

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

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Document Number:

404161252

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 #: 32014 Initial Form 27 Document #: 403544697

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 #: 123-30614	County Name: WELD
Facility Name: BARTON C 15-29	Latitude: 40.320466	Longitude: -104.541502	
** correct Lat/Long if needed: Latitude: _____		Longitude: _____	
QtrQtr: SWSW	Sec: 10	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? 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

Freshwater Pond 0.06mi SW

Riverine 0.22mi NE, 0.21mi E, 0.13mi SE, 0.04miS, 0.13/0.19mi SW

Apparent pond 0.03mi S, 0.09mi SW

Residential 0.22mi SW

Farm Structure 0.21mi E, 0.22/0.23mi SW, 0.18/0.19/0.20/0.21/0.22mi W

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	Not Impacted	Confirmation Groundwater Sampling
Yes	SOILS	See Attached Tables and Figures	Field Screening and 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 was conducted pertaining to the BARTON C15-29 wellhead cut and cap and flowline removal. Approximately 832' of flowline was abandoned-in-place due to field constraints. The ECMC was updated in a supplemental Form 27. The wellhead was cut and capped per ECMC rules. Additionally, soil samples were field screened at the N-E-S-W sides of the wellhead. So as to not disturb the area of field constraint, soil samples will be taken at the start and endpoint of the flowline where the area exists. Soil samples were also taken along the flowline any points of material change and/or hammer unions, directional changes, as well as at the bell holes on either side of a waterway.

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):

A grab soil sample was collected at the base of the excavation or the area showing the highest degree of impact during field screening activities at the wellhead excavation. Additionally, soil samples were field screened at the N-E-S-W sides of the wellhead. Soil samples were taken 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. Soil samples were analyzed by a certified laboratory for the full extent of Table 915-1, including but not limited to: TPH (total volatile [C6-C10] and extractable [C10-C36] hydrocarbons) organic compounds in soil per ECMC Table 915-1, and EC, SAR, pH, metals, 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):

A grab groundwater sample was collected during wellhead cut and cap decommissioning activities on 3/19/2024 and was analyzed for all organic compounds in addition to inorganic parameters (TDS, chloride, sulfate, sodium, potassium, bicarbonate, and carbonate (as CaCO₃)) per ECMC Table 915-1.

If any further groundwater is encountered during site investigation activities a grab groundwater sample will be collected and analyzed for all organic compounds and inorganic parameters per ECMC Table 915-1.

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 area occurred during abandonment activities. Field personnel field screened all disturbed areas using visual and olfactory senses to determine if additional laboratory confirmation sampling is required. The ECMC Wellhead 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 8

Number of soil samples exceeding 915-1 7

Was the areal and vertical extent of soil contamination delineated? Yes

Approximate areal extent (square feet) 700

NA / ND

ND Highest concentration of TPH (mg/kg)

-- Highest concentration of SAR 11.9

BTEX > 915-1 No

Vertical Extent > 915-1 (in feet) 6

Groundwater

Number of groundwater samples collected 1

Was extent of groundwater contaminated delineated? Yes

Depth to groundwater (below ground surface, in feet) 5

Number of groundwater monitoring wells installed 0

Number of groundwater samples exceeding 915-1 1

ND Highest concentration of Benzene (µg/l)

ND Highest concentration of Toluene (µg/l)

-- Highest concentration of Ethylbenzene (µg/l) 1.06

ND 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?

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 Table 915-1 metals and SSR constituents. Background soil sample analytical results were reported with elevated levels of pH, SAR, Arsenic (As), Barium (Ba), Cadmium (Ca), Lead (Pb), and Selenium (Se).

BKG Soil Sample Analysis (mg/kg):
pH @ 3ft: Max = 8.82
SAR @ 3ft: Max = 11.2
As @ 3ft: Max*1.25 = 6.06
Ba @ 3ft: Max*1.25 = 138
Se @ 3ft: Max*1.25 = 0.384

☐ 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?

Confirmation samples FL01 2FT, S SEP RISER 3FT and WH01 @6' at the former Barton C 15-29 wellhead and flowline were submitted out of temperature preservation range. Soil will be re-sampled and analyzed for the full Table 915-1 analyte suite at the FL01 2FT, S SEP RISER 3FT and WH01 @6' sample locations at the same depth where the initial confirmation samples were collected in order to confirm initial analytical results. Noble will request a No Further Action (NFA) be granted if the reanalyzed samples comply with the Table 915-1 concentration standard. Background samples will be used to justify elevated concentrations.

Elevated inorganics and metals were observed in multiple locations at the former Barton C 15-29 flowline. Soil will be resampled and analyzed for the full Table 915-1 analyte suite at the FL02 3FT, FL03 3FT, FL04 3FT, FL06 3FT and FL07 3FT sample locations at the same depth where the initial elevated concentrations were observed. Noble will request an NFA be granted if the reanalyzed samples comply with the Table 915-1 concentration standard. Background samples will be used to justify elevated concentrations.

Alternatively, if the sample results exceed the Table 915-1 standards and cannot be attributed to native soil conditions via background soil characterization a minimum of five additional samples will be collected to delineate the magnitude and extent of elevated constituents.

In addition to previously collected background samples, additional local samples will be collected to further characterize native soils.

Refer to the attached site investigation plan for re-sample and additional background sample locations

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.

Impacted soil was not discovered during the wellhead cut and cap activities or during removal of the flowlines. Based on site investigation activities and laboratory analytical results of confirmation soil samples collected from the wellhead excavation floors and flowline risers, along the flowlines, and from the separator flowline riser, removal of soil is not needed. The material excavated during cut and cap and flowline removal activities was used as backfill for the excavations.

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.

