

State of Colorado Oil and Gas Conservation Commission

1120 Lincoln Street, Suite 801, Denver, Colorado 80203

Phone: (303) 894-2100 Fax: (303) 894-2109



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Receive Date:

07/29/2022

Report taken by:

Candice (Nikki) Graber

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.

Closure request is not available for an Initial Site Investigation and Remediation Workplan.

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>		Phone: <u>(970) 336-3500</u>
City: <u>DENVER</u>	State: <u>CO</u>	Zip: <u>80217-3779</u>
Contact Person: <u>Phillip Hamlin</u>	Email: <u>Phillip_Hamlin@oxy.com</u>	Mobile: <u>()</u>

PROJECT, PURPOSE & SITE INFORMATION

PROJECT INFORMATION

Remediation Project #: 9264 Initial Form 27 Document #: 200437395

PURPOSE INFORMATION

- ☐ Rule 913.c.(1): Pit or Cuttings Trench closure.
- ☐ Rule 913.c.(2): Buried or partially buried vessel closure, which will be by removal.
- ☒ Rule 913.c.(3): Remediation of Spill and Releases pursuant to Rule 912.
- ☐ Rule 913.c.(4): Land treatment of Oily Waste pursuant to Rule 905.e.
- ☐ Rule 913.c.(5): Closure of Centralized E&P Waste Management Facilities pursuant to Rule 907.h.
- ☒ Rule 913.c.(6): Remediation of impacted Groundwater pursuant to Rule 915.e.(3).D, and the contaminant concentrations in Table 915-1.
- ☐ Rule 913.c.(7): Investigation and remediation of natural gas in soil or Groundwater.
- ☐ Rule 913.c.(8): When requested by the Director due to any potential risk to soil, Groundwater, or surface water.
- ☐ Rule 913.c.(9): Decommissioning of Oil and Gas Facilities.
- ☐ Rule 913.g: Changes of Operator.
- ☐ Rule 915.b: Request to leave elevated inorganics in situ.
- ☒ Other: Closure of remediation project

SITE INFORMATION

No Multiple Facilities

Facility Type: <u>SPILL OR RELEASE</u>	Facility ID: <u>442346</u>	API #: <u></u>	County Name: <u>WELD</u>
Facility Name: <u>SPILL/RELEASE POINT</u>		Latitude: <u>40.205743</u>	Longitude: <u>-104.826514</u>
		** correct Lat/Long if needed: Latitude: <u></u>	Longitude: <u></u>
QtrQtr: <u>SWSW</u>	Sec: <u>19</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 SW

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

Surface water is located approximately 250 feet west of the release location. The nearest domestic water well is located approximately 250 feet northwest of the release location. Multiple buildings and livestock holding pens are located within ¼ mile of the release location.

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
Yes	GROUNDWATER	See attached data	Groundwater sampling and laboratory analysis
Yes	SOILS	95' (E-W) x 75' (N-S) x14' 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 July 1, 2015, historical impacts were discovered during abandonment activities at the Platteville 1-19 production facility, and excavation activities were initiated. Groundwater was encountered in the excavation at approximately 6 feet below ground surface (bgs). The COGCC issued Spill/Release Point ID 442346 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 from the historical 2015 excavation area, as described in the Initial Form 27 (COGCC Document No. 200437395). Additional soil sampling was conducted during the engineered excavation and remediation activities completed at the site in 2019, as described a previous Form 27-Supplemental update (COGCC Document No. 402125363). Based on the data presented, impacted soils in the 2015 and 2019 excavation areas were remediated to be in full compliance with the COGCC Table 910-1 standards. Based on the date of discovery and initiation of excavation activities (July 1, 2015), the COGCC Table 910-1 soil standards have been applied to the soil analytical results at this location. Historical soil sample analytical data is presented in Tables 1 through 3. The 2015 and 2019 excavation soil sample locations are illustrated on Figures 1 and 2, respectively.

