

State of Colorado  
Energy & Carbon Management Commission

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Document Number:  
403978898  
Receive Date:  
11/07/2024  
Report taken by:  
Kilian Collins

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            | <b>Phone Numbers</b>  |
| Address: 1099 18TH STREET SUITE 1500 |                                | Phone: (970) 730-7281 |
| City: DENVER State: CO Zip: 80202    |                                | Mobile: ( )           |
| Contact Person: Dan Peterson         | Email: danpeterson@chevron.com |                       |

PROJECT, PURPOSE & SITE INFORMATION

PROJECT INFORMATION

Remediation Project #: 31492 Initial Form 27 Document #: 403523340

PURPOSE INFORMATION

- Rule 913.c.(1): Pit or Cuttings Trench closure.
- Rule 913.c.(2): Buried or partially buried vessel closure, which will be by removal.
- Rule 913.c.(3): Remediation of Spill and Releases pursuant to Rule 912.
- Rule 913.c.(4): Land treatment of Oily Waste pursuant to Rule 905.e.
- Rule 913.c.(5): Closure of Centralized E&P Waste Management Facilities pursuant to Rule 907.h.
- Rule 913.c.(6): Remediation of impacted Groundwater pursuant to Rule 915.e.(3).D, and the contaminant concentrations in Table 915-1.
- Rule 913.c.(7): Investigation and remediation of natural gas in soil or Groundwater.
- Rule 913.c.(8): When requested by the Director due to any potential risk to soil, Groundwater, or surface water.
- Rule 913.c.(9): Decommissioning of Oil and Gas Facilities.
- Rule 913.g: Changes of Operator.
- Rule 915.b: Request to leave elevated inorganics in situ.
- Other: \_\_\_\_\_

SITE INFORMATION

Yes Multiple Facilities

|  |                     |                        |  |
|--|---------------------|------------------------|--|
| Facility Type: LOCATION                            | Facility ID: 329983 | API #: _____           | County Name: WELD                          |
| Facility Name: STATE C-64N64W 36NWNW               | Latitude: 40.272840 | Longitude: -104.504880 |  |
| ** correct Lat/Long if needed: Latitude: 40.273258 |                     | Longitude: -104.505520 |  |
| QtrQtr: NWNW                                       | Sec: 36             | Twp: 4N                | Range: 64W Meridian: 6 Sensitive Area? Yes |
| Facility Type: SPILL OR RELEASE                    | Facility ID: 487552 | API #: _____           | County Name: WELD                          |
| Facility Name: State 36-0514                       | Latitude: 40.273334 | Longitude: -104.505766 |  |
| ** correct Lat/Long if needed: Latitude: _____     |                     | Longitude: _____       |  |
| QtrQtr: NWNW                                       | Sec: 36             | Twp: 4N                | Range: 64W Meridian: 6 Sensitive Area? Yes |

**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? No \_\_\_\_\_

Is groundwater less than 20 feet below ground surface? No \_\_\_\_\_

**Other Potential Receptors within 1/4 mile**

NA



# 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                                   |
|--------------|----------------|---------------------------------|--|
| UNDETERMINED | GROUNDWATER    | NA                              | Lab Analysis or Field Screening, if encountered. |
| Yes          | SOILS          | 10'x10'x5' below ground surface | 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.

A site investigation was conducted pursuant to ECMC Rule 911 at the AVA ST T4N-R64W-S36 L04 Facility and Tank Battery location.

## PROPOSED SAMPLING PLAN

### Proposed Soil Sampling

Will soil samples be collected as part of this investigation? ( Number, type (grab/composite), analyses, and locations of samples ):

Grab confirmation soil samples were collected from the produced water vessel(s) excavation, beneath the ground oil tank(s), and at the risers for the flowline(s) and dumpline(s) of any separator(s). 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 ):

If groundwater is encountered during the site investigation a grab groundwater will be collected and analyzed for all organic 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 at the tank battery 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 Tank Battery and Produced Water Vessel Closure Checklists were utilized and filled out during the abandonment process. A detailed summary of decommissioning activities, including field notes, site photos, figures, and laboratory analytical results, was attached to the subsequent Form 27 (Document No. 403639819).

