

State of Colorado
Energy & Carbon Management Commission

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Document Number:
404615080

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 ECOM 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: <u>NOBLE ENERGY INC</u>	Operator No: <u>100322</u>	Phone Numbers
Address: <u>1099 18TH STREET SUITE 1500</u>		Phone: <u>(970) 304-5000</u>
City: <u>DENVER</u> State: <u>CO</u> Zip: <u>80202</u>		Mobile: <u>()</u>
Contact Person: <u>Erica Zuniga</u>	Email: <u>RBUEUF27@chevron.com</u>	

PROJECT, PURPOSE & SITE INFORMATION

PROJECT INFORMATION

Remediation Project #: 36410 Initial Form 27 Document #: 403812730

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: <u>WELL</u>	Facility ID: _____	API #: <u>123-21508</u>	County Name: <u>WELD</u>
Facility Name: <u>LUCCI B 1-23</u>	Latitude: <u>40.424910</u>	Longitude: <u>-104.493610</u>	
** correct Lat/Long if needed: Latitude: _____		Longitude: _____	
QtrQtr: <u>CSE</u> Sec: <u>1</u> Twp: <u>5N</u> Range: <u>64W</u> Meridian: <u>6</u> Sensitive Area? <u>Yes</u>			
Facility Type: <u>SPILL OR RELEASE</u>	Facility ID: <u>488096</u>	API #: _____	County Name: <u>WELD</u>
Facility Name: <u>Lucci B 01-23</u>	Latitude: <u>40.424893</u>	Longitude: <u>-104.493587</u>	
** correct Lat/Long if needed: Latitude: _____		Longitude: _____	
QtrQtr: <u>NWSE</u> Sec: <u>1</u> Twp: <u>5N</u> Range: <u>64W</u> Meridian: <u>6</u> Sensitive Area? <u>Yes</u>			

SITE CONDITIONS

General soil type - USCS Classifications SW _____

Most Sensitive Adjacent Land Use Grassland _____

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

Within Mule Deer Severe Winter Range HPH
Well Within Freshwater Emergent Wetland

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 checked="" 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	Refer to Tables and Figures	Lab Analysis and Field Screening
Yes	SOILS	Refer to Tables and Figures	Lab Analysis and Field Screening

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 LUCCI B 1-23 wellhead cut and cap. Wellhead decommissioning activities and confirmation soil sampling at the LUCCI B 1-23 wellhead occurred on August 16, 2024. The wellhead was cut and capped per ECMC rules. The August 16, 2024, wellhead decommissioning sample results were summarized via supplemental Form 27 document number 403923063.

The Field Qualitative Criteria Checklist was utilized during decommissioning activities and no visual and olfactory impacts were observed. Based on laboratory analytical data, a historical release was reported on September 17, 2024, under F19 Document Number 403923513, for elevated naphthalene, 1-methylnaphthalene, and 2-methylnaphthalene for the Eastern wall of the wellhead excavation. Supplemental source mass removal activities occurred on March 21, 2025.

For further information on the flowline assessment, refer to work completed under Remediation Number 30908.

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. A grab confirmation soil sample was collected at the wellhead excavation, and soil samples were field screened at the N-E-S-W sides of the wellhead. 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. Five soil samples were collected on March 21, 2025 from the N-E-S-W sides of the wellhead and 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 encountered during the site investigation and one grab groundwater sample was collected from the wellhead excavation location on December 10, 2025 and analyzed for full Table 915-1 organic and inorganic constituents in groundwater (Benzene, Toluene, Ethylbenzene, Total Xylenes (BTEX), naphthalene, 1,2,4-Trimethylbenzene, 1,3,5-Trimethylbenzene, Chloride ion, Sulfate ion, and Total Dissolved Solids (TDS) per approved ECMC Table 915-1 Methods.

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 laboratory confirmation sampling was required. The ECMC Wellhead Closure Checklist was utilized and filled out during the abandonment process. A detailed summary of source mass removal and background sampling activities, including field notes, site photos, figures, and laboratory analytical results, was previously attached to Form 27 document number 404498073.

