

State of Colorado
Energy & Carbon Management Commission

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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 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: NOBLE ENERGY INC	Operator No: 100322	Phone Numbers
Address: 1099 18TH STREET SUITE 1500		Phone: (970) 730-7281
City: DENVER State: CO Zip: 80202		Mobile: ()
Contact Person: Dan Peterson	Email: danpeterson@chevron.com	

PROJECT, PURPOSE & SITE INFORMATION

PROJECT INFORMATION

Remediation Project #: 30386 Initial Form 27 Document #: 403460475

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: LOCATION	Facility ID: 414380	API #: _____	County Name: WELD
Facility Name: COLEMAN C (Multi-Well) 23-04	Latitude: 40.303410	Longitude: -104.525010	
** correct Lat/Long if needed: Latitude: 40.298432		Longitude: -104.527048	
QtrQtr: NWNW	Sec: 23	Twp: 4N	Range: 64W Meridian: 6 Sensitive Area? Yes
Facility Type: SPILL OR RELEASE	Facility ID: 485476	API #: _____	County Name: WELD
Facility Name: Volkens Coleman Tank Battery	Latitude: 40.298549	Longitude: -104.527065	
** correct Lat/Long if needed: Latitude: _____		Longitude: _____	
QtrQtr: NWNW	Sec: 23	Twp: 4N	Range: 64W Meridian: 6 Sensitive Area? Yes

SITE CONDITIONS

General soil type - USCS Classifications SW _____

Most Sensitive Adjacent Land Use Cropland _____

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? Yes _____

Other Potential Receptors within 1/4 mile

Facility within Aquatic Native Species Conservation Waters
Riverine 60ft W
Farm structures 0.02/0.05/0.05/0.08mi S, 0.03mi SE, 0.18/0.19/0.19/0.22/0.24/0.24mi SW
Residential structures 0.04mi S, 0.20mi SW
No other potential receptors are located within 1/4 mile of the site.
Above distances are approximations.

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	Additional Investigation Required	Lab analysis
Yes	SOILS	Additional Investigation Required	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.

A site investigation was conducted pursuant to ECMC Rule 911 at the VOLKENS COLEMAN T4N-R64W-S23 L01 Facility and Tank Battery location.

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):

Grab confirmation soil samples were collected from the produced water vessel(s) excavation, beneath the ground oil tank(s), and at the separator(s). Soil samples were analyzed by a certified laboratory for TPH (total volatile [C6-C10] and extractable [C10-C36] hydrocarbons) organic compounds in soil per ECMC Table 915-1, and EC, SAR, pH, and boron. All samples collected were analyzed by a certified laboratory using approved ECMC laboratory analysis methods.

Proposed Groundwater Sampling

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

Encountered groundwater was sampled for Table 915-1 organic compounds in groundwater.

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):

Visual inspection at the tank battery area occurred during abandonment activities. Field personnel field screened all disturbed areas using visual and olfactory senses to determine if laboratory confirmation sampling was required. The ECMC Tank Battery and Produced Water Vessel Closure Checklists were utilized and filled out during the abandonment process. A photolog is attached.

SITE INVESTIGATION REPORT

SAMPLE SUMMARY

Soil	NA / ND
Number of soil samples collected 42	-- Highest concentration of TPH (mg/kg) 280

Number of soil samples exceeding 915-1 42 -- Highest concentration of SAR 9.83

Was the areal and vertical extent of soil contamination delineated? No BTEX > 915-1 Yes

Approximate areal extent (square feet) 1000 Vertical Extent > 915-1 (in feet) 7

Groundwater

Number of groundwater samples collected 5 ND Highest concentration of Benzene (µg/l)

Was extent of groundwater contaminated delineated? No ND Highest concentration of Toluene (µg/l)

Depth to groundwater (below ground surface, in feet) 8 ND Highest concentration of Ethylbenzene (µg/l)

Number of groundwater monitoring wells installed 5 ND Highest concentration of Xylene (µg/l)

Number of groundwater samples exceeding 915-1 2 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?

Fifteen background soil samples were collected from an area not impacted by oil and gas development and at similar depths and lithologies as confirmation soil samples collected at the location and analyzed for ECMC Table 915-1 metals and soil suitability for reclamation standards (pH, EC, SAR, and Boron). See attached Tables 3 and 4 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?

Elevated concentrations of organics and inorganics were observed in multiple locations at the former Volkens Coleman Tank Battery. The magnitude and extent of soil and groundwater impacts will be delineated via geoprobe. Five soil borings were advanced in each proposed site investigation area, detailed in the attached, to delineate the magnitude and extent of impacts at the site. Additional remedial actions will be evaluated following the completion of the site investigation.

