

State of Colorado Oil and Gas Conservation Commission

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Document Number:

401873149

Receive Date:

Report taken by:

Site Investigation and Remediation Workplan (Initial 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: KERR MCGEE OIL & GAS ONSHORE LP	Operator No: 47120	Phone Numbers Phone: (970) 515-1698 Mobile: ()
Address: P O BOX 173779		
City: DENVER	State: CO Zip: 80217-3779	
Contact Person: Greg Hamilton	Email: gregory.hamilton@anadarko.com	

PROJECT, PURPOSE & SITE INFORMATION

PROJECT INFORMATION

Remediation Project #: Initial Form 27 Document #: 401873149

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 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: LOCATION	Facility ID: 318971	API #:	County Name: WELD
Facility Name: LISA-62N67W 18NESW		Latitude: 40.136856	Longitude: -104.935711
		** correct Lat/Long if needed: Latitude: 40.136623	Longitude: -104.935584
QtrQtr: NESW	Sec: 18	Twp: 2N	Range: 67W Meridian: 6 Sensitive Area? No
Facility Type: LOCATION	Facility ID: 328645	API #:	County Name: WELD
Facility Name: DINNEL-63N66W 14NENE		Latitude: 40.230970	Longitude: -104.737360
		** correct Lat/Long if needed: Latitude: 40.230511	Longitude: -104.735093
QtrQtr: NENE	Sec: 14	Twp: 3N	Range: 66W Meridian: 6 Sensitive Area? No
Facility Type: LOCATION	Facility ID: 329899	API #:	County Name: WELD
Facility Name: CAMENISCH-64N67W 33NWSE		Latitude: 40.268120	Longitude: -104.893820
		** correct Lat/Long if needed: Latitude: 40.269363	Longitude: -104.891590
QtrQtr: NWSE	Sec: 33	Twp: 4N	Range: 67W Meridian: 6 Sensitive Area? Yes

Facility Type: LOCATION		Facility ID: 330051		API #:		County Name: WELD	
Facility Name: HSR-PAUL SCHMIDT-63N66W 33SESE				Latitude: 40.176110		Longitude: -104.775090	
				** correct Lat/Long if needed: Latitude: 40.177945		Longitude: -104.779725	
QtrQtr: SESE	Sec: 33	Twp: 3N	Range: 66W	Meridian: 6	Sensitive Area? No		

Facility Type: LOCATION		Facility ID: 330070		API #:		County Name: WELD	
Facility Name: HSR-SALAZAR-63N67W 20SWNW				Latitude: 40.212650		Longitude: -104.920260	
				** correct Lat/Long if needed: Latitude: 40.213456		Longitude: -104.918312	
QtrQtr: SWNW	Sec: 20	Twp: 3N	Range: 67W	Meridian: 6	Sensitive Area? Yes		

Facility Type: LOCATION		Facility ID: 330474		API #:		County Name: WELD	
Facility Name: VARRA 20-32				Latitude: 40.176394		Longitude: -104.906000	
				** correct Lat/Long if needed: Latitude: 40.175391		Longitude: -104.906244	
QtrQtr: SESE	Sec: 32	Twp: 3N	Range: 67W	Meridian: 6	Sensitive Area? Yes		

Facility Type: LOCATION		Facility ID: 336625		API #:		County Name: WELD	
Facility Name: ZADEL 16C-35HZ				Latitude: 40.263880		Longitude: -104.883610	
				** correct Lat/Long if needed: Latitude: 40.264261		Longitude: -104.881978	
QtrQtr: SWSW	Sec: 34	Twp: 4N	Range: 67W	Meridian: 6	Sensitive Area? Yes		

Facility Type: LOCATION		Facility ID: 429183		API #:		County Name: WELD	
Facility Name: NICHOLS TANK BATTERY 37N-31HZ				Latitude: 40.161280		Longitude: -104.704962	
				** correct Lat/Long if needed: Latitude: 40.160947		Longitude: -104.704905	
QtrQtr: SWSE	Sec: 6	Twp: 2N	Range: 65W	Meridian: 6	Sensitive Area? Yes		

SITE CONDITIONS

General soil type - USCS Classifications SM Most Sensitive Adjacent Land Use Rangeland, Cropland

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? No

Other Potential Receptors within 1/4 mile

Residential areas are located north of NICHOLS TANK BATTERY 37N-31HZ, east of ZADEL 16C-35HZ, southeast of HSR-SALAZAR-63N67W 20SWNW, northwest of VARRA 20-32, and south of LISA-62N67W 18NESW. A wetland is located east of ZADEL 16C-35HZ and VARRA 20-32, and west of CAMENISCH-64N67W 33NWSE.

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
No	SOILS	No impacts	Sampling 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.

The objective of the soil sampling was to determine if the operation of produced water sumps at the sites resulted in petroleum hydrocarbon impacts to the subsurface media.

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 the operation of produced water sumps resulted in petroleum hydrocarbon impacts at the respective sites. For each sump closure site, one or more samples were collected for laboratory analysis of benzene, toluene, ethylbenzene, and total xylenes (BTEX), total petroleum hydrocarbons (TPH) – gasoline range organics (GRO) by USEPA Method 8260C, TPH – diesel range organics and residual range organics (DRO and RRO, respectively) by USEPA Method 8015C, electrical conductivity (EC), and pH. The soil sampling activities, laboratory analytical results, and conclusions will be summarized in a Sump Closure Report for each site.

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 10

Number of soil samples exceeding 910-1 0

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

Approximate areal extent (square feet) 960

NA / ND

-- Highest concentration of TPH (mg/kg) 1.32

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?

Background samples were collected from each site. Laboratory analytical results indicate that pH and EC levels were compliant or samples were collected below the designated root zone (>3 feet bgs) at the extent of the excavation; therefore, the background soil samples were not submitted 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?

REMEDIAL ACTION PLAN

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. No impacted soil was encountered.

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, completed at the sump closure sites will be summarized in the Sump Closure Reports. Groundwater was not encountered at any of the locations.

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

☐ _____ Bioremediation (or enhanced bioremediation)
☐ _____ Chemical oxidation
☐ _____ Air sparge / Soil vapor extraction
☐ _____ 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.

REMEDIATION PROGRESS UPDATE

PERIODIC REPORTING

Frequency: ☐ Quarterly ☐ Semi-Annually ☐ Annually ☒ Other Produced water sump closure

Report Type: ☐ Groundwater Monitoring ☐ Land Treatment Progress Report ☐ O&M Report

☒ Other Produced water sump 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: _____

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). 09/10/2018

Date of commencement of Site Investigation. 09/10/2018

Date of completion of Site Investigation. 12/17/2018

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: ` Greg Hamilton

Title: Senior Staff HSE Rep

Submit Date: `

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: _____

Date: _____

Remediation Project Number: _____

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**

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Total Attach: 0 Files

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

		Stamp Upon Approval
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Total: 0 comment(s)