

**State of Colorado
Energy & Carbon Management Commission**

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Document Number:

403793339

Receive Date:

Report taken by:

Site Investigation and Remediation Workplan (Initial 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 ECMC 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: KERR MCGEE OIL & GAS ONSHORE LP | Operator No: 47120 | Phone Numbers |
| Address: P O BOX 173779 | | Phone: (720) 929-4306 |
| City: DENVER | State: CO | Zip: 80217-3779 |
| Contact Person: Erik Mickelson | Email: Erik_Mickelson@oxy.com | Mobile: () |

PROJECT, PURPOSE & SITE INFORMATION**PROJECT INFORMATION**

Remediation Project #: Initial Form 27 Document #: 403793339

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

No Multiple Facilities

| | | | |
|--|---------------------|---------------------|------------------------|
| Facility Type: SPILL OR RELEASE | Facility ID: 486511 | API #: _____ | County Name: WELD |
| Facility Name: Water Well - Facility ID 753954 | | Latitude: 40.062369 | Longitude: -104.732676 |
| ** correct Lat/Long if needed: Latitude: _____ | | Longitude: _____ | |
| QtrQtr: NWSW | Sec: 12 | Twp: 1N | Range: 66W |
| Meridian: 6 | Sensitive Area? Yes | | |

SITE CONDITIONS

General soil type - USCS Classifications SW

Most Sensitive Adjacent Land Use Residential

Is domestic water well within 1/4 mile? Yes

Is surface water within 1/4 mile? No

Is groundwater less than 20 feet below ground surface? No

Other Potential Receptors within 1/4 mile

None

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) Thermogenic gas

DESCRIPTION OF IMPACT

| Impacted? | Impacted Media | Extent of Impact | How Determined |
|-----------|----------------|------------------|--|
| Yes | GROUNDWATER | To be determined | Analytical results of water well samples |

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 March 4, 2024 a voluntary water sample was collected from water well Permit #47218-F, ECMC Facility ID 753954. Samples were submitted to SGS Laboratories and Isotech Laboratories. Analytical reports and Data Summary Tables are attached. On April 22, 2024 Isotech results and analysis were received indicating the presence of a trace amount of stray thermogenic gas in the water. The ECMC was notified of the release on April 23, 2024 and a Form 19-I/S (Doc# 403765714) was submitted on April 24, 2024. The subject water well, along with water well Permit #58905-F, is used as a municipal water source. The water from both wells flows into a storage tank and is treated before it is accessed by the community. A sample from the tank was offered to the well owner. Their decision is pending.

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):

Proposed Groundwater Sampling

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

Pending well owner agreement, Kerr-McGee Oil & Gas Onshore LP (KMOG) will sample the subject water well on a quarterly basis while the source of the stray gas is being investigated. Sampling and analysis will follow the requirements per ECMC Rule 615e(2-4). Notification requirements in ECMC Rule 615e(4)C will be followed, as appropriate. The attached Figure 1 - 0.75 Mile Water Well Buffer Map displays all available water sources within 0.75 mile of the subject water well. Please see the included Figure 1 - Water Well Attribute Table for details and status of the water wells.

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):

As part of the investigation into the source of the stray thermogenic gas, all production wells within 1 mile of the subject water well were evaluated. See the attached Production Well Status Summary Table for details. Of the production wells evaluated, the Martin L-2535 1 (API# 05-123-05010) was determined to be the most likely source of the stray gas detected in the water well. The Martin L-2535 1 was drilled and immediately dry abandoned in 1958. The Martin L-2535 1 was inadequately abandoned, as no barriers were set in the open hole between the Sussex and the Fox Hills aquifer. See the attached Well Completion and Plugging Records for details. When the nearby Mary 1 (API#05-123-10174) and Martin 1 (API#05-123-12199) were completed in the Sussex, possible communication between these wells and the Martin L-2535 1 would have potentially allowed for a small amount of stray gas to migrate up the open hole of the Martin L-2535 1. **Continued in Other Investigative Information.**

SITE INVESTIGATION REPORT

SAMPLE SUMMARY

Soil

Number of soil samples collected 0

Number of soil samples exceeding 915-1

Was the areal and vertical extent of soil contamination delineated?

Approximate areal extent (square feet)

NA / ND

Highest concentration of TPH (mg/kg)

Highest concentration of SAR

BTEX > 915-1

Vertical Extent > 915-1 (in feet)

Groundwater

Number of groundwater samples collected 1

Was extent of groundwater contaminated delineated? No

Depth to groundwater (below ground surface, in feet) 571

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)

-- Highest concentration of Methane (mg/l) 17

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?

