

State of Colorado Energy & Carbon Management Commission

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Report taken by:

Taylor Robinson

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) 515-1698</u>
City: <u>DENVER</u>	State: <u>CO</u>	Zip: <u>80217-3779</u>
Contact Person: <u>Gregory Hamilton</u>	Email: <u>Gregory_Hamilton@oxy.com</u>	Mobile: <u>()</u>

PROJECT, PURPOSE & SITE INFORMATION

PROJECT INFORMATION

Remediation Project #: 20486 Initial Form 27 Document #: 402842917

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: _____

SITE INFORMATION

Yes Multiple Facilities

Facility Type: <u>LOCATION</u>	Facility ID: <u>329585</u>	API #: _____	County Name: <u>WELD</u>
Facility Name: <u>HOUSTON-63N67W 17SENE</u>	Latitude: <u>40.227200</u>	Longitude: <u>-104.907490</u>	
** correct Lat/Long if needed: Latitude: <u>40.227416</u>		Longitude: <u>-104.908372</u>	
QtrQtr: <u>SENE</u>	Sec: <u>17</u>	Twp: <u>3N</u>	Range: <u>67W</u>
Meridian: <u>6</u>	Sensitive Area? <u>Yes</u>		
Facility Type: <u>SPILL OR RELEASE</u>	Facility ID: <u>481301</u>	API #: _____	County Name: <u>WELD</u>
Facility Name: <u>Houston 17-8L Tank Battery Release</u>	Latitude: <u>40.227439</u>	Longitude: <u>-104.908658</u>	
** correct Lat/Long if needed: Latitude: _____		Longitude: _____	
QtrQtr: <u>SENE</u>	Sec: <u>17</u>	Twp: <u>3N</u>	Range: <u>67W</u>
Meridian: <u>6</u>	Sensitive Area? <u>Yes</u>		

SITE CONDITIONS

General soil type - USCS Classifications SC

Most Sensitive Adjacent Land Use 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? No

Other Potential Receptors within 1/4 mile

Multiple buildings and livestock holding pens are located within ¼ mile of the facility.
The nearest building is located approximately 1,150 feet southwest of the facility.
The nearest domestic water well is located approximately 1,140 feet north of the facility.
Surface water is located approximately 190 feet northwest of the facility.
A wetland is located approximately 190 feet northwest of the facility.
The facility is located within a ¼ mile of a designated high priority habitat.

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
UNDETERMINED	GROUNDWATER	TBD	Groundwater samples/laboratory analytical results
Yes	SOILS	See attached data.	Soil samples/laboratory analytical results

INITIAL ACTION SUMMARY

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

This form has been prepared to summarize assessment activities conducted during the closure of one aboveground storage tank (AST), one produced water vessel (PWV), one emission control device (ECD), and one separator at the Houston 17-7L, 17-8L O SA Facility. The AST, PWV, ECD, and separator were permanently removed. Assessment activities began on December 17, 2021. Soil assessment activities were conducted in accordance with COGCC Rule 911.a. A photo log is included as an attachment.

On December 20, 2021, upon receipt of the laboratory analytical report for samples collected on December 17, 2021, historically impacted soil was discovered in the facility excavation. Laboratory analytical results indicated the PWV soil sample PW-B01@5', dumphine soil sample DL-B02@3', and separator soil sample SEP-B02@3' exceeded the COGCC Table 915-1 allowable levels for total petroleum hydrocarbons (TPH), benzene, toluene, 1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene, naphthalene, benzo(a)anthracene, fluorene, 1-methylnaphthalene, and/or 2-methylnaphthalene. The release was reported to the COGCC in the Form 19 Initial dated December 22, 2021 (Document No. 402904928). The volume of the release is unknown. The impacted soil was excavated.

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):

Between December 17, 2021 and May 25, 2022, soil samples were collected from the AST, PWV, ECD, separator and ancillary piping (see Figure 1). The soil samples were field screened for total volatile organic compounds using a photoionization detector (PID). Based on PID readings, select soil samples were submitted for laboratory analysis in accordance with COGCC Rule 911.a. The impacted soil at the former separator (including the location of DL-B02@3') and at the former produced water vessel was excavated. Analytical results indicated soil was in full compliance with Table 915-1 standards, or below background, at the extents of the excavation. The PID readings and soil sample results are summarized in Tables 1 and 2, respectively. The laboratory reports are attached.

Proposed Groundwater Sampling

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

On April 21, 2022, one groundwater sample was collected from the facility excavation and submitted for Table 915-1 analyses. Based on the laboratory analytical results, groundwater concentrations were in full compliance with COGCC Table 915-1 allowable levels for organic constituents. A background groundwater sample is needed to determine inorganic compliance. The excavation groundwater sample location is depicted on Figure 1. The groundwater sample analytical results are summarized in Table 3.