# SITE INVESTIGATION REPORT

## SAMPLE SUMMARY

### Soil

Number of soil samples collected 5

Number of soil samples exceeding 915-1 \_\_\_\_\_

### NA / ND

ND Highest concentration of TPH (mg/kg) \_\_\_\_\_

-- Highest concentration of SAR 12.9

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

BTEX &gt; 915-1 No

Approximate areal extent (square feet) 100

Vertical Extent &gt; 915-1 (in feet) 14

**Groundwater**

Number of groundwater samples collected 0

Highest concentration of Benzene (µg/l)

Was extent of groundwater contaminated delineated? No

Highest concentration of Toluene (µg/l)

Depth to groundwater (below ground surface, in feet)

Highest concentration of Ethylbenzene (µg/l)

Number of groundwater monitoring wells installed

Highest concentration of Xylene (µg/l)

Number of groundwater samples exceeding 915-1

Highest concentration of Methane (mg/l)

**Surface Water**

0 Number of surface water samples collected

Number of surface water samples exceeding 915-1

If surface water is impacted, other agency notification may be required.

**OTHER INVESTIGATION INFORMATION** Were impacts to adjacent property or offsite impacts identified? Were background samples collected as part of this site investigation?

Two background soil samples were collected on 12/4/2023 and analyzed for metals in soil per ECMC Table 915-1, and two background samples were collected on 6/24/2024 and analyzed for metals in soil per ECMC Table 915-1 and pH. Background soil samples were collected from depths ranging between 2.5 to 5 feet below ground surface (ft bgs) and the lithology between the site and background locations were observed to be well graded sands. Additional background samples will be collected during the proposed supplemental site investigation from depths that better correlate with the remedial excavation confirmation soil samples.

 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 vertically and horizontally delineate the inorganic compound exceedances observed at sample locations AST01@0.5', FS01@14', SS01@13', SS02@13', SS03@13', and SS04@13' during the decommissioning and the June 25, 2024 remedial excavation. A proposed SSI map is attached to this Form 27. During the SSI, soil samples will be collected and analyzed for full ECMC Table 915-1 constituents. Additionally, excavation confirmation soil sample SS01@13' will be recollected to verify the boron exceedance observed at that location.

Concurrently with the SSI, additional background samples will be collected and analyzed for metals in soil per ECMC Table 915-1, pH, EC, SAR, and boron. 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.

The source identified at FS01@5' was successfully removed during the June 25, 2024 remedial excavation. The remedial excavation measured approximately 20 feet (ft) long by 18-ft wide, and reached terminal depths of 14-ft below ground surface (bgs). A total of approximately 190 cubic yards (CY) of soil was transported to the Waste Management Buffalo Ridge landfill for disposal. The analytical tables, figures, and laboratory reports from the samples collected during the remedial excavation and background sampling activities is attached to this Form 27. Based on these results, all soil impacted with organic compounds was successfully removed from the remediation area. Inorganic compounds (pH, SAR, and boron) and arsenic were observed the the confirmation soil samples (SS01@13'-SS04@13' and FS01@14') above ECMC Table 915-1 standards and existing background levels.

**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 vertically and horizontally delineate the inorganic compound exceedances observed at sample locations AST01@0.5', FS01@14', SS01@13', SS02@13', SS03@13', and SS04@13' during the decommissioning and the June 25, 2024 remedial excavation. A proposed SSI map is attached to this Form 27. During the SSI, soil samples will be collected and analyzed for full ECMC Table 915-1 constituents. Additionally, excavation confirmation soil sample SS01@13' will be recollected to verify the boron exceedance observed at that location.

