

State of Colorado  
Energy & Carbon Management Commission

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Document Number:  
404172714  
Receive Date:  
05/06/2025  
Report taken by:  
Krystal Heibel

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<br>Phone: (970) 313-5583<br>Mobile: ( ) |
| Address: 1099 18TH STREET SUITE 1500 |                                   |                                                       |
| City: DENVER                         | State: CO                         | Zip: 80202                                            |
| Contact Person: Jason Davidson       | Email: jason.davidson@chevron.com |                                                       |

PROJECT, PURPOSE & SITE INFORMATION

PROJECT INFORMATION

Remediation Project #: 27579 Initial Form 27 Document #: 403258640

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: LOCATION                | Facility ID: 327025                                | API #: _____           | County Name: WELD                         |
| Facility Name: LILLI UNIT-68N58W 6NWSW | Latitude: 40.688660                                | Longitude: -103.912120 |                                           |
|                                        | ** correct Lat/Long if needed: Latitude: 40.688861 | Longitude: -103.912308 |                                           |
| QtrQtr: NWSW                           | Sec: 6                                             | Twp: 8N                | Range: 58W Meridian: 6 Sensitive Area? No |

SITE CONDITIONS

General soil type - USCS Classifications SW Most Sensitive Adjacent Land Use rangeland  
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**

HPH N  
Freshwater Emergent Wetland 0.22mi NE  
NA

**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                   |
|--------------|----------------|----------------------------|----------------------------------|
| UNDETERMINED | GROUNDWATER    | NA                         | Lab Analysis if encountered      |
| Yes          | SOILS          | Refer to Tables and Figure | 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 Lilli Unit 6NWSW gas gathering line abandonment on May 22, 2024. The gas gathering line does not require registration per the latest ECMC flowline regulations, so we are associating this facility closure with the nearest location ID. Approximately 2700' of gas gathering line were abandoned-in-place. The risers samples, which we refer to as 4"Riser3A and 4"Riser3B were cut and capped per ECMC rules. There is no associated Flowline Pre-Abandonment Notice Document number since gathering lines are not registered. Noble proposed to collect soil samples along the gas gathering line at any observed points of material change, hammer unions, directional changes, or bell holes on either side of a waterway and the results will report in a future Supplemental Form 27 under remediation no. 27543.

**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. Additionally, soil samples were collected 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 TPH (total volatile [C6-C10] and extractable [C10-C36] hydrocarbons) Organic Compounds in Soil per ECMC Table 915-1, Table 915-1 Metals, as well as 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 ):

If groundwater is encountered during the site investigation, grab groundwater samples will be collected and analyzed for all organic and inorganic compounds 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 gas gathering line 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. A detailed summary of decommissioning activities, including field notes, site photos, figures, and laboratory analytical results, is attached to this Form 27.

# SITE INVESTIGATION REPORT

## SAMPLE SUMMARY

### Soil

Number of soil samples collected 0  
Number of soil samples exceeding 915-1 0  
Was the areal and vertical extent of soil contamination delineated? Yes  
Approximate areal extent (square feet) 0

### NA / ND

ND Highest concentration of TPH (mg/kg) \_\_\_\_\_  
-- Highest concentration of SAR 1.15  
BTEX > 915-1 No  
Vertical Extent > 915-1 (in feet) 5

### 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 \_\_\_\_\_

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  
0 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?

Fourteen background soil samples were collected from seven discrete soil borings (BKG01-BKG07) adjacent to the gathering line and analyzed for metals in soil per ECMC Table 915-1, as well as pH, SAR, EC, and boron. The background soil samples were collected from depths of approximately 2 to 5 feet below ground surface (ft bgs) and the lithology between the site and background location was observed to be poorly graded to well graded sands. The maximum background concentration for pH was observed to be 8.92. The maximum background concentrations with a 1.25x multiplier applied for arsenic and barium were calculated to be 3.24 mg/kg and 324 mg/kg, respectively. Soil samples BKG02 - BKG07 were run outside of hold time and were not used to calculate background concentrations.

