

State of Colorado
Oil and Gas Conservation Commission

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Report taken by:
CHRIS CANFIELD

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 & GAS ONSHORE LP</u>	Operator No: <u>47120</u>	Phone Numbers
Address: <u>P O BOX 173779</u>		
City: <u>DENVER</u>	State: <u>CO</u>	Phone: <u>(970) 336-3500</u>
	Zip: <u>80217-3779</u>	Mobile: <u>(970) 515-1161</u>
Contact Person: <u>Phillip Hamlin</u>	Email: <u>Phillip_Hamlin@oxy.com</u>	

PROJECT, PURPOSE & SITE INFORMATION

PROJECT INFORMATION

Remediation Project #: 9828 Initial Form 27 Document #: 2526907

PURPOSE INFORMATION

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

Facility Type: <u>SPILL OR RELEASE</u>	Facility ID: <u>444878</u>	API #: _____	County Name: <u>WELD</u>
Facility Name: <u>SPILL/RELEASE POINT</u>	Latitude: <u>40.016982</u>	Longitude: <u>-104.955940</u>	
** correct Lat/Long if needed: Latitude: _____		Longitude: _____	
QtrQtr: <u>NWSW</u>	Sec: <u>25</u>	Twp: <u>1N</u>	Range: <u>68W</u> Meridian: <u>6</u> Sensitive Area? <u>Yes</u>

SITE CONDITIONS

General soil type - USCS Classifications SC Most Sensitive Adjacent Land Use Non-Crop Land

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

The nearest domestic water well is located approximately 540 feet south-southwest of the release location. A retention pond is located approximately 960 feet south of the release location. A building is located approximately 1,285 feet southwest of the release location.

SITE INVESTIGATION PLAN

TYPE OF WASTE:

- | | | |
|---|--|--|
| <input checked="" type="checkbox"/> E&P Waste | <input type="checkbox"/> Other E&P Waste | <input type="checkbox"/> Non-E&P Waste |
| <input type="checkbox"/> Produced Water | <input type="checkbox"/> Workover Fluids | |
| <input checked="" 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
	GROUNDWATER	See attached data	Groundwater sampling and laboratory analysis
	SOILS	66' (E-W) x 57' (N-S) x 20' bgs	Excavation, soil sampling, and laboratory 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.

On February 13, 2016, a dump line release was discovered by an operator during routine activities at the UPRC 25-12V (formerly UPRC-61N68W/25NWSW) production facility. The facility was shut-in, affected infrastructure was removed, and excavation activities were initiated. Groundwater was encountered in the excavation area at approximately 20 feet below ground surface (bgs). The COGCC issued Spill/Release Point ID 444878 for this release.

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 samples were collected as described in the Initial Form 27 (COGCC Document No. 2526907). Based on the data presented, impacted soils in the excavation area were remediated to be in full compliance with the COGCC Table 910-1 standards.

Proposed Groundwater Sampling

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

Between June 1, 2016 and March 29, 2017, 12 temporary groundwater monitoring wells (BH01 - BH12) were installed to assess the extent of groundwater impacts and for remediation purposes. Quarterly groundwater monitoring was initiated on June 1, 2016, and is ongoing at the seven (7) monitoring wells remaining (BH01 - BH05, BH07, and BH08). Monitoring wells BH06 and BH09 - BH12 were removed from the monitoring program, as described in a previous Form 27-Supplemental update (COGCC Document No. 402518334). Groundwater samples are collected from the 7 monitoring wells on a quarterly basis. The samples from BH01, BH03, BH05, BH07, and BH08 are analyzed for benzene, toluene, ethylbenzene, and total xylenes (BTEX), naphthalene, 1,2,4- and 1,3,5-trimethylbenzene (TMB), chloride, sulfate, and total dissolved solids (TDS). The samples from BH02 and BH04 are analyzed for chloride, sulfate, and TDS only, as described in a previous Form 27-Supplemental update (COGCC Document No. 402599453).

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):

Groundwater analytical data is presented in Table 1. The groundwater sample locations are illustrated on Figure 1. The laboratory analytical reports for the Second Quarter 2021 groundwater monitoring event are provided as Attachment A.

SITE INVESTIGATION REPORT

SAMPLE SUMMARY

Soil

Number of soil samples collected 20
Number of soil samples exceeding 910-1 4
Was the areal and vertical extent of soil contamination delineated? Yes
Approximate areal extent (square feet) 3760

NA / ND

-- Highest concentration of TPH (mg/kg) 491
NA Highest concentration of SAR
BTEX > 910-1 Yes
Vertical Extent > 910-1 (in feet) 20

Groundwater

Number of groundwater samples collected 195
Was extent of groundwater contaminated delineated? Yes
Depth to groundwater (below ground surface, in feet) 17'
Number of groundwater monitoring wells installed 12
Number of groundwater samples exceeding 910-1 40

-- Highest concentration of Benzene (µg/l) 15300
0
-- Highest concentration of Toluene (µg/l) 10900
00
-- Highest concentration of Ethylbenzene (µg/l) 14000
0
-- Highest concentration of Xylene (µg/l) 22600
00
NA Highest concentration of Methane (mg/l)

Surface Water

0 Number of surface water samples collected
0 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?

Impacted groundwater has historically been detected in off-site temporary groundwater monitoring wells BH05, BH07, BH08, and BH09.