Proposed Groundwater Sampling

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

On June 1, 2015, groundwater sample GW01 was collected from the 2015 excavation area, and on July 17 through August 5, 2019, groundwater samples GW02-GW12 were collected from the 2019 excavation area, and submitted for laboratory analysis of BTEX. Analytical results indicated that the benzene, toluene, and/or total xylenes concentrations in samples GW01-GW09, GW11, and GW12 exceeded the COGCC Table 910-1 standards. Quarterly groundwater monitoring was initiated on October 30, 2015 at temporary monitoring wells BH01 - BH04, and was continued at monitoring wells BH01 - BH19 and various replacement monitoring wells (BH01R, BH04R, BH06R, BH07R, BH09R, BH09R2, BH16R), until concentrations remained in compliance with COGCC Table 915-1 standards for four consecutive quarters. Monitoring wells BH01-BH07, BH09, BH16-BH18, BH02R, BH03R, and BH09R were destroyed, removed during remediation activities, or abandoned under an approved monitoring well reduction request (COGCC Document No. 402443737).

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 67
Number of soil samples exceeding 915-1 1
Was the areal and vertical extent of soil contamination delineated? Yes
Approximate areal extent (square feet) 4360

NA / ND

-- Highest concentration of TPH (mg/kg) 862
NA Highest concentration of SAR
BTEX > 915-1 Yes
Vertical Extent > 915-1 (in feet) 14

Groundwater

Number of groundwater samples collected 386
Was extent of groundwater contaminated delineated? Yes
Depth to groundwater (below ground surface, in feet) 10
Number of groundwater monitoring wells installed 28
Number of groundwater samples exceeding 915-1 85

-- Highest concentration of Benzene (µg/l) 8480
-- Highest concentration of Toluene (µg/l) 18900
-- Highest concentration of Ethylbenzene (µg/l) 686
-- Highest concentration of Xylene (µg/l) 15300
NA Highest concentration of Methane (mg/l)

Surface Water

0 Number of surface water samples collected
0 Number of surface water samples exceeding 915-1
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 BH12 and BH13.

☐ 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.

On July 1, 2015, approximately 230 cubic yards of impacted soil were excavated and transported to the Kerr-McGee Land Treatment Facility in Weld County, Colorado. Approximately 80 barrels of impacted groundwater were removed from the 2015 excavation area via vacuum truck and transported to a licensed disposal facility. The 2015 excavation soil analytical results are summarized in Table 1. Additional details regarding the 2015 excavation activities were provided in the Initial Form 27 (COGCC Document No. 200437395). During the 2019 remedial excavation activities, approximately 1,820 barrels of groundwater were removed from the excavation area via vacuum truck and transported to the Kerr-McGee Aggregate Recycle Facility. The final 2015 excavation extent and associated sample locations are illustrated on Figure 1. The final 2019 excavation extent and associated sample locations are illustrated on Figure 2.

REMEDICATION 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.

On November 23, 2015, LNAPL gauging and removal activities were initiated. A passive LNAPL bailer was installed in well BH09R on May 5, 2017, and bi-weekly LNAPL gauging and recovery events were conducted at monitoring wells BH01, BH04, BH06, and BH09R. In 2019, impacted soil from 2 to 14 ft bgs was treated in-situ using chemical oxidant (chemox) soil mixing techniques with a dilute hydrogen peroxide solution. On-site excavation and chemox soil mixing activities were conducted from July 17 through August 2, 2019, and treated approximately 1,200 cubic yards of impacted soil. The 2019 remedial excavation soil analytical results are summarized in Table 2, and the 2019 post-treatment confirmation soil analytical results are summarized in Table 3. Prior to backfilling, approximately 302 pounds of OxPure® activated carbon were added to the 2019 remedial excavation area to mitigate remaining hydrocarbon impacts in groundwater. Details of the 2019 remediation activities were provided in a previous Form 27-Supplemental update (COGCC Document No. 402125363). Analytical results indicated that impacted soils in the 2015 and 2019 excavation areas have been remediated to be in full compliance with the COGCC Table 910-1 standards. Based on the date of discovery and initiation of excavation activities (July 1, 2015), the COGCC Table 910-1 soil standards have been applied to the soil analytical results at this location. Based on the analytical data presented herein, remediation is complete at this site and Kerr-McGee is requesting a No Further Action (NFA) determination for this release.