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### Soil Remediation Summary

In Situ

Ex Situ

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

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

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

If Yes: Estimated Volume (Cubic Yards) \_\_\_\_\_ 190

\_\_\_\_\_ 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.

# 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 Remedial Excavation Sample Summary & SSI 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? 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  190

E&P waste (solid) description  Soil

ECMC Disposal Facility ID #, if applicable:

Non-ECMC Disposal Facility:  Waste Management Buffalo Ridge 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?

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 reseeded 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. 12/04/2023

Proposed date of completion of Reclamation. 08/01/2026

## 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. 08/31/2023

Actual Spill or Release date, or date of discovery. 12/28/2023

### SITE INVESTIGATION DATES

Date of Initial Actions described in Site Investigation Plan (start date). 12/04/2023

Proposed site investigation commencement. 11/04/2024

Proposed completion of site investigation. 08/04/2025

### REMEDIAL ACTION DATES

Proposed start date of Remediation. 08/04/2025

Proposed date of completion of Remediation. 02/04/2026

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 completion of the June 2024 remedial excavation at the State 36-0514 tank battery location and necessity for additional supplemental site investigation activities adjacent to the tank battery. The proposed site investigation will be completed following the approval of this form, landowner negotiations, and crew availability.

## OPERATOR COMMENT

This Form 27 is being submitted to include a summary of the June 2024 remedial excavation and background sampling conducted at the State 36-0514 Tank Battery.

The source identified at FS01@5' was successfully removed during the June 25, 2024 remedial excavation. The remedial excavation measured approximately 20 feet (ft) long by 18-ft wide, and reached terminal depths of 14-ft below ground surface (bgs). A total of approximately 190 cubic yards (CY) of soil was transported to the Waste Management Buffalo Ridge landfill for disposal. The analytical tables, figures, and laboratory reports from the samples collected during the remedial excavation and background sampling activities is attached to this Form 27. Based on these results, all soil impacted with organic compounds was successfully removed from the remediation area. Inorganic compounds (pH, SAR, and boron) and arsenic were observed in confirmation soil samples (SS01@13'-SS04@13' and FS01@14') above ECMC Table 915-1 standards and existing background levels.

A supplemental site investigation (SSI) will be completed to vertically and horizontally delineate the inorganic compound exceedances observed at sample locations AST01@0.5', FS01@14', SS01@13', SS02@13', SS03@13', and SS04@13' during the decommissioning and the June 25, 2024 remedial excavation. A proposed SSI map is attached to this Form 27. During the SSI, soil samples will be collected and analyzed for full ECMC Table 915-1 constituents. Additionally, excavation confirmation soil sample SS01@13' will be recollected to verify the boron exceedance observed at that location.

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Quarterly reporting will be conducted until closure criteria are achieved for the remediation project. The results of the SSI 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: Allan Engelhardt

Title: Environmental Consultant

Submit Date: 11/07/2024

Email: tas-chevron-3@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: \_\_\_\_\_

Date: \_\_\_\_\_

Remediation Project Number: 31492

## COA Type

## Description

| 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

|           |                                |
|-----------|--------------------------------|
| 403978898 | FORM 27-SUPPLEMENTAL-SUBMITTED |
| 403980355 | SITE INVESTIGATION PLAN        |
| 403980360 | REMEDATION PROGRESS REPORT     |

Total Attach: 3 Files

## General Comments

| <u>User Group</u> | <u>Comment</u>   | <u>Comment Date</u> |
|-------------------|--|---------------------|
| Environmental     | ECMC has denied this Form 27 for data validation. Operator will provide laboratory analytical report(s) as a stand-alone attachment(s) on the replacement Supplemental Form 27. The Laboratory Report PDF(s) must be secured by the issuing laboratory; If there is a difference between the creation date and secured date of the PDF, Operator shall provide an explanation in the case narrative of the associated report. ECMC will not review combined PDFs with lab reports. | 02/17/2025          |

Total: 1 comment(s)