Based on site investigation activities and laboratory analytical results for confirmation soil samples collected from the wellhead excavation floors and flowline risers, along the flowlines, and from the separator flowline riser, a remediation plan is not needed.

Soil Remediation Summary

☐ In Situ

☐ Ex Situ

_____ Bioremediation (or enhanced bioremediation)

_____ Chemical oxidation

_____ Air sparge / Soil vapor extraction

_____ Natural Attenuation

_____ Other _____

_____ Excavate and offsite disposal

_____ If Yes: Estimated Volume (Cubic Yards) _____

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

_____ 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 Sample Evaluation and Monitoring Plan Determination

Based on the results of site investigation activities and laboratory analytical data obtained from confirmation groundwater samples collected on March 19, 2024, at a depth of approximately five feet below ground surface (ft bgs), implementation of a groundwater monitoring plan is not warranted at this time.

It is noted, however, that the original sample was submitted outside of the required temperature preservation range. As a result, resampling will be conducted at the same location to ensure data validity. The replacement sample will be analyzed for the full suite of organic compounds, as well as the following inorganic parameters in accordance with ECMC Table 915-1: total dissolved solids (TDS), chloride, sulfate, sodium, potassium, bicarbonate, and carbonate (as CaCO3).

Pending confirmation that the reanalyzed sample results comply with the concentration standards outlined in Table 915-1, Noble intends to submit a request for a No Further Action (NFA) determination.

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 Timeline Update & Supplemental Site Investigation Proposal

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: \$ 50000

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:

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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? No

Is additional groundwater monitoring to be conducted? No

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? Yes

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. 12/01/2023

Proposed date of completion of Reclamation. 04/30/2027

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. 07/20/2023

Actual Spill or Release date, or date of discovery.

SITE INVESTIGATION DATES

Date of Initial Actions described in Site Investigation Plan (start date). 10/14/2023

Proposed site investigation commencement. 12/01/2023

Proposed completion of site investigation. 12/31/2025

REMEDIAL ACTION DATES

Proposed start date of Remediation.

Proposed date of completion of Remediation.

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 implementation schedule has been changed due to the necessity for supplemental site investigation activities adjacent to the former Barton C 15-29 wellhead and flowline. The proposed site investigation will be completed following the approval of this form.

OPERATOR COMMENT

This Form 27 is being submitted as timeline update for the former Barton C 15-29 wellhead and flowline location, which includes updated decommissioning results and proposes a supplemental site investigation.

Supplemental Site Investigation Activities:

The Operator will conduct a supplemental site investigation in accordance with Environmental Compliance Monitoring and Control (ECMC) requirements. Re-sampling will be performed at previously submitted confirmation sample locations where the original samples were submitted outside the required temperature preservation range. These locations include: FL01 2FT, S SEP RISER 3FT, WH01@6'

The purpose of this re-sampling is to confirm the initial analytical results, ensuring compliance with ECMC data quality and accuracy standards.

Additionally, re-sampling will be conducted at the following locations to further assess the presence or absence of elevated inorganic and metal concentrations identified in the initial sampling event: FL02 3FT, FL03 3FT, FL04 3FT, FL06 3FT, FL07 3FT

Local background samples will also be collected to support the characterization of native soil conditions and provide further context for evaluating site-specific data.

Please refer to the proposed Site Investigation Report Workplan and the attached Site Investigation Plan for detailed sample locations and methodologies. The Operator will initiate the supplemental site investigation activities upon approval of this form.

Supplemental Groundwater Investigation:

In addition to the soil investigation, the operator will conduct a supplemental groundwater investigation. A re-sample will be collected from the previously submitted confirmation groundwater sample location—GW01 at the wellhead—due to preservation temperature exceedance. The purpose of this re-sampling is to confirm the initial groundwater analytical results, ensuring compliance with ECMC standards.

Please refer to the proposed Groundwater Monitoring Workplan and the attached Site Investigation Plan for details regarding the groundwater sample location and procedures. The Operator will proceed with this investigation upon approval of this form.

Based on currently available data, this project is not affected by data integrity irregularities and is not associated with Operator's data integrity review process and its Rule 525.e. Voluntary Disclosure. As part of its data integrity review process, Operator requested the labs protect the laboratory analytical reports from subsequent unauthorized modification by anyone outside the labs, which resulted in the labs reissuing the original report with additional protections (Reissued Report). The Reissued Report(s) received directly from the lab on 2/13/2025 (Origins) and 3/29/2025 and 4/4/2025 (Summit) include [if Origins] a watermark confirming both the laboratory representative who reissued the report and the date and time of the reissuance or [if Summit] the application of a Digital ID/Verified Certification (lock) to support reissuance. The metadata associated with the Reissued Report(s) also includes the lab representative's name, the date and time the laboratory reissued the report, and an explanation for the reissuance. The Reissued Reports are attached to this submission as stand alone documents.

In the event additional responsive information is received or discovered that would suggest this project should be incorporated into the ongoing data integrity review process associated with Operator's Rule 525.e. Voluntary Disclosure, Operator will update and/or amend the statements in this submission and provide any new or revised data or other information.

Quarterly reporting will be conducted until closure criteria are achieved for the remediation project. The results of the supplemental site investigation will be submitted on a subsequent Form 27.

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: 32014

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

404161380	ANALYTICAL RESULTS
404161381	ANALYTICAL RESULTS
404161382	ANALYTICAL RESULTS
404161392	SITE INVESTIGATION REPORT

404161394	SITE INVESTIGATION PLAN
404269875	SITE INVESTIGATION REPORT
404269876	LABORATORY ANALYTICAL REPORT

Total Attach: 7 Files

General Comments

<u>User Group</u>	<u>Comment</u>	<u>Comment Date</u>
		Stamp Upon Approval

Total: 0 comment(s)