Soil Remediation Summary

☒ In Situ

No Bioremediation (or enhanced bioremediation)
 Yes Chemical oxidation
 No Air sparge / Soil vapor extraction
 No Natural Attenuation
 No Other

☒ Ex Situ

Yes Excavate and offsite disposal
 If Yes: Estimated Volume (Cubic Yards) 230
 Name of Licensed Disposal Facility or COGCC Facility ID # 149007
 Yes Excavate and onsite remediation
 No Land Treatment
 No Bioremediation (or enhanced bioremediation)
 Yes Chemical oxidation
 No Other

Groundwater Remediation Summary

No Bioremediation (or enhanced bioremediation)
 No Chemical oxidation
 No Air sparge / Soil vapor extraction
 Yes Natural Attenuation
 Yes Other Groundwater removal, LNAPL recovery, OxPure® activated carbon application

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 October 28, 2015, and August 30, 2019, a total of 28 temporary groundwater monitoring wells (BH01 - BH19, BH01R - BH04R, BH06R, BH07R, BH09R, BH09R2, BH16R) were installed to further assess the extent of groundwater impacts and for remediation purposes. Monitoring wells BH01-BH07, BH09, BH16-BH18, BH02R, BH03R, and BH09R were destroyed, removed during the 2019 remediation activities, or abandoned under an approved monitoring well reduction request (COGCC Document No. 402443737). The 14 temporary groundwater monitoring wells remaining (BH01R, BH04R-BH07R, BH08, BH09R2, BH10-BH15, BH19) were sampled on a quarterly basis and submitted for laboratory analysis of Table 915-1 constituents. Analytical results for the groundwater samples collected from the temporary monitoring wells indicate that hydrocarbon constituent concentrations were in compliance with the COGCC Table 915-1 standards for four consecutive quarters. Upgradient and historically compliant groundwater monitoring well BH16R was selected 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 the site monitoring wells were in compliance with the Table 915-1 standards. Temporary groundwater monitoring well locations and quarterly groundwater elevation contour maps are illustrated on Figures 3 through 6. Laboratory analytical reports for the previous five quarters of groundwater monitoring are provided as Attachment A. Well completion logs for the temporary monitoring wells are provided as Attachment B.

REMEDATION PROGRESS UPDATE

PERIODIC REPORTING

Approved Reporting Schedule:

☐ Quarterly☐ Semi-Annually☐ Annually☒ Other

☐ Request Alternative Reporting Schedule:

☐ Semi-Annually☐ Annually☐ Other

Rule 913.e:

After initial approval of a Form 27, the Operator will provide quarterly update reports in a Supplemental Form 27 to document progress of site investigation and remediation, unless an alternative reporting schedule has been requested by the Operator and approved by the Director. The Director may request a more frequent reporting schedule based on site-specific conditions.

Report Type:

☐ Groundwater Monitoring☐ Land Treatment Progress Report☐ O&M Report☒ Other NFA Request

Adequacy of Operator's General Liability Insurance and Financial Assurance

Describe the adequacy of the Operator's general liability insurance and Financial Assurance to fully address the anticipated costs of Remediation, including the estimated remaining cost for this project (below).

If this information has been provided on a Form 27 within the last 12 months, provide the Document Number of that form.

KMOG has sufficient insurance and bonding to fully address the anticipated costs of Remediation, including the remaining estimated costs for this project. KMOG currently has over 40 million in bonds with the Colorado Oil and Gas Conservation Commission. The cost for remediation is a preliminary estimate only, costs may change upwards or downward based on site-specific information. KMOG makes no representation or guarantees as to the accuracy of the preliminary estimate.

Operator anticipates the remaining cost for this project to be: \$ 0

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:

Approximately 230 cubic yards of hydrocarbon-impacted soil were transported to the Kerr-McGee Land Treatment Facility in Weld County, Colorado for recycling. Approximately 1,820 barrels of hydrocarbon-impacted groundwater were transported to the Kerr-McGee Aggregate Recycle Facility in Weld County, Colorado for recycling.

Volume of E&P Waste (solid) in cubic yards 230

E&P waste (solid) description Impacted soil

COGCC Disposal Facility ID #, if applicable: 149007

Non-COGCC Disposal Facility:

Volume of E&P Waste (liquid) in barrels 1900

E&P waste (liquid) description Impacted groundwater

COGCC Disposal Facility ID #, if applicable: 434766

Non-COGCC Disposal Facility: Licensed disposal facility

REMEDATION COMPLETION REPORT

REMEDATION COMPLETION SUMMARY

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

If YES:

☒ Compliant with Rule 913.h.(1).