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 re-collect soil samples BH01-BH05 due to the original samples being run by the lab outside of hold time. During the SSI, soil samples will be collected and analyzed for full ECMC Table 915-1 constituents. Concurrently with the SSI, background samples will be re-collected to determine if pH, arsenic, and barium are attributed to native soil conditions at the site. The SSI will be completed in accordance with the proposed implementation schedule, and the results of the SSI will be submitted on a subsequent Form 27.

Based on ECMC approval of Form 27 document number 403946446, all confirmation sampling along the gathering line will be reported under remediation number 27543. A supplemental site investigation (SSI) will be completed to collect samples along the flowline every 250' as well as at points of material change and/or hammer unions, directional changes, as well as the bell holes on either side of a water way. During the SSI, soil samples will be collected and analyzed for full ECMC Table 915-1 constituents. Concurrently with the SSI, additional background samples will be collected along the ABIP gas gathering line to determine if pH is attributed to native soil conditions at the site. The SSI will be completed in accordance with the proposed implementation schedule, and 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.

No impacted material caused by oil and gas operations has been identified at this time.

## 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.

A Site Assessment was conducted on 11/19/2024 to delineate pH, during which five soil borings were advanced. BH01 was advanced at the same location as soil sample 4" Riser3B@3' to vertically delineate impacts at that location. BH02-BH05 were advanced surrounding BH01 to vertically and laterally delineate impacts identified at 4" Riser3B@3'. Soil samples were collected and analyzed for full ECMC Table 915-1 constituents. Groundwater was not encountered during this assessment. Soil boring samples BH01@2-3' was collected from the same location as soil sample 4" Riser3B@3'. Due to these samples being run by the lab outside of hold time, a supplemental site investigation (SSI) will be conducted to recollect soil samples BH01-BH05 and BKG02-BKG07, in accordance with the attached proposed site investigation map, and proposed sampling plan outlined in the Site Investigation Report section of this Form 27.

An additional SSI to collect samples along the flowline every 250' as well as at points of material change and/or hammer unions, directional changes, as well as the bell holes on either side of a water way will be completed under remediation number 27543, as stated on approved Form 27 document number 403946446.

## Soil Remediation Summary

In Situ

Ex Situ

\_\_\_\_\_ Bioremediation ( or enhanced bioremediation )

\_\_\_\_\_ Excavate and offsite disposal

\_\_\_\_\_ Chemical oxidation

\_\_\_\_\_ If Yes: Estimated Volume (Cubic Yards) \_\_\_\_\_

\_\_\_\_\_ 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 not encountered during decommissioning or supplemental site investigation activities.

# 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 Confirmation Sample Summary & 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 (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? 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? \_\_\_\_\_

Does the previous reply indicate consideration of background concentrations? \_\_\_\_\_

Does Groundwater meet Table 915-1 standards? \_\_\_\_\_

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 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. 05/22/2024

Proposed date of completion of Reclamation. 10/22/2026

## 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. \_\_\_\_\_

Actual Spill or Release date, or date of discovery. \_\_\_\_\_

### SITE INVESTIGATION DATES

Date of Initial Actions described in Site Investigation Plan (start date). 05/22/2024

Proposed site investigation commencement. 05/01/2025

Proposed completion of site investigation. 11/01/2025

### REMEDIAL ACTION DATES

Proposed start date of Remediation. 11/01/2025

Proposed date of completion of Remediation. 05/01/2026

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 site assessment of the Lilli Unit 6NWSW gathering line and necessity for additional supplemental site investigation activities adjacent to the gas gathering line. The proposed site investigation will be completed following the approval of this form.

## OPERATOR COMMENT

This Form 27 is being submitted as a summary of the November 2024 site investigation results for the former Lilli Unit 6NWSW gas gathering line location.

A site assessment was conducted on 11/19/24 to delineate pH, during which 5 soil borings were advanced. BH01 was advanced at the same location as soil sample 4"Riser3B@3' to resample and vertically delineate pH at that location. BH02-BH05 were advanced surrounding BH01 to vertically and laterally delineate impacts pH at 4"Riser3B@3'. Soil samples were collected & analyzed for full ECMC Table 915-1 constituents. Groundwater was not encountered during this assessment. Soil boring samples BH01@2-3' was collected from the same location as soil sample 4" Riser3B@3'.

