

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) 313-5582
City: DENVER	State: CO	Zip: 80202
Contact Person: Jason Davidson	Email: jason.davidson@chevron.com	Mobile: ()

PROJECT, PURPOSE & SITE INFORMATION

PROJECT INFORMATION

Remediation Project #: 22536 Initial Form 27 Document #: 402990354

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: WELL	Facility ID: _____	API #: 123-26612	County Name: WELD
Facility Name: HANSEN O 1-23	Latitude: 40.339344	Longitude: -104.832572	
** correct Lat/Long if needed: Latitude: _____		Longitude: _____	
QtrQtr: NESE	Sec: 1	Twp: 4N	Range: 6W
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? No

Other Potential Receptors within 1/4 mile

High Priority Habitat - Mule Deer Severe Winter Range
Freshwater Emergent 0.15mi NE, 0.16mi NW, 0.21mi W, 0.23mi S, 0.16/0.18mi
Riverine 0.21/0.23mi W, 0.23/0.24mi SE, 0.19mi S, 0.2/0.21mi SW
Riparian Herbaceous 0.21mi SW, 0.23mi W
Freshwater Forested/Shrub Wetland 0.22miW, 0.25mi NW, 0.21mi SW, 0.25mi SE
Riparian Forested/Shrub 0.23mi W, 0.19/0.2/0.24mi SW, 0.13/0.17mi S, 0.21/0.23mi SE
No other potential receptors are located within ¼ mile of the Site.
Above distances are approximations.

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	~625 sq. ft.	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.

Pursuant to ECMC Rule 911 a site investigation will be conducted pertaining to the HANSEN O 01-23 wellhead cut and cap and flowline removal. Approximately 308' of flowline was removed. The ECMC will be updated in a supplemental Form 27 when the portion of flowline is abandoned-in-place due to field constraints is removed. The wellhead was cut and capped per ECMC rules. The Flowline Pre-Abandonment Notice Document number was previously included under Related Forms.

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 along the flowline at any points of material change and/or hammer unions, directional changes, as well as at the bell holes on either side of a waterway, AS APPLICABLE to abandonment type. 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. A grab confirmation soil sample will be collected at the wellhead excavation in base of the excavation or the area showing the highest degree of impact during field screening activities at the wellhead excavation. The ECMC will be updated with the results of the wellhead decommissioning activities on a supplemental F27.

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 of the wellhead and flowline areas 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.

SITE INVESTIGATION REPORT

SAMPLE SUMMARY

Soil

Number of soil samples collected 5

Number of soil samples exceeding 915-1 5

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

Approximate areal extent (square feet) 400

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 / ND

-- Highest concentration of TPH (mg/kg) 66

-- Highest concentration of SAR 2.46

BTEX > 915-1 No

Vertical Extent > 915-1 (in feet) 4

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?☐ 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 will be removed from the release areas along the Hansen O 1-23 flowline 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.

REMEDATION 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 FL01-01 and FL01-03 locations. Confirmation soil samples were collected and analyzed for ECMC Table 915-1 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 ECMC Table 915-1 metals by a certified laboratory. Groundwater was discovered in one location (FL01-03) during excavation activities 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 organic constituents.

Elevated concentrations of pH, barium, and arsenic are proposed to be attributed to native soil conditions since concentrations of the elevated constituents (pH, barium, and arsenic) observed in the local background samples are greater than concentrations observed in the excavation confirmation samples. Chromium analytical data for the FL01-01 and FL01-03 excavations were outsourced and analyzed by an unaccredited lab (Elevation Diagnostic). These chromium concentrations exceed the Table 915-1 PGSSLs but were less than the reporting limit (0.3 mg/kg) provided by Summit Scientific which is currently accepted as closure criteria. Since groundwater is unimpacted the Operator is requesting to apply the ECMC Table 915-1 Residential Soil Screening Levels in consideration for closure.

No additional active remediation is required following source removal at the location(s), a no further action (NFA) determination is being requested.

Soil Remediation Summary

☐ In Situ

☒ Ex Situ

_____ Bioremediation (or enhanced bioremediation)

Yes _____ Excavate and offsite disposal

_____ Chemical oxidation

If Yes: Estimated Volume (Cubic Yards) _____ 65

_____ 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

No _____ Bioremediation (or enhanced bioremediation)

No _____ Chemical oxidation

No _____ Air sparge / Soil vapor extraction

No _____ Natural Attenuation

No _____ 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.

