

State of Colorado
Oil and Gas Conservation 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 Phone: <u>(970) 336-3500</u> Mobile: <u>(970) 515-1698</u> |
| Address: <u>P O BOX 173779</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> | | |

PROJECT, PURPOSE & SITE INFORMATION

PROJECT INFORMATION

Remediation Project #: 25902 Initial Form 27 Document #: 403216888

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>TANK BATTERY</u> | Facility ID: <u>482241</u> | API #: _____ | County Name: <u>WELD</u> |
| Facility Name: <u>Briggs 1-32 Tank Battery</u> | Latitude: <u>40.257040</u> | Longitude: <u>-104.835700</u> | |
| ** correct Lat/Long if needed: Latitude: <u>40.256834</u> | | Longitude: <u>-104.835566</u> | |
| QtrQtr: <u>SWNE</u> Sec: <u>1</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>483792</u> | API #: _____ | County Name: <u>WELD</u> |
| Facility Name: <u>UP 41 PA I 1 / Briggs O SA Historic</u> | Latitude: <u>40.257103</u> | Longitude: <u>-104.835767</u> | |
| ** correct Lat/Long if needed: Latitude: _____ | | Longitude: _____ | |
| QtrQtr: <u>SWNE</u> Sec: <u>1</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 SM

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? Yes

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 1,210 feet east of the facility.
The nearest domestic water well is located approximately 1,190 feet southeast of the facility.
Surface water is located approximately 1,200 feet southwest of the facility.

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 | SOILS | 20' (N-S) X 20' (E-W) x 6' (bgs) | Inspection/soil samples/laboratory analytical results |

INITIAL ACTION SUMMARY

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

Tank battery decommissioning activities were completed at the UP 41 PA I 1/ Briggs O SA production facility location on January 26 and 31, 2023. Visual inspection and field screening of soils at the former production facility infrastructure locations was conducted following decommissioning activities, and 8 soil samples were collected from the former separators (SEP), above-ground storage tanks (AST), and produced water vessel (PWV) locations, at depths ranging from approximately 3 inches to 8 feet below ground surface (bgs). The soil samples were submitted for laboratory analysis of BTEX, 1,2,4- and 1,3,5-TMB, naphthalene, TPH-GRO, DRO, ORO, pH, EC, SAR, and boron, using standard COGCC-approved methods. Additionally, based on field observations and preliminary analytical results, soil sample AST2-B01@3" was selected for waste characterization purposes and was submitted for laboratory analysis of the full COGCC Table 915-1 analytical suite. Laboratory analytical results indicated that soil impacts were present at sample location SEP1-B01@3" due to SAR and EC, and at sample location AST2-B01@3" due to PAHs, barium (Ba), and pH. As such, a Form 19-Initial/Supplemental Spill/Release Report (COGCC Document No. 403307999) was submitted on February 1, 2023, and the COGCC issued Spill/Release Point ID 483792. Analytical results indicated that the remaining constituent concentrations in the soil samples collected during facility decommissioning activities were in compliance with COGCC Table 915-1 standards and/or within the range of site-specific background levels (x 1.25 for metals). Groundwater was not encountered during facility decommissioning or subsequent over-excavation activities. A topographic Site Location Map showing the geographic setting of the site location is provided as Figure 1. Soil sample location and field screening data are presented in Table 1. The soil sample and field screening locations are illustrated on Figures 2 and 3.

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 February 15 through April 5, 2023, excavation activities were conducted to address remaining soil impacts at the former AST and SEP locations. Following over-excavation activities, a total of 7 confirmation soil samples were collected from sidewalls and/or bases of the final excavation extents, at depths ranging from approximately 3 to 6 feet bgs. Based on the analytical results for the waste characterization / initial soil samples (SEP1-B01@3", and AST2-B01@3"), the confirmation soil samples were submitted for laboratory analysis of BTEX, TMB, TPH, PAHs, EC, pH, SAR, and select Table 915-1 metals. Analytical results indicate that constituent concentrations in the confirmation soil samples collected from the final AST and SEP excavation extents were in compliance with COGCC Table 915-1 standards and/or within the range of site-specific background metals concentrations x 1.25. Soil analytical results are summarized in Tables 2 through 5.

Proposed Groundwater Sampling

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

Groundwater was not encountered during facility decommissioning or subsequent over-excavation operations.

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):

On January 26 through April 10, 2023, visual inspection and field screening of soils was conducted at 2 locations below the former ASTs, 4 sidewall locations within the PWV removal excavation area, 5 dump line removal potholes, and 1 sales line removal pothole. Based on the inspection and screening results, hydrocarbon-impacted soil was not observed at the soil screening locations. As a result, no soil samples were submitted for laboratory analysis from these areas in accordance with the COGCC Operator Guidance for Oil & Gas Facility Closure document. Soil sample location and field screening data are presented in Table 1. Soil analytical results are summarized in Tables 2 through 5. The soil sample and field screening locations are illustrated on Figure 2 and 3. The laboratory analytical reports are provided as Attachment A. The field notes and a photographic log are provided as Attachment B.

