

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 GATHERING LLC</u>	Operator No: <u>47121</u>	Phone Numbers
Address: <u>PO BOX 173779</u>		Phone: <u>(970) 515-1604</u>
City: <u>DENVER</u>	State: <u>CO</u>	Zip: <u>80217</u>
Contact Person: <u>Chad Gililand</u>	Email: <u>Chad.Gililand@westernmidstream.com</u>	Mobile: <u>()</u>

PROJECT, PURPOSE & SITE INFORMATION

PROJECT INFORMATION

Remediation Project #: 15369Initial Form 27 Document #: 402354355

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 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

N Multiple Facilities (in accordance with Rule 909.c.)

Facility Type: <u>SPILL OR RELEASE</u>	Facility ID: <u>470912</u>	API #: _____	County Name: <u>ADAMS</u>
Facility Name: <u>38-0000-5193-3</u>	Latitude: <u>39.969222</u>	Longitude: <u>-104.865361</u>	
** correct Lat/Long if needed: Latitude: _____		Longitude: _____	
QtrQtr: <u>NWNW</u>	Sec: <u>14</u>	Twp: <u>1S</u>	Range: <u>67W</u>
Meridian: <u>6</u>	Sensitive Area? <u>Yes</u>		

SITE CONDITIONS

General soil type - USCS Classifications CLMost Sensitive Adjacent Land Use Occupied BuildingIs domestic water well within 1/4 mile? NoIs surface water within 1/4 mile? NoIs groundwater less than 20 feet below ground surface? Yes

Other Potential Receptors within 1/4 mile

Livestock located approximately 760 feet (ft) north, occupied building approximately 350 ft southwest, and excavation groundwater approximately 1.5 ft below ground surface (bgs).

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 Samples/Lab Analysis
Yes	SOILS	24.5' N-S x 17'E-W x 6' bgs	Soil Samples/Lab 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.

During pipe removal activities along the 38-0000-5193-3 gathering line, a pinhole release was discovered in a 3-inch riser. The volume of the release is still being determined. An excavation groundwater sample (GW01) collected on January 15, 2020 indicated benzene exceeded the COGCC Table 910-1 allowable level for groundwater.

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):

On January 17, 2020, five soil samples were collected from the base and sidewalls of the excavation and submitted for laboratory analysis of total petroleum hydrocarbons (TPH), benzene, toluene, ethylbenzene, and total xylenes (BTEX), and naphthalene. Laboratory analytical results for the soil samples indicated that TPH, BTEX, and naphthalene concentrations were in full compliance with COGCC Table 910-1 allowable levels at the extent of the excavation. The soil sample locations are depicted on Figure 1. The soil sample analytical results are summarized on Table 1.

Proposed Groundwater Sampling

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

On January 15, 2020, one groundwater sample (GW01) was collected from the excavation for BTEX analysis. Laboratory analytical results indicated that sample GW01 exceeded the COGCC Table 910-1 allowable level for benzene at 49.9 micrograms per liter (µg/L). On January 17, 2020, following the removal of impacted groundwater, one groundwater sample (GW02) was collected from the excavation. Laboratory analytical results indicated that sample GW02 was in full compliance with COGCC Table 910-1 allowable levels. The excavation groundwater sample locations are depicted on Figure 1. The groundwater sample analytical results are summarized in Table 2.

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 5
Number of soil samples exceeding 910-1 0
Was the areal and vertical extent of soil contamination delineated? Yes
Approximate areal extent (square feet) 417

NA / ND

ND Highest concentration of TPH (mg/kg) _____
NA Highest concentration of SAR _____
BTEX > 910-1 No
Vertical Extent > 910-1 (in feet) 0

Groundwater

Number of groundwater samples collected 18
Was extent of groundwater contaminated delineated? Yes
Depth to groundwater (below ground surface, in feet) 1'
Number of groundwater monitoring wells installed 4
Number of groundwater samples exceeding 910-1 1

-- Highest concentration of Benzene (µg/l) 49.9
-- Highest concentration of Toluene (µg/l) 39.8
ND Highest concentration of Ethylbenzene (µg/l) _____
-- Highest concentration of Xylene (µg/l) 8.52
NA 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?