SITE INVESTIGATION REPORT

SAMPLE SUMMARY

Soil

Number of soil samples collected 5
Number of soil samples exceeding 915-1 1
Was the areal and vertical extent of soil contamination delineated? No
Approximate areal extent (square feet) 100

NA / ND

ND Highest concentration of TPH (mg/kg) _____
-- Highest concentration of SAR 8.61
BTEX > 915-1 No
Vertical Extent > 915-1 (in feet) 5

Groundwater

Number of groundwater samples collected 1
Was extent of groundwater contaminated delineated? No
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) _____
ND Highest concentration of Ethylbenzene (µg/l) _____
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?

Three background soil samples were collected on March 21, 2025 and three background soil samples were collected on December 10, 2025 from areas not impacted by oil and gas development and at depths and lithologies (well graded and clayey sands – SW, SC) comparable to those of the confirmation soil samples collected at the location. The samples were analyzed by a certified laboratory for Table 915-1 metals and SSR parameters using ECMC approved Methods. Based on the background analytical results summarized below, the following Table 915-1 metals and SSR parameters were within the maximum observed background values (metals listed in mg/kg):
Arsenic Max*1.25 = 20.5
pH Max = 8.92 s.u.
SAR Max = 38.2
Additional background samples will be collected to determine site specific background concentrations of lead.

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?

A supplemental site investigation (SSI) will be completed to collect additional background samples to determine if elevated levels of lead are attributed to native soil conditions at the site and to install background groundwater monitoring wells to monitor the elevated levels of chloride in groundwater. The proposed groundwater monitoring well locations and background sample locations are included in the Site Map previously attached to Form 27 document number 404498073. Groundwater samples will be analyzed by a certified laboratory for analysis of all inorganic parameters per ECMC Table 915-1. The results of the SSI will be submitted on a subsequent Form 27.

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.

On March 21, 2025, 40 cubic yards of impacted material at the wellhead was removed and hauled to a permitted disposal facility, North Weld Landfill in Ault, CO, in accordance with ECMC Rules 905 and 906. Confirmation samples collected after excavation were analyzed for the full Table 915-1 suite, and results indicated all organic impacts have been removed. Refer to the Remediation Summary and Operator Comment sections for additional work planned to address remaining inorganic impacts. Copies of the waste manifests are available upon request.

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.

A supplemental site investigation (SSI) will be completed to collect additional background samples to determine if elevated levels of lead are attributed to native soil conditions at the site and to install background groundwater monitoring wells to monitor the elevated levels of chloride in groundwater. The proposed groundwater monitoring well locations and background sample locations are included in the Site Map previously attached to Form 27 document number 404498073. Groundwater samples will be analyzed by a certified laboratory for analysis of all inorganic parameters per ECMC Table 915-1. The results of the SSI will be submitted on a subsequent Form 27.

Soil Remediation Summary

In Situ

Ex Situ

_____ Bioremediation (or enhanced bioremediation)

_____ Yes _____ Excavate and offsite disposal

_____ Chemical oxidation

_____ If Yes: Estimated Volume (Cubic Yards) _____ 40

_____ 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

_____ 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 encountered and sampled during site investigation activities. One grab groundwater sample (GW01) was collected at the former wellhead location on December 10, 2025 and was submitted for laboratory analysis of BTEX, TMBs, chloride, sulfate and TDS. Analytical results indicated organic compounds were undetected. The maximum background concentrations with a 1.25x multiplier applied for TDS and sulfate were calculated to be 5676 mg/L and 3275 mg/L, respectively. All TDS and sulfate concentrations observed during groundwater sampling were below 1.25 x max background levels. As such, TDS and sulfate should be considered resolved. Additional background groundwater samples will be collected to determine site specific background concentrations of chloride. An investigation of background inorganics in groundwater will be completed via the proposed 3 monitoring wells.

