

State of Colorado
Oil and Gas Conservation Commission

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Document Number:
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Receive Date:

Report taken by:

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) 336-3500</u>
City: <u>DENVER</u> State: <u>CO</u> Zip: <u>80217</u>		Mobile: <u>()</u>
Contact Person: <u>Sam LaRue</u>	Email: <u>Sam.LaRue@westernmidstream.com</u>	

PROJECT, PURPOSE & SITE INFORMATION

PROJECT INFORMATION

Remediation Project #: 9652 Initial Form 27 Document #: 200439530

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>GAS COMPRESSOR STATION</u>	Facility ID: <u>421464</u>	API #: _____	County Name: <u>WELD</u>
Facility Name: <u>PLATTEVILLE COMPRESSOR STATION 421464</u>	Latitude: <u>40.222101</u>	Longitude: <u>-104.719881</u>	
	** correct Lat/Long if needed: Latitude: <u>40.222257</u>	Longitude: <u>-104.719657</u>	
QtrQtr: <u>NWSW</u>	Sec: <u>13</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 GW Most Sensitive Adjacent Land Use RANGELAND

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

Water well approximately 510 feet (ft) north, surface water approximately 525 ft southeast, building approximately 165 ft north, and depth to groundwater approximately 15 ft below ground surface (bgs).

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 checked="" 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
Yes	GROUNDWATER	See attached data	Groundwater Sampling/Lab Analysis
Yes	SOILS	220ft E-W x 50ft N-S x 22ft bgs	Soil Sampling/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.

On May 1, 2013, an inlet slug catcher level-sensor failed causing the slug catcher to fill up, allowing liquids to flow to the low-pressure tank. The low-pressure tank overflowed releasing approximately 45 barrels (bbls) of condensate within the lined tank battery containment berm. A small amount of condensate (less than 0.5 bbl) misted onto the surface soil outside of the containment berm and travelled approximately 180 ft northeast due to melting snow. A vacuum truck was used to recover approximately 44.5 bbls of condensate from within the containment berm. The petroleum hydrocarbon 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 May 6, 2013, and April 25, 2016, 24 excavation soil samples, 14 pothole soil samples, and 2 soil boring samples were collected to determine the extent of petroleum hydrocarbon impacts to soil. The soil samples were submitted for laboratory analysis of total petroleum hydrocarbons (TPH) and benzene, toluene, ethylbenzene, and total xylenes (BTEX). Laboratory results indicated that TPH and BTEX concentrations exceeded COGCC Table 910-1 allowable levels in 6 soil samples. However, based on depth to water measurements collected at a later date, these 6 soil samples were collected from the saturated zone. Therefore, TPH and BTEX concentrations were compliant with COGCC allowable levels at the extent of the excavation above the saturated zone.

Proposed Groundwater Sampling

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

Quarterly groundwater monitoring has been conducted at the site since August 2015.

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 42
Number of soil samples exceeding 910-1 11
Was the areal and vertical extent of soil contamination delineated? Yes
Approximate areal extent (square feet) 7375

NA / ND

-- Highest concentration of TPH (mg/kg) 4000
NA Highest concentration of SAR
BTEX > 910-1 Yes
Vertical Extent > 910-1 (in feet) 22

Groundwater

Number of groundwater samples collected 401
Was extent of groundwater contaminated delineated? Yes
Depth to groundwater (below ground surface, in feet) 15
Number of groundwater monitoring wells installed 27
Number of groundwater samples exceeding 910-1 144

-- Highest concentration of Benzene (µg/l) 19900
-- Highest concentration of Toluene (µg/l) 8780
-- Highest concentration of Ethylbenzene (µg/l) 770
-- Highest concentration of Xylene (µg/l) 8670
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?

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.

