

State of Colorado
Energy & Carbon Management Commission

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Document Number:
403963370

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 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: <u>MULL DRILLING COMPANY INC</u>	Operator No: <u>61250</u>	Phone Numbers Phone: <u>(316) 264-6366</u> Mobile: <u>()</u>
Address: <u>1700 N WATERFRONT PKWY B#1200</u>		
City: <u>WICHITA</u>	State: <u>KS</u>	Zip: <u>67206-6637</u>
Contact Person: <u>Risa OBryhim</u>	Email: <u>dustin@mullcompanies.com</u>	

PROJECT, PURPOSE & SITE INFORMATION

PROJECT INFORMATION

Remediation Project #: 26220 Initial Form 27 Document #: 403237522

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: <u>SPILL OR RELEASE</u>	Facility ID: <u>482882</u>	API #: _____	County Name: <u>LINCOLN</u>
Facility Name: <u>Braukmann Farms C Tank Battery</u>	Latitude: <u>39.031853</u>	Longitude: <u>-103.275387</u>	
** correct Lat/Long if needed: Latitude: _____		Longitude: _____	
QtrQtr: <u>SENE</u>	Sec: <u>1</u>	Twp: <u>12S</u>	Range: <u>53W</u> Meridian: <u>6</u> Sensitive Area? <u>Yes</u>

SITE CONDITIONS

General soil type - USCS Classifications SM Most Sensitive Adjacent Land Use Rangeland

Is domestic water well within 1/4 mile? No 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

An unnamed drainage which flows into Sandy Creek is located approximately 0.17 miles west of the Location.

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	< 168 feet by 62 feet by 5 feet bgs	Soil sampling and laboratory 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.

According to records from the Energy & Carbon Management Commission (ECMC), the Location contains one oil and gas well (BRAUKMANN FARMS CORP. #C-1 wellhead; API: 05-073-06106) completed and put into production by Mull Drilling Company, Inc. (Mull) in 1983.. During routine testing of the wellhead on September 8, 2022, a leak in the produced water flowline was discovered off location, directly west of the tank battery which resulted in the release of an unknown amount of produced water, which was reported via ECMC Form 19 (Document 403159645), opening Spill/Release Point ID 482882. This incident is referred to as the "new spill." Additionally, a historic release was discovered along the same flowline to the southwest of the Location. This second release is referred to as the "old spill." Form 27 Document 403237522 was later submitted to open Remediation Project 26220 for the remediation of impacts associated with both identified releases.

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):

Electrical Conductivity (EC) and Sodium Adsorption Ratio (SAR) exceedances have been delineated but remain in place in the investigation area. Mull proposes to remediate EC and SAR impacts in situ and reclaim the surface in accordance with ECMC 1000 Series rules at the Old Spill Location. See Remediation Summary and the attached Report of Work Completed (ROWC) for additional details regarding sample collection and analyses for the Old Spill.

Multiple soil sample locations have Table 915-1 exceedances for EC, SAR, pH and Boron at the New Spill. Mull Proposes to collect step out samples to delineate impacts; proposed soil sample locations in the attached Site Investigation Report.

Proposed Groundwater Sampling

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

In the event that groundwater is encountered during investigative activities, Mull will notify the ECMC and attempt to collect a representative sample for analysis.

Proposed Surface Water Sampling

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

[Empty text box for surface water sampling details]

Additional Investigative Actions

Additional alternative investigative actions described in attached Site Investigation Plan (summary):

[Empty text box for additional investigative actions]

SITE INVESTIGATION REPORT

SAMPLE SUMMARY

Soil

Number of soil samples collected 51

Number of soil samples exceeding 915-1 2

Was the areal and vertical extent of soil contamination delineated? No

Approximate areal extent (square feet) 9000

NA / ND

-- Highest concentration of TPH (mg/kg) 134.6

-- Highest concentration of SAR 84.3

BTEX > 915-1 No

Vertical Extent > 915-1 (in feet) 5

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

NA Highest concentration of Benzene (µg/l)

NA Highest concentration of Toluene (µg/l)

NA Highest concentration of Ethylbenzene (µg/l)

NA 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?

Between September 9, 2022 and September 10, 2024, nine background samples were collected from comparable, nearby, nonimpacted soil to establish native levels of inorganic constituents of concern at the Location. See the attached ROWC for details.

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?

See Proposed Sampling section and the attached ROWC for details.

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.

For the old spill, remaining EC and SAR impacts will be treated in situ and the surface reclaimed in accordance with ECOM 1000 Series rules. New spill impacts will be investigated further.

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.

Subsequent sampling and remedial activities occurred between September 9, 2022 and May 29, 2024. To date, analytical results of soil sampling indicate that values of electrical conductivity (EC), sodium adsorption ratio (SAR), pH, and boron exceed Table 915-1 Residential Soil Screening Levels (RSSLs). Please refer to Documents 403237522, 403360179, and 403842404 and their associate reports for additional site investigation details prior to September 2024.