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

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 (policies MWZZ316714 and MWZX316724) 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? Yes

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 40

E&P waste (solid) description Hydrocarbon impacted soil

ECMC Disposal Facility ID #, if applicable: _____

Non-ECMC Disposal Facility: North Weld Landfill

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? 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? 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. 08/16/2024

Proposed date of completion of Reclamation. 10/31/2027

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. 09/17/2024

Actual Spill or Release date, or date of discovery. 09/16/2024

SITE INVESTIGATION DATES

Date of Initial Actions described in Site Investigation Plan (start date). 08/16/2024

Proposed site investigation commencement. 08/16/2024

Proposed completion of site investigation. 07/20/2026

REMEDIAL ACTION DATES

Proposed start date of Remediation. 03/21/2025

Proposed date of completion of Remediation. 03/21/2025

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 decommissioning of the LUCCI B 1-23 wellhead and necessity for supplemental site investigation activities adjacent to the wellhead. The ECMC will be notified of any update to the implementation schedule on a supplemental Form 27.

OPERATOR COMMENT

This Form 27 is being submitted to include a 2Q 2026 timeline update for the LUCCI B 1-23 wellhead (REM #36410). A supplemental site investigation (SSI) will be completed to collect additional background samples to determine if elevated levels of lead are attributed to native soil conditions at the site and to install background groundwater monitoring wells to monitor the elevated levels of chloride in groundwater. The results of the SSI will be submitted on a subsequent Form 27.

On March 21, 2025, source mass removal was conducted and 40 cubic yards of impacted material at the wellhead was removed and hauled to a permitted disposal facility. Confirmation samples collected after excavation were analyzed for the full Table 915-1 suite, and results indicated all organic impacts have been removed.

Three background soil samples were collected on March 21, 2025 and three background soil samples were collected on December 10, 2025 from areas not impacted by oil and gas development and at depths and lithologies (well graded and clayey sands – SW, SC) comparable to those of the confirmation soil samples collected at the location. The samples were analyzed by a certified laboratory for Table 915-1 metals and SSR parameters using ECMC approved Methods. Based on the background analytical results summarized below, the following Table 915-1 metals and SSR parameters were within the maximum observed background values (metals listed in mg/kg):

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Groundwater was encountered and sampled during site investigation activities. One grab groundwater sample (GW01) was collected at the former wellhead location on December 10, 2025 and was submitted for laboratory analysis of BTEX, TMBs, chloride, sulfate and TDS. Analytical results indicated organic compounds were undetected. The maximum background concentrations with a 1.25x multiplier applied for TDS and sulfate were calculated to be 5676 mg/L and 3275 mg/L, respectively. All TDS and sulfate concentrations observed during groundwater sampling were below 1.25 x max background levels. Additional background groundwater samples will be collected to determine site specific background concentrations of chloride. An investigation of background inorganics in groundwater will be completed via the proposed 3 monitoring wells.

For further information on the flowline assessment, refer to work completed under Remediation Number 30908.

In response to the COA associated with SF 27 Doc #404229700 - The Operator was informed by the laboratory that the sample holding times were exceeded for various Table 915-1 constituents. Because not all analytes would be outside of holding times, the lab ran the samples for the full Table 915 -1 suite. The full laboratory report (Report) is being transmitted to ECMC for transparency. The Report's case narrative identifies which constituents were run outside of the required holding times. The Report's note column also identifies the impacted constituents. Operator will not be relying on any results associated with a constituent that was outside of the required holding time. TDS analyzed by SM 2450C was analyzed outside of the allotted holding time due to delays at Summit Scientific for the groundwater sample collected during the site investigation event on 3/21/2025. Operator's business partner has resampled the affected location with results included in the Form 27, Document Number 404498073.

Pursuant to Rule 913.e, 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: Tahni Jungst, P.E.

Title: Environmental Consultant

Submit Date: _____

Email: CVX-PM@cdhconsult.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: 36410

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

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Total Attach: 0 Files

General Comments

User Group

Comment

Comment Date

		Stamp Upon Approval
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Total: 0 comment(s)