Impacted soil was excavated into the capillary and phreatic zones to address potential hydrocarbon impacts that may have been present below the current groundwater table due to seasonal fluctuations. Approximately 2,200 cubic yards of impacted soil were removed from the excavation and transported to the Kerr-McGee Land Treatment Facility in Weld County, Colorado, for recycling, and the Buffalo Ridge Landfill in Keenesburg, Colorado, for disposal. The general site layout and excavation footprint are depicted on the 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.

Due to persistent, elevated BTEX concentrations in multiple site monitoring wells, an air sparging (AS)/solar vapor extraction (SVE) system was installed at the site to remediate the dissolved-phase petroleum hydrocarbon plume. On September 14, 2018, two pilot test wells (AS01 and AS02) and two observation wells (OW01 and OW02) were installed at the site. Kerr-McGee submitted an Underground Injection Control (UIC) Permit Application to Region 8 of the United States Environmental Protection Agency (USEPA) on September 20, 2018, that was subsequently approved on October 18, 2018.

Pilot testing was conducted in November 2018 and December 2018. Based on the results of the pilot testing program, installation of the full-scale AS/SVE system occurred in July 2019. The SVE system was started up on September 11, 2019, and the AS system was started up on September 27, 2019. The system is comprised of 24 AS wells and 13 SVE wells connected by a combination of surface and subsurface high-density polyethylene piping to a remediation trailer powered by electricity. The remediation system includes valves at all the AS/SVE wellheads to allow for uninterrupted flow control, measurement, and adjustment. The as-built layout of the AS/SVE system is depicted on Figure 1. Boring logs for the AS and SVE wells are attached.

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) 2200
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

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

Groundwater monitoring wells MW01 through MW27 are sampled on a quarterly basis and submitted for laboratory analysis for BTEX by USEPA Method 8260D. The monitoring well locations are depicted on the Site Map attached as Figure 1. The Groundwater Elevation Contour Map generated using the May 2020 groundwater elevation data is provided as Figure 2. The groundwater analytical results are summarized in Table 1, and the laboratory analytical reports for the May 2019, August 2019, December 2019, February 2020, and May 2020 groundwater monitoring events are attached.

Groundwater monitoring will continue on a quarterly basis until a No Further Action status request is warranted.

REMEDIATION 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:

The petroleum hydrocarbon impacted soil was transported to the Kerr-McGee Land Treatment Facility in Weld County, Colorado, for recycling, and the Buffalo Ridge Landfill in Keenesburg, Colorado, for disposal.

Volume of E&P Waste (solid) in cubic yards _____ 2200

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

COGCC Disposal Facility ID #, if applicable: _____ 149007

Non-COGCC Disposal Facility: Buffalo Ridge Landfill in Keenesburg, 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: _____

REMEDIATION COMPLETION REPORT

REMEDIATION COMPLETION SUMMARY

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

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? 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 excavation area was restored to its pre-release grade. The subject oil tank and tank berm were decommissioned. The adjoining tank battery and the Platteville Compressor Station remain at the site.

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. 04/30/2013

SITE INVESTIGATION DATES

Date of Initial Actions described in Site Investigation Plan (start date). 05/01/2013

Date of commencement of Site Investigation. 05/01/2013

Date of completion of Site Investigation. 02/06/2018

REMEDIAL ACTION DATES

Date of commencement of Remediation. 05/01/2013

Date of completion of Remediation. _____

SITE RECLAMATION DATES

Date of commencement of Reclamation. _____

Date of completion of Reclamation. _____

OPERATOR COMMENT

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

Signed: Sam LaRue

Title: Staff Environmental Rep.

Submit Date: _____

Email: Sam.LaRue@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: _____

Date: _____

Remediation Project Number: 9652

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.

<u>Att Doc Num</u>	<u>Name</u>
402405082	LOGS
402405083	ANALYTICAL RESULTS
402405085	GROUND WATER ELEVATION MAP
402405086	SITE MAP

Total Attach: 4 Files

General Comments

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

Total: 0 comment(s)