

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

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Document Number:

403985087

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
Contact Person: Dan Peterson	Email: danpeterson@chevron.com	Mobile: ()

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

Remediation Project #: 24344 Initial Form 27 Document #: 403122886

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: TANK BATTERY	Facility ID: 482511	API #:	County Name: WELD
Facility Name: Farr T4N-R64-WS18 L01 482511	Latitude: 40.310498	Longitude: -104.598343	
** correct Lat/Long if needed: Latitude: 40.310689		Longitude: -104.597994	
QtrQtr: NWSW	Sec: 18	Twp: 4N	Range: 64W
Meridian: 6	Sensitive Area?	Yes	

Facility Type: SPILL OR RELEASE	Facility ID: 483538	API #:	County Name: WELD
Facility Name: Farr T4N-R64W-S18	Latitude: 40.310571	Longitude: -104.598336	
** correct Lat/Long if needed: Latitude: _____		Longitude: _____	
QtrQtr: NWSW	Sec: 18	Twp: 4N	Range: 64W
Meridian: 6	Sensitive Area?	Yes	

SITE CONDITIONS

General soil type - USCS Classifications SW _____

Most Sensitive Adjacent Land Use Range Land _____

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

Freshwater Emergent Wetlands 0.01mi N, 0.01mi E
OG Facility 0.2mi S
HWY 0.21mi W

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	65'x40'x13' deep	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 COGCC Rule 911 at the FARR T4N-R64W-S18 L01 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 COGCC Table 915-1, and EC, SAR, pH, and boron. All samples collected were analyzed by a certified laboratory using approved COGCC laboratory analysis methods.

Proposed Groundwater Sampling

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

Groundwater was not encountered during the facility's decommissioning.

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):

AVO

SITE INVESTIGATION REPORT

SAMPLE SUMMARY

Soil

Number of soil samples collected 3

Number of soil samples exceeding 915-1 2

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

NA / ND

-- Highest concentration of TPH (mg/kg) 56

-- Highest concentration of SAR 1.68

BTEX > 915-1 No

Approximate areal extent (square feet) 200

Vertical Extent > 915-1 (in feet) 4

Groundwater

Number of groundwater samples collected 0

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)

ND Highest concentration of Ethylbenzene (µg/l)

Number of groundwater monitoring wells installed

ND Highest concentration of Xylene (µg/l)

Number of groundwater samples exceeding 915-1

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?

Seven background samples were collected on 6/12/2023 from similar depths (4 ft and 12 ft) and lithologies as confirmation samples. The background samples exceeded the Table 915-1 standards for pH, arsenic, and barium.

☐ 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 the Remedial Action Plan section.

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 was removed from the release area by excavation. The impacted soil was 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.

REMEDIAL 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 remediation efforts consisted of the excavation and removal of petroleum-impacted soil directly adjacent to the site's former PWV and AST. The excavation extent measured approximately 65 feet x 40 feet, with a maximum depth of 13 feet below ground surface (bgs). The excavation extent is illustrated on Figures 2 through 5. Groundwater was not encountered within the excavation and is measured at approximately 40 feet deep in the nearest downgradient well (stock) 2,612 feet southeast of the release location (DWR Permit No. 247461).

A total of approximately 1,680 tons (~ 1,200 cubic yards) of petroleum impacted soil was removed from the excavation by 4X during remediation efforts. Impacted soil was disposed of at Buffalo Ridge Landfill in Keenesburg, Colorado as non-hazardous waste, and the excavation was backfilled using clean fill.

Since groundwater was not observed in the excavation, Noble Energy Inc. (Noble) requests the usage of the ECOM Table 915-1 RSSLs based on a separation of approximately 25 feet between groundwater and soil exceeding the PGSSLs preventing a clear pathway for elevated barium, cadmium and selenium concentrations to communicate with groundwater. Noble proposes to leave elevated concentrations of pH in place following a reclamation survey demonstrating elevated concentrations have been horizontally and vertically defined and do not pose a threat to future land use.

Additionally, Noble will resample and analyze arsenic at sidewall sample locations S02@12.0' and S03@12.0' to verify arsenic concentrations are greater or less than the natural variability seen at the location in the background soil samples. Noble will request an NFA be granted if the reanalyzed samples are within the Table 915-1 concentration range.

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) _____ 1200
_____ Name of Licensed Disposal Facility or ECMC Facility ID # _____ 0
_____ 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.

Groundwater was not encountered

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 Supplemental Form 27

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.

Noble intends to directly address the costs of remediation at the locations as part of our asset retirement obligation process and operations. Noble has general liability insurance (policy MWZZ 316714) and financial assurance in compliance with ECMC rules. Records are available on the ECMC's website.

Operator anticipates the remaining cost for this project to be: \$ 3000

WASTE DISPOSAL INFORMATION

Was E&P waste generated as part of this remediation? No

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

No beneficial use

Volume of E&P Waste (solid) in cubic yards 1200

E&P waste (solid) description hydrocarbon impacted soil

ECMC Disposal Facility ID #, if applicable:

Non-ECMC Disposal Facility: Buffalo Ridge Landfill, Keenesburg, CO

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

E&P waste (liquid) description

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? No

Does the previous reply indicate consideration of background concentrations?

Does Groundwater meet Table 915-1 standards? Yes

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.

Reclamation will be in accordance with COGCC 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. 03/31/2025

Proposed date of completion of Reclamation. 03/31/2027

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. 06/23/2022

Actual Spill or Release date, or date of discovery. 12/21/2022

SITE INVESTIGATION DATES

Date of Initial Actions described in Site Investigation Plan (start date). 12/08/2022

Proposed site investigation commencement. 08/15/2022

Proposed completion of site investigation. 03/31/2025

REMEDIAL ACTION DATES

Proposed start date of Remediation. 06/30/2023

Proposed date of completion of Remediation. 07/10/2024

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:

Updated Proposed Completion Date of Site Investigation based on the date that the site investigation was completed. Updated Remedial Action Dates based on the proposed remedial actions summarized in this Form 27.

OPERATOR COMMENT

This form serves to comply with the Rule 913.e. reporting schedule. Pending ECMC approval, location conditions, landowner approval, and crew availability, the Operator will complete the additional site investigation as outlined in this proposed Site Investigation Report workplan prior to the Proposed completion of site investigation date detailed in the Implementation schedule. Work will be scheduled promptly following approval of this form. Supplemental Form 27s will be prepared and submitted on a quarterly schedule to provide updates and progress of the remediation until closure criteria has been achieved.

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

Signed: Ethan Black

Title: Consultant

Submit Date: _____

Email: ethanb@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: 24344

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**

403985151	OTHER
403985154	OTHER
403985156	OTHER
403989055	ANALYTICAL RESULTS
403989056	ANALYTICAL RESULTS
403989057	ANALYTICAL RESULTS
403989058	ANALYTICAL RESULTS
403989059	ANALYTICAL RESULTS
403989060	ANALYTICAL RESULTS
403989061	ANALYTICAL RESULTS
403989062	ANALYTICAL RESULTS
403989063	ANALYTICAL RESULTS
403989064	ANALYTICAL RESULTS
403989065	ANALYTICAL RESULTS

Total Attach: 14 Files

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

		Stamp Upon Approval
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Total: 0 comment(s)