

State of Colorado
Energy & Carbon Management Commission1120 Lincoln Street, Suite 801, Denver, Colorado 80203
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Receive Date:

09/18/2024

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 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: rbueuf27@chevron.com	Mobile: ()

PROJECT, PURPOSE & SITE INFORMATION

PROJECT INFORMATION

Remediation Project #: 22552 Initial Form 27 Document #: 402992008

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: 333177	API #: _____	County Name: WELD
Facility Name: HANSEN BC O-64N67W 1NESE	Latitude: 40.339463	Longitude: -104.832572	
** correct Lat/Long if needed: Latitude: 40.339724		Longitude: -104.830548	
QtrQtr: NESE	Sec: 1	Twp: 4N	Range: 67W Meridian: 6 Sensitive Area? Yes

Facility Type: SPILL OR RELEASE	Facility ID: 485166	API #: _____	County Name: WELD
Facility Name: Hansen BC O-64N67W 1NESE	Latitude: 40.339600	Longitude: -104.830274	
** correct Lat/Long if needed: Latitude: _____		Longitude: _____	
QtrQtr: NESE	Sec: 1	Twp: 4N	Range: 67W Meridian: 6 Sensitive Area? Yes

Facility Type: SPILL OR RELEASE	Facility ID: 488278	API #:	County Name: WELD
Facility Name: Guttersen D 15-24	Latitude: 40.221708	Longitude: -104.537386	
** correct Lat/Long if needed: Latitude:		Longitude:	
QtrQtr: SESW	Sec: 15	Twp: 3N	Range: 64W
Meridian: 6	Sensitive Area?		Yes

SITE CONDITIONS

General soil type - USCS Classifications SW

Most Sensitive Adjacent Land Use Prairie 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

High Priority Habitat - Mule Deer Severe Winter Range
Freshwater Emergent Wetlands 0.06mi N
Riverine 0.18mi SE

DENIED

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
No	GROUNDWATER	NA	Lab analysis if encountered
Yes	SOILS	See attached	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 will be conducted pursuant to ECMC Rule 911 at the HANSEN T4N-R67W-S1 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 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):

Groundwater was not encountered during the site investigation.

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 wellhead 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 applicable ECMC Closure Checklists were utilized and filled out during the abandonment process. A photolog is attached.

SITE INVESTIGATION REPORT

SAMPLE SUMMARY

Soil

Number of soil samples collected 11

Number of soil samples exceeding 915-1 11

NA / ND

-- Highest concentration of TPH (mg/kg) 140

-- Highest concentration of SAR 1.44

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

BTEX > 915-1 No

Approximate areal extent (square feet) 200

Vertical Extent > 915-1 (in feet) 2

Groundwater

Number of groundwater samples collected 0

Highest concentration of Benzene (µg/l)

Was extent of groundwater contaminated delineated? No

Highest concentration of Toluene (µg/l)

Depth to groundwater (below ground surface, in feet)

Highest concentration of Ethylbenzene (µg/l)

Number of groundwater monitoring wells installed

Highest concentration of Xylene (µg/l)

Number of groundwater samples exceeding 915-1

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?

☐ 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? Yes

SOURCE REMOVAL SUMMARY

Describe how source is to be removed.

Impacted soil was removed from the release areas along the HANSEN BC O-64N67W 1NESE (Facility) 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.

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.

Excavation of impacted soil was undertaken to remove impacts observed four feet below ground surface at the former PWV locations. Confirmation soil samples were collected and analyzed for ECOM Table 915 organic and Soil Suitability for Reclamation constituents (TPH, BTEX, 1,2,4 Trimethylbenzene, 1,3,5 Trimethylbenzene, Naphthalene, Polycyclic Aromatic Hydrocarbons [PAHs], pH, SAR, EC, and Boron) and ECOM Table 915-1 metals by a certified laboratory.

Groundwater was discovered in the adjacent FL01-03 excavation and was sampled for BTEX, 1,2,4 Trimethylbenzene, 1,3,5 Trimethylbenzene, Naphthalene. Groundwater was unimpacted and reported with "non-detect" concentrations of Table 915-1 constituents.

Five background characterizations samples were collected in native soil, adjacent to the Hansen facility and flowline and analyzed by a certified laboratory for metals and reclamation and soil suitability with regard to the ECOM Table 915-1 standards. The background samples collected from similar depths and lithologies as the samples collected during the Hansen facility decommissioning determined if elevated concentrations of metals and inorganics are attributable to native concentrations since background concentrations are greater than concentrations observed in the excavation confirmation samples.