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?

Impacted groundwater remains at the site. The 7 temporary groundwater monitoring wells remaining (BH01 - BH05, BH07, and BH08) will continue to be sampled and submitted for laboratory analysis on a quarterly basis.

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.

Between March 22 and May 13, 2016, approximately 2,350 cubic yards of impacted material were excavated and transported to the Front Range Landfill in Erie, Colorado for disposal.

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 data indicate that impacted soils in the excavation area have been remediated to be in full compliance with the COGCC Table 910-1 standards. On June 13, 2016, bi-weekly light non-aqueous phase liquid (LNAPL) gauging and removal activities were initiated at monitoring well BH01, and were continued through July 27, 2018. Quarterly groundwater monitoring, sampling, and analysis is ongoing. Additional remedial activities may be evaluated, as necessary, to address remaining groundwater impacts. Estimated time to attain NFA is TBD based on the groundwater concentrations, the extent of impacted groundwater, and the efficacy of the selected remedial technologies.

Soil Remediation Summary

In Situ

Ex Situ

_____ Bioremediation (or enhanced bioremediation)

Yes _____ Excavate and offsite disposal

_____ Chemical oxidation

If Yes: Estimated Volume (Cubic Yards) _____ 2350

_____ Air sparge / Soil vapor extraction

Name of Licensed Disposal Facility or COGCC Facility ID # _____

_____ Natural Attenuation

No _____ Excavate and onsite remediation

_____ Other _____

_____ 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

Yes _____ Natural Attenuation

Yes _____ Other _____ LNAPL recovery

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.

Between June 1, 2016 and March 29, 2017, 12 temporary groundwater monitoring wells (BH01 - BH12) were installed at the site to assess the extent of groundwater impacts and for remediation purposes. Monitoring wells BH06 and BH09 - BH12 were removed from the quarterly monitoring program, as described in a previous Form 27-Supplemental Update (COGCC Document No. 402518334). The 7 temporary groundwater monitoring wells remaining (BH01 - BH05, BH07, and BH08) will continue to be sampled and submitted for laboratory analysis on a quarterly basis. Upgradient and historically compliant groundwater monitoring well BH02 was selected from the Second Quarter 2021 monitoring event as the site-specific local background location for comparison to inorganic standards in Table 915-1. Based on a comparison to site-specific background concentrations, inorganic constituents in all of the point-of-compliance (POC) monitoring wells were in full compliance with the Table 915-1 standards during the Second Quarter 2021 monitoring event. Kerr-McGee will continue to evaluate POC for Table 915-1 standards on a quarterly basis, based on site-specific local background concentrations. Groundwater sample locations are illustrated on Figure 1, and a potentiometric surface contour map for the Second Quarter 2021 is presented as Figure 2. Boring logs for the temporary groundwater monitoring wells are provided as Attachment B.

REMEDATION PROGRESS UPDATE

PERIODIC REPORTING

Frequency: Quarterly Semi-Annually Annually Other _____

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? Yes

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

NA

Volume of E&P Waste (solid) in cubic yards 2350

E&P waste (solid) description Hydrocarbon-impacted soil

COGCC Disposal Facility ID #, if applicable: _____

Non-COGCC Disposal Facility: Front Range Landfill - Erie, CO

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? No

Is additional groundwater monitoring to be conducted? Yes

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 has been restored to its pre-release grade. Kerr-McGee will conduct reclamation activities in accordance with COGCC 1000 Series 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. 02/13/2016

Actual Spill or Release date, if known. 02/13/2016

SITE INVESTIGATION DATES

Date of Initial Actions described in Site Investigation Plan (start date). 02/13/2016

Date of commencement of Site Investigation. 02/13/2016

Date of completion of Site Investigation. _____

REMEDIAL ACTION DATES

Date of commencement of Remediation. 03/22/2016

Date of completion of Remediation. _____

SITE RECLAMATION DATES

Date of commencement of Reclamation. _____

Date of completion of Reclamation. _____

OPERATOR COMMENT

Based on the Second Quarter 2021 groundwater monitoring results, site-specific background concentrations have been determined for inorganic constituents, and POC has been established under the COGCC Table 915-1 standards. As such, Kerr-McGee will continue to provide annual Form 27-Supplemental updates for this site. The Project Implementation Summary is provided as Attachment C.

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

Signed: Phillip Hamlin _____

Title: Senior Environmental Rep _____

Submit Date: 05/24/2021 _____

Email: Phillip_Hamlin@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: CHRIS CANFIELD _____

Date: 05/27/2021 _____

Remediation Project Number: 9828 _____

Condition of Approval**COA Type****Description**

COA Type	Description
0 COA	

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**

402683060	FORM 27-SUPPLEMENTAL-SUBMITTED
402683096	LOGS
402683097	GROUND WATER ELEVATION MAP
402683100	AERIAL IMAGE
402683101	ANALYTICAL RESULTS
402683112	IMPLEMENTATION SCHEDULE
402697191	GROUND WATER SAMPLE LOCATION

Total Attach: 7 Files

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

User Group	Comment	Comment Date
		Stamp Upon Approval

Total: 0 comment(s)