One groundwater sample (GW01), collected from the floor of the FL01-03 excavation at 5.5 feet, was submitted to Summit Scientific, Inc. as well for the analyses of organic petroleum constituents' benzene, toluene, ethylbenzene, xylenes (BTEX), 1,2,4-trimethylbenzene; 1,3,5-trimethylbenzene and naphthalene by EPA Method 8260B. The laboratory analysis indicates that the groundwater sample GW01 achieved the ECMC Table 915-1 standards for all organic petroleum constituents analyzed.

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: Timeline 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.

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:

No beneficial use

Volume of E&P Waste (solid) in cubic yards 65

E&P waste (solid) description hydrocarbon impacted soil

ECMC Disposal Facility ID #, if applicable:

Non-ECMC Disposal Facility: Buffalo Ridge Landfill in Keenesburg, Colorado

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? 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 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. 08/05/2025

Proposed date of completion of Reclamation. 08/05/2027

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. 02/01/2022

Actual Spill or Release date, or date of discovery. 09/02/2023

SITE INVESTIGATION DATES

Date of Initial Actions described in Site Investigation Plan (start date). 06/23/2023

Proposed site investigation commencement. 03/30/2022

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. 02/15/2024

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 remedial actions summarized in this Form 27.

OPERATOR COMMENT

Addressing Environmental User Group Comment on Doc. # 403921278:

ENV User Group Comment "ECMC has denied this form as Operator had attempted to redact the Chain of Custody on page 142 in order to hide a sample label "PWV Backfill" Operator shall submit a detailed explanation of what the sample was and why it was attempted to be redacted."

Operator Response: It was not the intent of the Operator to "hide" the (PWV) Backfill sample as evidenced by its inclusion in the tables included as part of the attached of Doc. # 403921278. The (PWV) Backfill sample was a data point collected as part of the produced water vault excavation at the facility and the results did not pertain to the Hansen O 1-23 flowline excavations (see attached Excavation Report for visual reference of sample locations). The consultant had requested the lab to remove the (PWV) Backfill sample and other PWV samples detailed on Pg. 3 of Lab Report 2402290R, for the purposes of clarity to display only data relating to the flowline excavation. The lab redacted the (PWV) Backfill sample and left the other PWV samples on the report. This error was not identified in the consultant's review of the excavation report and was submitted in error on Doc. # 403921278. The Operator has reattached the unredacted version of the lab report in this submission.

The Operator is requesting to leave concentrations of pH, barium, and arsenic exceeding the Table 915-1 concentration standards in place based on the maximum background concentrations of pH, barium, and arsenic exceeding concentrations observed in the decommissioning confirmation samples. Further, VOC and SVOC concentrations are compliant with Table 915-1 standards for all confirmation samples. Therefore, it is suggested that elevated concentrations of constituents of pH, barium, and arsenic reported in the analysis of confirmation soil samples are naturally occurring and not related to oil and gas production activities. Further, groundwater sampled in the FL01-3 excavation is unimpacted the Operator is requesting to apply the ECMC Table 915-1 Residential Soil Screening Levels in consideration for closure.

This form serves as a timeline update to comply with the Rule 913.e. reporting schedule. Decommissioning site investigation fieldwork for the Hansen O 1-23 wellhead and flowline has been completed. The Operator has requested secured lab reports for all data pertaining the the decommissioning activities conducted at this site and will conduct a thorough review of all laboratory analytical reports and data, and submit all data on a supplemental F27. The Operator will contact the ECMC Regional Environmental Protection Specialist (EPS) assigned to the project if data discrepancies are observed. 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: 22536

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

404024477	ANALYTICAL RESULTS
404024481	ANALYTICAL RESULTS
404024488	ANALYTICAL RESULTS
404024507	ANALYTICAL RESULTS
404024526	OTHER
404024545	ANALYTICAL RESULTS

Total Attach: 6 Files

General Comments

User Group

Comment

Comment Date

		Stamp Upon Approval
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Total: 0 comment(s)

Date Run: 12/14/2024 Doc [#404024117]