Petroleum hydrocarbon impacts to the subsurface were encountered in the field surrounding the gathering line release location.

☐ 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.

Approximately 30 cubic yards of petroleum hydrocarbon impacted soil were removed from the excavation and transported to Front Range Landfill in Erie, Colorado, for disposal. The petroleum hydrocarbon impacted soil was excavated into the phreatic zone to address potential hydrocarbon impacts that may have been present below the current groundwater table due to seasonal fluctuations. Approximately 40 barrels of impacted groundwater were removed from the excavation and transported to the Aggregate Recycling Facility in Weld County, Colorado, for recycling. The general site layout and excavation footprint are depicted on the Excavation Site Map provided as Figure 1.

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 petroleum hydrocarbon impacted soil was excavated. Groundwater monitoring wells are sampled on a quarterly basis to assess monitored natural attenuation.

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) 30
Name of Licensed Disposal Facility or COGCC Facility ID # _____
No 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
Yes _____ Natural Attenuation
Yes _____ Other _____ Groundwater Removal

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.

In May 2020, four groundwater monitoring wells (MW01 through MW04) were installed at the site. Groundwater monitoring continued on a quarterly basis. The monitoring well locations are depicted on Figure 2. Boring logs with monitoring well completion diagrams are attached.

In May 2020, monitoring wells MW01 through MW04 were surveyed to obtain the relative groundwater and top-of-casing well elevation data. The survey data indicated the groundwater flow direction at the site is to the east. Relative groundwater elevations are provided in Table 2. Groundwater Elevation Contour Maps for the second quarter 2020 through first quarter 2021 monitoring events are provided as Figures 3A through 3D, respectively.

As of the February 2021 quarterly monitoring event, BTEX concentrations in monitoring wells MW01 through MW04 were in full compliance with COGCC Table 910-1 allowable levels for four consecutive quarterly monitoring events. The groundwater analytical results are summarized in Table 2. The laboratory analytical reports for the four compliant groundwater monitoring events are attached.

REMEDIATION PROGRESS UPDATE

PERIODIC REPORTING

Frequency: ☐ Quarterly ☐ Semi-Annually ☐ Annually ☒ Other Final Report

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

☒ Other NFA Status Request

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:

The petroleum hydrocarbon impacted groundwater was transported to the Aggregate Recycle Facility in Weld County, Colorado, for recycling.

Volume of E&P Waste (solid) in cubic yards 30

E&P waste (solid) description Petroleum hydrocarbon impacted soil

COGCC Disposal Facility ID #, if applicable:

Non-COGCC Disposal Facility: Front Range Landfill in Erie, Colorado

Volume of E&P Waste (liquid) in barrels 40

E&P waste (liquid) description Petroleum hydrocarbon impacted groundwater

COGCC Disposal Facility ID #, if applicable: 434766

Non-COGCC Disposal Facility:

REMEDIATION COMPLETION REPORT

REMEDIATION COMPLETION SUMMARY

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

Do all soils meet Table 910-1 standards? Yes

Does the previous reply indicate consideration of background concentrations? No

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? 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.

The Kerr-McGee gathering line was removed. 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 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. 01/16/2020

Actual Spill or Release date, if known. 01/16/2020

SITE INVESTIGATION DATES

Date of Initial Actions described in Site Investigation Plan (start date). 01/15/2020

Date of commencement of Site Investigation. 01/15/2020

Date of completion of Site Investigation. 05/14/2020

REMEDIAL ACTION DATES

Date of commencement of Remediation. 01/15/2020

Date of completion of Remediation. 02/25/2021

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: ` Chad Gililland

Title: Staff HSE Representative

Submit Date: ` 03/12/2021

Email: Chad.Gililland@westernmidstream.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: 03/13/2021

Remediation Project Number: 15369

COA Type**Description**

	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.
	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 groundwater is found to be impacted, then further investigation and/or remediation activities may be required.

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**

402593473	FORM 27-SUPPLEMENTAL-SUBMITTED
402625880	LOGS
402625883	ANALYTICAL RESULTS
402626461	GROUND WATER ELEVATION MAP
402626467	SOIL SAMPLE LOCATION MAP
402626468	SITE MAP

Total Attach: 6 Files

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

		Stamp Upon Approval
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Total: 0 comment(s)