMENTAL-SUBMITTED
401645372	SITE INVESTIGATION REPORT
401645373	SITE INVESTIGATION REPORT
401645375	SITE INVESTIGATION REPORT
401645376	SITE INVESTIGATION REPORT
401645377	SITE INVESTIGATION REPORT
401645378	SITE INVESTIGATION REPORT
401645383	SITE INVESTIGATION REPORT
401645386	SITE INVESTIGATION REPORT
401645388	SITE INVESTIGATION REPORT
401645393	SITE INVESTIGATION REPORT

Total Attach: 11 Files

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

		Stamp Upon Approval
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Total: 0 comment(s)