Fourteen background soil samples were collected from seven discrete soil borings (BKG01-BKG07) adjacent to the gathering line and analyzed for metals in soil per ECMC Table 915-1, as well as pH, SAR, EC, and boron. The background soil samples were collected from depths of approximately 2 to 5 feet below ground surface (ft bgs) and the lithology between the site and background location was observed to be poorly graded to well graded sands. The maximum background concentration for pH was observed to be 8.92. The maximum background concentrations with a 1.25x multiplier applied for arsenic and barium were calculated to be 3.24 mg/kg and 324 mg/kg, respectively. Soil samples BKG02 - BKG07 were run outside of hold time and were not used to calculate background concentrations.

A supplemental site investigation (SSI) will be completed to re-collect the soil samples (BH01-BH05, BKG02-BKG07) run outside of hold-time following the November 2024 SSI. The proposed site investigation is summarized in the Site Investigation Report section of this Form 27

An SSI will be conducted to sample along the flowline (250' & at direction turns). The proposed site investigation is summarized in the Site Investigation Report section of this Form 27 and will be conducted under Rem# 27543.

A technical review of the lab analytical data associated with this Site was conducted. This review was conducted by our environmental consultant's internal Compliance Team, working independently of the Site Project Team. The review consisted of: verification of receipt of locked/encrypted lab report(s) from the contract analytical lab(s); evaluation and verification that reported laboratory results are consistent with the data presented throughout the eForm text, tables, & figures.

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 lab protect the laboratory analytical report from subsequent modification by anyone outside the lab, which resulted in the lab reissuing the original report with the additional protections (Reissued Report). The Reissued Reports were received directly from the lab (Summit) on 4/1/2025 (2411349) and 4/2/2025 (2405355) which includes the application of a Digital ID/Verified Certification (lock) to support reissuance. The metadata associated with the Reissued Reports also include the lab representative's name, the date & time the lab reissued the report, & an explanation for the report reissuance. The Reissued Reports are attached to this submission.

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.

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

Signed: Elizabeth Brauer

Title: Environmental Consultant

Submit Date: 05/06/2025

Email: tas-chevron-4@tasman-geo.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: Krystal Heibel

Date: 10/16/2025

Remediation Project Number: 27579

## COA Type

## Description

| COA Type | Description                                                                                                                     |
|----------|---------------------------------------------------------------------------------------------------------------------------------|
| 1 COA    | Operator shall fully populate the implementation schedule in accordance with Rule 913.d on the subsequent Supplemental Form 27. |

## 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

| Att Doc Num | Name                           |
|-------------|--------------------------------|
| 404172714   | FORM 27-SUPPLEMENTAL-SUBMITTED |
| 404172740   | ANALYTICAL RESULTS             |
| 404172742   | ANALYTICAL RESULTS             |
| 404186625   | SITE INVESTIGATION REPORT      |

Total Attach: 4 Files

## General Comments

| <u>User Group</u> | <u>Comment</u>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | <u>Comment Date</u> |
|-------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|
| Environmental     | <p>"An additional SSI to collect samples along the flowline every 250' as well as at points of material change and/or hammer unions, directional changes, as well as the bell holes on either side of a water way will be completed under remediation number 27543, as stated on approved Form 27 document number 403946446."</p> <p>"A supplemental site investigation (SSI) will be completed to re-collect soil samples BH01-BH05 due to the original samples being run by the lab outside of hold time. During the SSI, soil samples will be collected and analyzed for full ECMC Table 915-1 constituents. Concurrently with the SSI, background samples will be re-collected to determine if pH, arsenic, and barium are attributed to native soil conditions at the site. The SSI will be completed in accordance with the proposed implementation schedule, and the results of the SSI will be submitted on a subsequent Form 27. "</p> | 10/16/2025          |

Total: 1 comment(s)