On August 16, 2024, the ECMC approved a reduced analyte suite of EC, SAR, pH, and boron and an alternative allowable limit for arsenic of 9.625 milligrams per kilogram (mg/kg) via Form 27 Document 403842404.

One surface sample (SL-2@0.5) was collected to recharacterize a previously identified pH exceedance, one soil boring (SB02) was advanced to 3-5 feet bgs to recharacterize boron within sample (OLDSPILL 3' B6 #2), and three delineation soil borings (SB01, SB03, and SB04) were advanced using an environmental drill rig. With the exception of SB02 and SB03, two soil samples were collected from each soil boring: one from the depth of previously observed impacts and one from the terminus of each boring. One soil sample was collected from SB02 and SB03 at at 3-5 and 4-6 feet bgs, respectively. Additionally, one background soil boring (BGN01) was advanced north of the Location in comparable, nearby, non-impacted native soil to establish background soil conditions of inorganics; two soil samples were collected from the soil boring at 3-5 and 8-10 feet bgs. Analytical results of delineation soil samples indicated exceedances of EC, SAR, and pH. Analytical results of the recharacterization sample SB02 exceeded the RSSL for EC and recharacterization sample SL-2 exceeded the RSSLs for SAR and pH. Analytical results of background soil samples indicate native values of pH and boron elevated above RSSLs. See the attached ROWC for additional details.

Soil Remediation Summary

In Situ

Ex Situ

_____ Bioremediation (or enhanced bioremediation)

Yes _____ Excavate and offsite disposal

_____ Chemical oxidation

If Yes: Estimated Volume (Cubic Yards) _____ 1000

_____ Air sparge / Soil vapor extraction

Name of Licensed Disposal Facility or ECMC Facility ID # _____

_____ Natural Attenuation

No _____ Excavate and onsite remediation

_____ Other _____

_____ 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.

Groundwater is not expected to be encountered during this investigation. In the event that groundwater is encountered the ECMC will be immediately notified, and Mull will attempt to collect a representative sample for analysis.

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 Site Investigation Update

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.

Operator is in compliance with Rule 705 insurance requirements as well as Rule 702 Financial Assurance. T

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:

Current impacted soils related to the new spill are being stored in lined berm containment until full assessment is complete. All waste will be disposed of at a certified waste facility - Waste Connections Landfill.

Volume of E&P Waste (solid) in cubic yards 15

E&P waste (solid) description EC and SAR Impacted Soils

ECMC Disposal Facility ID #, if applicable:

Non-ECMC Disposal Facility: Waste Connections Landfill

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

E&P waste (liquid) description 0

ECMC Disposal Facility ID #, if applicable:

Non-ECMC 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? _____

Does the previous reply indicate consideration of background concentrations? _____

Does Groundwater meet Table 915-1 standards? _____

Is additional groundwater monitoring to be conducted? _____

Operator shall comply with the ECMC 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.

For the old spill, residual inorganic impacts will be treated in situ and the surface will be revegetated in accordance with ECMC 1000 Series rules. After agronomic samples are collected additional reclamation planning will be provided. The Surface Owner will be consulted regarding the seed mix.

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? _____

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. 03/01/2025

Proposed date of completion of Reclamation. 03/01/2026

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. 09/08/2022

Actual Spill or Release date, or date of discovery. 09/08/2022

SITE INVESTIGATION DATES

Date of Initial Actions described in Site Investigation Plan (start date). 09/08/2022

Proposed site investigation commencement. 09/08/2022

Proposed completion of site investigation. 12/01/2024

REMEDIAL ACTION DATES

Proposed start date of Remediation. 03/01/2024

Proposed date of completion of Remediation. 12/01/2024

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

Based on statistical results of site specific background samples, Mull requests consideration of ECMC Table 915-1 Footnote 1 to remove pH as a constituent of concern for the project, as all values are well within the range established by the statistical analysis of background samples.

Although a single boron exceedance was noted in (OLDSPILL 3' B6 #2) at 3 feet bgs, this result appeared to be anomalous when compared to the rest of the dataset. Soil boring (SB02) was collected at 3-5 feet bgs to recharacterize the exceedance and analytical results indicated a compliant boron concentration of 1.15 mmhos/cm. Therefore, based on analytical results to date, Mull requests an updated reduced analyte suite of EC and SAR for all future investigations at the Old Spill. See the attached ROWC for details

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

Signed: Amber Barnett

Title: Compliance Specialist

Submit Date: _____

Email: abarnett@ardorenvironmental.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: 26220

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

403964352	ANALYTICAL RESULTS
403964358	ANALYTICAL RESULTS
403964360	ANALYTICAL RESULTS
403964361	ANALYTICAL RESULTS
403982617	SITE INVESTIGATION REPORT

Total Attach: 5 Files

General Comments

User Group

Comment

Comment Date

		Stamp Upon Approval
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Total: 0 comment(s)