☐ 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?

****Continued from Additional Investigative Actions**** The orientation of the Martin L-2535 1 to the subject water well corresponds with the direction of free phase gas migration (see the attached Figure 2 – Geologic Structure Map). Additional sampling will take place as summarized in the Proposed Sampling Plan.

REMEDIAL ACTION PLAN

SOURCE REMOVAL SUMMARY

Describe how source is to be removed.

The Martin L-2535 1 (API# 05-123-05010) was determined to be the most likely source of the stray gas detected in the subject water well due to the open hole in the well being a direct path into the Fox-Hills aquifer, as well as the geologic structure of this area placing the subject water well within the potential free phase gas migration pathway of the Martin L-2535 1 well (Figure 2).

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 Martin L-2535 1 (API# 05-123-05010) was determined to be the most likely source of the stray gas detected in the subject water well due to the open hole in the well being a direct path into the Fox-Hills aquifer, as well as the geologic structure of this area placing the subject water well within the potential free phase gas migration pathway of the Martin L-2535 1 well (Figure 2).

Pending well owner agreement, KMOG will continue to sample the subject water well on a quarterly basis while the ECMC continues their investigation. The Martin L-2535 1 is not operated by KMOG. KMOG conducted a thorough investigation of their own production wells in the area and did not find another likely source of the stray gas in the subject water well. Pending the ECMC's evaluation of this investigation, KMOG intends to submit an NFA request for this project.

Soil Remediation Summary

☐ In Situ

☐ Ex Situ

_____ Bioremediation (or enhanced bioremediation)
_____ Chemical oxidation
_____ Air sparge / Soil vapor extraction
_____ Natural Attenuation
_____ Other _____

_____ Excavate and offsite disposal
_____ If Yes: Estimated Volume (Cubic Yards) _____
_____ Name of Licensed Disposal Facility or ECMC Facility ID # _____
_____ 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.

See comments under Proposed Groundwater Sampling in the Site Investigation Plan section of this document.

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 of guarantees as to the accuracy of the preliminary estimate.

Operator anticipates the remaining cost for this project to be: \$ 10000

WASTE DISPOSAL INFORMATION

Was E&P waste generated as part of this remediation? ☐

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

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

E&P waste (solid) description

ECMC Disposal Facility ID #, if applicable:

Non-ECMC Disposal Facility:

Volume of E&P Waste (liquid) in barrels

E&P waste (liquid) description

ECMC Disposal Facility ID #, if applicable:

Non-ECMC Disposal Facility:

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.

Not applicable.

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. 04/23/2024

Actual Spill or Release date, or date of discovery. 04/22/2024

SITE INVESTIGATION DATES

Date of Initial Actions described in Site Investigation Plan (start date). 04/22/2024

Proposed site investigation commencement. 04/22/2024

Proposed completion of site investigation. 05/20/2024

REMEDIAL ACTION DATES

Proposed start date of Remediation. 05/20/2024

Proposed date of completion of Remediation. 12/31/2024

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

Pending well owner agreement, KMOG will continue to sample the subject water well on a quarterly basis while the ECMC continues their investigation. The Martin L-2535 1 is not operated by KMOG. KMOG conducted a thorough investigation of their own production wells in the area and did not find another likely source of the stray gas in the subject water well. Pending the ECMC's evaluation of this investigation, KMOG intends to submit an NFA request for this project.

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

Signed: Erik Mickelson

Title: Environmental Lead

Submit Date: _____

Email: Erik_Mickelson@oxy.com

Based on the information provided herein, this Application for Site Investigation and Remediation Workplan complies with ECMC Rules and applicable orders and is hereby approved.

ECMC Approved: _____

Date: _____

Remediation Project Number: _____

COA Type**Description**

| | |
|-------|--|
| | |
| 0 COA | |

ATTACHMENT 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**

| | |
|-----------|--------------------|
| 403800272 | ANALYTICAL RESULTS |
| 403800278 | ANALYTICAL RESULTS |
| 403800281 | ANALYTICAL RESULTS |
| 403800282 | ANALYTICAL RESULTS |
| 403800283 | MAP |
| 403800284 | MAP |
| 403800285 | OTHER |
| 403800286 | OTHER |
| 403800290 | OTHER |
| 403800292 | ANALYTICAL RESULTS |
| 403800295 | ANALYTICAL RESULTS |

Total Attach: 11 Files

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

| | | |
|--|--|---------------------|
| | | Stamp Upon Approval |
|--|--|---------------------|

Total: 0 comment(s)