SITE INVESTIGATION REPORT

SAMPLE SUMMARY

Soil

Number of soil samples collected 19

Number of soil samples exceeding 915-1 6

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

Approximate areal extent (square feet) 400

NA / ND

-- Highest concentration of TPH (mg/kg) 2.28

-- Highest concentration of SAR 9.56

BTEX > 915-1 No

Vertical Extent > 915-1 (in feet) 6

Groundwater

Number of groundwater samples collected 0

Was extent of groundwater contaminated delineated? Yes

Depth to groundwater (below ground surface, in feet)

Number of groundwater monitoring wells installed

Number of groundwater samples exceeding 915-1

 Highest concentration of Benzene (µg/l)

 Highest concentration of Toluene (µg/l)

 Highest concentration of Ethylbenzene (µg/l)

 Highest concentration of Xylene (µg/l)

 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?

Eleven (11) background soil samples were collected from native material adjacent to the former production facility. The background soil samples were submitted for laboratory analysis of the Soil Suitability for Reclamation Parameters and select Table 915-1 metals, using standard COGCC-approved methods appropriate for detecting the target analytes. Analytical results for the background soil samples are presented in Tables 4 and 5.

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 February 15 through April 5, 2023, approximately 10 cubic yards of impacted material were excavated and transported to the Kerr-McGee Land Treatment Facility in Weld County, Colorado for recycling; approximately 70 cubic yards of impacted material were excavated and transported to the Front Range Landfill in Erie, Colorado for disposal. The excavation areas were subsequently backfilled and contoured to match pre-existing site conditions.

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.

Laboratory data indicate that impacted soils in the AST and SEP excavation areas have been remediated to be in compliance with the COGCC Table 915-1 standards and/or within the range of site-specific background metals concentrations x 1.25. Laboratory analytical results indicate that constituent concentrations in the remaining confirmation soil samples collected from the former production facility infrastructure locations were in compliance with COGCC Table 915-1 standards. Hydrocarbon-impacted soil was not observed during field inspection and soil screening activities at the former AST, PWV, DL, and SL locations. Groundwater was not encountered during facility decommissioning or subsequent excavation operations. Based on the analytical and soil screening data presented herein, assessment is complete at this site and no further activities are required. As such, Kerr-McGee is requesting a No Further Action (NFA) determination for this location.

Soil Remediation Summary

In Situ

Ex Situ

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

- Yes Excavate and offsite disposal
- _____ If Yes: Estimated Volume (Cubic Yards) _____ 80
- _____ 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 Final Report

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 10 cubic yards of impacted material were excavated and transported to the Kerr-McGee Land Treatment Facility in Weld County, Colorado for recycling

Volume of E&P Waste (solid) in cubic yards 80

E&P waste (solid) description Impacted Soil

COGCC Disposal Facility ID #, if applicable: 149007

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

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? 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? Yes

Does the previous reply indicate consideration of background concentrations? Yes

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 will be reclaimed in accordance with COGCC 1000 Series Reclamation Rules. Timeliness of reclamation initiation and completion will be subject to NFA, surface owner discretion and land use, and suitable ground conditions which allow for execution of surface reclamation activities so as to not cause unwarranted damages.

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? Yes

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

Did the local soil conservation district provide the seed mix? No

SITE RECLAMATION DATES

Proposed date of commencement of Reclamation. 04/30/2024

Proposed date of completion of Reclamation. 04/30/2024

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. 01/31/2023

Actual Spill or Release date, or date of discovery. 01/31/2023

SITE INVESTIGATION DATES

Date of Initial Actions described in Site Investigation Plan (start date). 01/26/2023

Proposed site investigation commencement. 01/26/2023

Proposed completion of site investigation. 04/10/2023

REMEDIAL ACTION DATES

Proposed start date of Remediation. 01/26/2023

Proposed date of completion of Remediation. 04/05/2023

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

Laboratory analytical results indicate that constituent concentrations in the soil samples collected from the final excavation extents were in compliance with COGCC Table 915-1 standards and/or within the range of site-specific background metals concentrations x 1.25. Based on the analytical and field screening data provided herein, assessment is complete and 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: Gregory Hamilton

Title: Senior Env. Consultant

Submit Date: 04/27/2023

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: 05/23/2023

Remediation Project Number: 25902

COA Type**Description**

| | |
|-------|---|
| | <p>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.</p> <p>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.</p> |
| 1 COA | |

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**

| | |
|-----------|--|
| 403383440 | INVESTIGATION/REMEDATION WORKPLAN (SUPPLEMENTAL) |
| 403383601 | SITE MAP |
| 403384187 | PHOTO DOCUMENTATION |
| 403384189 | SOIL SAMPLE LOCATION MAP |
| 403384190 | ANALYTICAL RESULTS |
| 403384192 | ANALYTICAL RESULTS |
| 403384195 | SOIL SAMPLE LOCATION MAP |
| 403411237 | FORM 27-SUPPLEMENTAL-SUBMITTED |

Total Attach: 8 Files

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

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

Total: 0 comment(s)