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 17

Number of soil samples exceeding 915-1 5

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

Approximate areal extent (square feet) 594

NA / ND

-- Highest concentration of TPH (mg/kg) 5290

-- Highest concentration of SAR 17.5

BTEX > 915-1 Yes

Vertical Extent > 915-1 (in feet) 25

Groundwater

Number of groundwater samples collected 1

Was extent of groundwater contaminated delineated? No

Depth to groundwater (below ground surface, in feet) 24

Number of groundwater monitoring wells installed 0

Number of groundwater samples exceeding 915-1 0

ND Highest concentration of Benzene (µg/l)

ND Highest concentration of Toluene (µg/l)

ND Highest concentration of Ethylbenzene (µg/l)

ND Highest concentration of Xylene (µg/l)

NA Highest concentration of Methane (mg/l)

Surface Water

0 Number of surface water samples collected

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?

☒ Were background samples collected as part of this site investigation?

Six native soil background soil samples (PW-BG01@2.5' through PW-BG03@2.5' and PW-BG01@5' through PW-BG03@5') were collected from the native soil outside of the facility excavations. The background soil samples were submitted for laboratory analysis of specific conductivity (EC), sodium adsorption ratio (SAR), pH, boron, and metals. Laboratory analytical results indicated EC, SAR, pH, boron, arsenic, barium, and selenium are naturally high in the native soil. Background soil sample analytical results are summarized in Table 2.

☐ 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?

A background groundwater sample is required to determine groundwater compliance.

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.

Approximately 100 CY of impacted soil were removed from the site and transported to the Kerr-McGee Land Treatment Facility for recycling. Approximately 120 CY of impacted soil were removed from the site and transported to the Buffalo Ridge Landfill in Keenesburg, Colorado for disposal. Approximately 200 CY of impacted soil were removed from the site and transported to the Front Range Landfill in Erie, Colorado for disposal. Disposal records are kept on file and available upon request.

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.

The impacted soil has been excavated and transported to a licensed disposal facility.

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) _____ 420
Name of Licensed Disposal Facility or COGCC Facility ID # _____ 149007
No _____ 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

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

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: \$ 5000

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 200 CY of impacted soil were removed from the site and transported to the Kerr-McGee Land Treatment Facility for recycling.

Volume of E&P Waste (solid) in cubic yards 420

E&P waste (solid) description Impacted soil

COGCC Disposal Facility ID #, if applicable: 149007

Non-COGCC Disposal Facility: Buffalo Ridge Landfill in Keenesburg, CO (120 CY); Front Range Landfill in Erie, CO (200 CY)

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

E&P waste (liquid) description

COGCC Disposal Facility ID #, if applicable:

Non-COGCC Disposal Facility:

REMEDIATION COMPLETION REPORT

REMEDIATION COMPLETION SUMMARY

Is this a Final Closure Request for this Remediation Project? No

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? Yes

Does the previous reply indicate consideration of background concentrations? Yes _____

Does Groundwater meet Table 915-1 standards? _____

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 will be reclaimed in accordance with COGCC 1000 Series Reclamation Rules.

Is the described reclamation complete? _____

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. 12/21/2021

Actual Spill or Release date, or date of discovery. 12/20/2021

SITE INVESTIGATION DATES

Date of Initial Actions described in Site Investigation Plan (start date). 12/17/2021

Proposed site investigation commencement. 12/17/2021

Proposed completion of site investigation. _____

REMEDIAL ACTION DATES

Proposed start date of Remediation. 12/17/2021

Proposed date of completion of Remediation. _____

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

The excavation and background soil sample locations have been corrected on Figures 1A and 1B to match the original GPS locations, as indicated in Table 1 and on Figure 1 in the prior Form 27 Supplemental (Doc No. 402987548).

The original version of this document, prior to being returned to draft, inadvertently included additional flowline screening and sampling locations that were not associated with this facility decommissioning project and were previously reported with wellhead/flowline closure project (Remediation No. 20486). These locations have been removed from this resubmittal.

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

Signed: Gregory Hamilton

Title: Sr. Env. Consultant

Submit Date: 07/24/2023

Email: Gregory_Hamilton@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: Taylor Robinson

Date: 08/28/2023

Remediation Project Number: 20486

COA Type**Description**

	No PAH data for FL-B05@3'. Operator will resample for PAHs and provide relevant analytical data prior to NFA request.
	No confirmation samples for samples FL-B05@3' or DL-B02@3' (VOCs/PAHs). Operator will provide this analytical data as well as soil sample locations prior to NFA request.
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**

403271074	INVESTIGATION/REMEDATION WORKPLAN (SUPPLEMENTAL)
403320258	PHOTO DOCUMENTATION
403407587	SOIL SAMPLE LOCATION MAP
403407588	SOIL SAMPLE LOCATION MAP
403407589	SOIL SAMPLE LOCATION MAP
403407590	ANALYTICAL RESULTS
403512289	FORM 27-SUPPLEMENTAL-SUBMITTED

Total Attach: 7 Files

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

		Stamp Upon Approval
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Total: 0 comment(s)