☐ Compliant with Rule 913.h.(2).

☒ Compliant with Rule 913.h.(3).

Do all soils meet Table 915-1 standards? No

Does the previous reply indicate consideration of background concentrations?

Does Groundwater meet Table 915-1 standards? Yes

Is additional groundwater monitoring to be conducted? _____

Operator shall comply with the COGCC 1000-Series Reclamation Requirements for all impacted and disturbed areas.

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 provide the seed mix? _____

If YES, does the seed mix comply with local soil conservation district recommendations? _____

Did the local soil conservation district provide the seed mix? _____

SITE RECLAMATION DATES

Proposed date of commencement of Reclamation. _____

Proposed date of completion of Reclamation. _____

IMPLEMENTATION SCHEDULE

Per Rule 913.d.(2): Any change from the approved implementation schedule will be requested at least 14 days in advance, and the Operator may not make the change without the Director's approval.

PRIOR DATES

Date of Surface Owner notification/consultation, if required. 07/02/2015

Actual Spill or Release date, or date of discovery. 07/01/2015

SITE INVESTIGATION DATES

Date of Initial Actions described in Site Investigation Plan (start date). 07/01/2015

Proposed site investigation commencement. 07/01/2015

Proposed completion of site investigation. 08/30/2019

REMEDIAL ACTION DATES

Proposed start date of Remediation. 07/01/2015

Proposed date of completion of Remediation. 07/01/2022

Per Rule 913.d.(2): Any change from the approved implementation schedule will be requested at least 14 days in advance, and the Operator may not make the change without the Director's approval.

☐ Change from approved implementation schedule per Rule 913.d.(2).

Basis for change in implementation schedule:

OPERATOR COMMENT

As described, laboratory analytical data for the soil samples collected from the final extents of the 2015 and 2019 excavation areas were in full compliance with the COGCC Table 910-1 standards. Based on the date of discovery and initiation of excavation activities (July 1, 2015), the COGCC Table 910-1 soil standards have been applied to the soil analytical results at this location. Laboratory analytical data for the groundwater samples collected from the temporary monitoring wells indicated that constituent concentrations were in compliance with the COGCC Table 915-1 standards for four consecutive quarters. Soil analytical results are summarized in Tables 1 through 3; groundwater analytical results are summarized in Table 4. Excavation soil and groundwater sample locations are illustrated on Figures 1 and 2; temporary monitoring well locations and quarterly groundwater contour maps are illustrated on Figures 3 through 6. Laboratory analytical reports for the previous five quarters of groundwater monitoring are provided as Attachment A; temporary monitoring well completion logs are provided as Attachment B; a project implementation summary is provided as Attachment C. Based on the remediation activities completed at the site and the analytical results presented herein, Kerr-McGee is requesting an NFA determination for this location.

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: 07/29/2022

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: Candice (Nikki) Graber

Date: 09/22/2022

Remediation Project Number: 9264

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

	Operator shall abandon the monitoring wells in accordance with DWR regulations within 90 days of the approval of this Form 27.
	Based on the information presented, it appears that no further remedial 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 groundwater is found to be impacted, then further investigation and/or remediation activities may be required. The surface area disturbed by the remediation activity shall be reclaimed in accordance with the 1000 Series Reclamation Rules. For locations with active ongoing oil and gas operations, comply with Rule 1003 interim reclamation requirements and for locations that will no longer have active oil and gas operations, comply with Rule 1004 Final Reclamation requirements.
2 COAs	

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**

403112644	FORM 27-SUPPLEMENTAL-SUBMITTED
403112761	LOGS
403112762	SOIL SAMPLE LOCATION MAP
403112763	SOIL SAMPLE LOCATION MAP
403112765	GROUND WATER ELEVATION MAP
403112767	ANALYTICAL RESULTS
403112768	ANALYTICAL RESULTS
403112769	ANALYTICAL RESULTS
403112778	IMPLEMENTATION SCHEDULE

Total Attach: 9 Files

General Comments

<u>User Group</u>	<u>Comment</u>	<u>Comment Date</u>
		Stamp Upon Approval

Total: 0 comment(s)