Since groundwater was encountered, the soil boring(s) will be improved with temporary PVC monitoring wells and sampled for all Table 915 constituents in groundwater.

NFA will be requested once four consecutive quarters of groundwater sampling have been completed and reported at the location with concentrations of Table 915 constituents below regulatory limits. As needed, soil and/or groundwater remediation plans will be developed and submitted to ECMC in a supplemental Form 27.

REMEDIAL ACTION PLAN

Does this Supplemental Form 27A include changes to a previously approved Remedial Action Plan? Yes

SOURCE REMOVAL SUMMARY

Describe how source is to be removed.

Impacted soil will be removed from the release area by excavation. The impacted soil will be disposed of at an approved landfill as non-hazardous waste in accordance with Rules 905 and 906. Copies of the waste manifests will be available upon request.

Excavation of impacted soil identified during equipment decommissioning and site investigation is estimated to occur by September 30, 2025.

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.

Soil borings were installed to delineate the vertical and lateral extent of soil impacts at the location during the site investigation on October 15, 2024. Confirmation soil samples were collected and analyzed for the full Table 915 suite. Details of the site investigation are included in the attached laboratory reports and site investigation report. The soil boring(s) were improved with temporary PVC monitoring wells (MW-1 through MW-5) and sampled and analyzed for all Table 915 constituents in groundwater.

Excavation of impacted soil identified during equipment decommissioning and site investigation is estimated to occur by September 30, 2025.

Supplemental Form 27s will be prepared and submitted on a quarterly schedule to provide updates and progress of the remediation until closure criteria have been achieved. As needed, soil and/or groundwater remediation plans will be developed and submitted to ECMC in a supplemental Form 27.

Soil Remediation Summary

In Situ

Ex Situ

_____ Bioremediation (or enhanced bioremediation)

_____ Excavate and offsite disposal

_____ Chemical oxidation

_____ If Yes: Estimated Volume (Cubic Yards) _____

_____ Air sparge / Soil vapor extraction

_____ Name of Licensed Disposal Facility or ECMC Facility ID # _____

_____ Natural Attenuation

_____ 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

Yes _____ 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 will be sampled on a quarterly basis until analytical results are reported with concentrations of Table 915-1 analytes below regulatory limits for four consecutive quarters. Five monitoring wells (MW-1 through MW-5) are sampled on a quarterly basis to monitor (natural) attenuation. Groundwater monitoring wells were sampled and submitted to a laboratory for analysis of Table 915-1 groundwater constituents: Benzene, Toluene, Ethylbenzene, Total Xylenes (BTEX), naphthalene, 1,2,4-Trimethylbenzene, 1,3,5-Trimethylbenzene, Chloride ion, Sulfate ion and Total Dissolved Solids (TDS).

Does Groundwater meet Table 915-1 standards? No

Is additional groundwater monitoring to be conducted? Yes

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.

Reclamation will be in accordance with ECMC 1000 Series Rules.

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. 10/24/2023

Proposed date of completion of Reclamation. 12/31/2027

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. 06/21/2022

Actual Spill or Release date, or date of discovery. 11/10/2023

SITE INVESTIGATION DATES

Date of Initial Actions described in Site Investigation Plan (start date). 10/24/2023

Proposed site investigation commencement. 08/24/2023

Proposed completion of site investigation. 05/31/2025

REMEDIAL ACTION DATES

Proposed start date of Remediation. 05/31/2025

Proposed date of completion of Remediation. 12/31/2026

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:

The proposed date of completion of Remediation has been updated to reflect the proposed remedial excavation and post-excavation groundwater monitoring, if necessary.

OPERATOR COMMENT

This form updates the ECMC with data collected during the site investigation at the location on October 15, 2024. Excavation of impacted soil is estimated to occur by September 30, 2025. The proposed date of completion of Remediation has been updated in the Implementation Schedule section to reflect the proposed remedial excavation and post-excavation groundwater monitoring, if necessary.

This form serves to comply with the Rule 913.e. reporting schedule. The review status of the previously proposed workplans (Doc. # 403906199 and 404008983) are "In Process" on Web Forms. Pending ECMC EPS form review/approval, the Operator will complete the additional site investigation and remediation as outlined on Doc. # 404008983 and this F27. Supplemental Form 27s will be prepared and submitted on a quarterly schedule to provide updates and progress of the remediation until closure criteria have been achieved.

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

Signed: Chris Lattes

Title: Consultant

Submit Date: _____

Email: chrisl@fremontenv.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: 30386

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

404102696	SITE INVESTIGATION REPORT
404102699	ANALYTICAL RESULTS
404102700	ANALYTICAL RESULTS

Total Attach: 3 Files

General Comments

User Group

Comment

Comment Date

		Stamp Upon Approval
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Total: 0 comment(s)