No additional active remediation is required following source removal at the location(s), a no further action (NFA) determination is being requested. Since groundwater is unimpacted the Operator is requesting usage of the ECOM Table 915-1 Residential Soil Screening Levels in consideration for closure.

Soil Remediation Summary

☐ In Situ

☒ Ex Situ

<input type="checkbox"/> Bioremediation (or enhanced bioremediation)	<input type="checkbox"/> Yes	Excavate and offsite disposal
<input type="checkbox"/> Chemical oxidation		If Yes: Estimated Volume (Cubic Yards) <input type="text" value="25"/>
<input type="checkbox"/> Air sparge / Soil vapor extraction		Name of Licensed Disposal Facility or ECMC Facility ID # <input type="text"/>
<input type="checkbox"/> Natural Attenuation	<input type="checkbox"/>	Excavate and onsite remediation
<input type="checkbox"/> Other <input type="text"/>		<input type="checkbox"/> Land Treatment
		<input type="checkbox"/> Bioremediation (or enhanced bioremediation)
		<input type="checkbox"/> Chemical oxidation
		<input type="checkbox"/> Other <input type="text"/>

Groundwater Remediation Summary

<input type="checkbox"/> Bioremediation (or enhanced bioremediation)
<input type="checkbox"/> Chemical oxidation
<input type="checkbox"/> Air sparge / Soil vapor extraction
<input type="checkbox"/> Natural Attenuation
<input type="checkbox"/> Other <input type="text"/>

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.

NA

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 Subsequent Report: Excavation Report

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. The cost for remediation is an estimate only, costs may change upwards or downward based on site-specific information. Noble makes no representation or guarantees as to the accuracy of the 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? No

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:

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. _____

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. 02/01/2022

Actual Spill or Release date, or date of discovery. 09/01/2023

SITE INVESTIGATION DATES

Date of Initial Actions described in Site Investigation Plan (start date). 08/22/2023

Proposed site investigation commencement. 04/01/2022

Proposed completion of site investigation. 08/22/2023

REMEDIAL ACTION DATES

Proposed start date of Remediation. 08/22/2023

Proposed date of completion of Remediation. 08/22/2024

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

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: 09/18/2024

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: 22552

COA Type**Description**

0 COA	
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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**

403925414	FORM 27 DENIED
403925441	OTHER
404001028	FORM 27-SUPPLEMENTAL-SUBMITTED

Total Attach: 3 Files

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

Environmental	Analytical data from FL01-03 backfill, (PWV) backfill, FL01-01 backfill soil samples exceed Table 915-1 allowable levels for one or more contaminants of concern. Imported fill material must be in compliance with Table 915-1 Contaminants of Concern. Operator shall remove impacted backfill and obtain clean backfill to be used within the excavations.	11/20/2024
Environmental	ECMC added Spill ID's 488278 and 485166 and selected Rule 913.c.(3): Remediation of Spill and Releases pursuant to Rule 912. in addition to the current selection. Operator shall include this information on all subsequent Supplemental Form 27s for this Remediation Project.	11/20/2024
Environmental	It appears the backfill material used exceeded for both arsenic and chromium. Operator shall remove impacted backfill material and acquire clean backfill to be used within the excavation per Rule	11/20/2024
Environmental	It appears that barium, chromium, lead, and selenium exceed 1.25x background nor are there confirmation samples clearing the exceedances.	11/20/2024
Environmental	The pH of soil samples collected at the Location exceeds the allowable level for Table 915 -1 soil suitability for reclamation. Therefore, Operator will define the extent of soil with elevated pH, and if Operator proposes to leave soil with elevated pH in place, Operator will submit a Reclamation plan pursuant to Rule 915.b.	11/20/2024
Environmental	As it appears that impacted soil was in contact with groundwater at soil sample location FL01-03 B01, the Operator's request for RSSLs is denied and four quarters of groundwater monitoring are required.	11/20/2024

Environmental	Closure request removed. Multiple soil sample locations missing from any Figures including but not limited to the following: PWV01-NW@2', AST01@0-6", AST02@0-6", SEP01-DL@4' and multiple others. These and all other missing soil sample locations shall be included on Figure(s) in the next Form 27-Supplemental for verification purposes.	11/20/2024
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Total: 7 comment(s)

