

State of Colorado  
Energy & Carbon Management Commission1120 Lincoln Street, Suite 801, Denver, Colorado 80203  
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10/19/2023

Report taken by:

RICK ALLISON

## 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 COGCC 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: 2001 16TH STREET SUITE 900 |                             | Phone: (715) 562-0251 |
| City: DENVER                        | State: CO                   | Zip: 80202            |
| Contact Person: Dan Peterson        | Email: rbueuf27@chevron.com | Mobile: ( )           |

## PROJECT, PURPOSE &amp; SITE INFORMATION

## PROJECT INFORMATION

Remediation Project #: 20470 Initial Form 27 Document #: 402837667

## 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: 323751 | API #: _____           | County Name: WELD                          |
| Facility Name: PETRIKIN-66N64W 34SENE              | Latitude: 40.444690 | Longitude: -104.529190 |  |
| ** correct Lat/Long if needed: Latitude: 40.446200 |                     | Longitude: -104.529691 |  |
| QtrQtr: SENE                                       | Sec: 34             | Twp: 6N                | Range: 64W Meridian: 6 Sensitive Area? Yes |

  

|  |                     |                        |  |
|--|---------------------|------------------------|--|
| Facility Type: SPILL OR RELEASE                | Facility ID: 481756 | API #: _____           | County Name: WELD                          |
| Facility Name: Petrikin A34-8 Tank Battery     | Latitude: 40.446231 | Longitude: -104.529526 |  |
| ** correct Lat/Long if needed: Latitude: _____ |                     | Longitude: _____       |  |
| QtrQtr: NESE                                   | Sec: 34             | Twp: 6N                | Range: 64W Meridian: 6 Sensitive Area? Yes |

## SITE CONDITIONS

General soil type - USCS Classifications SW

Most Sensitive Adjacent Land Use Crop Land

Is domestic water well within 1/4 mile? Yes

Is surface water within 1/4 mile? Yes

Is groundwater less than 20 feet below ground surface? No

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

Industrial 0.05mi N  
Freshwater Emergent Wetlands 0.03mi W  
Riverine 0.03mi W, 0.13mi SW  
Residential 0.23mi NE

**DENIED**

## 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      |
|-----------|----------------|----------------------|---------------------|
| Yes       | SOILS          | 10' x 10' x 6.5' bgs | Laboratory 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.

A site investigation will be conducted pursuant to COGCC Rule 911 at the PETRIKIN T6N-R64W-S34 L04 Tank Battery location. Laboratory analytical indicated a historical release at the Petrikin A34-08 decommissioned tank battery. One soil sample exceeded COGCC standards for 1-methylnaphthalene at 0.0983 mg/kg, and 2-methylnaphthalene at 0.0514 mg/kg.

### 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 ):

Seven grab confirmation soil samples were collected from the produced water vessel(s) excavation, beneath the ground oil tank(s), and at the separator (s). Soil samples will be analyzed by a certified laboratory for TPH (total volatile [C6-C10] and extractable [C10-C36] hydrocarbons), organic compounds in soil per COGCC Table 915-1, and EC, SAR, pH, and boron. Additionally, soil sample FS01@5' was analyzed for Table 915-1 metals.

#### Proposed Groundwater Sampling

- ☐ Will groundwater samples be collected as part of this investigation? ( Number, analyses, and locations of samples ):

#### 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 ):

A Site Assessment was conducted on 2/27/2023 and 2/28/2023 to delineate impacted media. Six soil borings were advanced in the area of impacts. BH01 was advanced at the same location as the waste characterization sample FS01@5' to vertically delineate impacts at that location. BH02-BH05 were advanced surrounding BH01 to vertically and laterally delineate impacts identified at FS01@5'. Soil samples were collected and analyzed for TPH (total volatile [C6-C10] and extractable [C10-C36] hydrocarbons), organic compounds in soil, metals in soil per COGCC Table 915-1, and EC, SAR, pH, and boron. Groundwater was not encountered during this assessment.

## SITE INVESTIGATION REPORT

### SAMPLE SUMMARY

#### Soil

Number of soil samples collected      21

Number of soil samples exceeding 915-1      11

#### NA / ND

-- Highest concentration of TPH (mg/kg)      488

-- Highest concentration of SAR      17.5

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

BTEX > 915-1 No

Approximate areal extent (square feet) 100

Vertical Extent > 915-1 (in feet) 7

#### 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?

A total of eleven background samples were collected from six discrete locations and analyzed for arsenic, barium, lead, selenium, and SAR. The average background concentrations of arsenic, barium, lead, and selenium with a 1.25 multiplier applied were calculated to be 8.02 milligrams per kilogram (mg/kg), 27.2 mg/kg, 12.3 mg/kg, and 1.53 mg/kg, respectively. The average release area concentrations of arsenic, barium, lead, and selenium were calculated to be 6.14 mg/kg, 32.0 mg/kg, 10.3 mg/kg, and 1.14 mg/kg, respectively. Average background concentrations for arsenic, lead, and selenium were all calculated to be higher than their average concentrations in the soil boring samples. As such, arsenic, lead, and selenium should not be considered contaminants of concern at the Site.

☐ Was investigation derived waste (IDW) generated as part of this investigation?

Volume of solid waste (cubic yards)

Volume of liquid waste (barrels)

☐ Is further site investigation required?

### REMEDIAL ACTION PLAN

Does this Supplemental Form 27A include changes to a previously approved Remedial Action Plan? No

#### SOURCE REMOVAL SUMMARY

Describe how source is to be removed.

The source was delineated through an environmental site assessment conducted on 2/27/2023 and 2/28/2023. A pathway to groundwater was not identified at the site. Since a pathway to groundwater was not identified, Noble proposes to apply ECMC Table 915-1 Residential Soil Screening Levels (RSSLs) when evaluating soil analytical results. Since all organic compounds, inorganic compounds, and metals in soil are either below ECMC Table 915-1 RSSLs or established background levels, and since the pH exceedances observed are within natural variability in the region (refer to the Results section of the attached Site Assessment Report), Noble is requesting a No Further Action (NFA) designation for the Site from the ECMC.

#### 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.

The source will be left in place, pending the ECMC approval to apply Table 915-1 RSSLs to the site.

#### 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  
\_\_\_\_\_ Natural Attenuation  
\_\_\_\_\_ Other \_\_\_\_\_

\_\_\_\_\_ Name of Licensed Disposal Facility or COGCC 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.

## 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 Schedule Update

### Adequacy of Operator's General Liability Insurance and Financial Assurance

Describe the adequacy of the Operator's general liability insurance and Financial Assurance to fully address the anticipated costs of Remediation, including the estimated remaining cost for this project (below).

If this information has been provided on a Form 27 within the last 12 months, provide the Document Number of that form.

Noble intends to directly address the costs of remediation at the locations as part of our asset retirement obligation process and operations. Noble has general liability insurance (policy MWZZ 316714) and financial assurance in compliance with COGCC rules. Records are available on the COGCC'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

COGCC Disposal Facility ID #, if applicable:

Non-COGCC Disposal Facility:

Volume of E&P Waste (liquid) in barrels

E&P waste (liquid) description

COGCC Disposal Facility ID #, if applicable:

Non-COGCC Disposal Facility:

## REMEDIATION COMPLETION REPORT

### REMEDIATION COMPLETION SUMMARY

Is this a Final Closure Request for this Remediation Project? Yes

If YES:

☒ Compliant with Rule 913.h.(1).☐ Compliant with Rule 913.h.(2).☐ Compliant with Rule 913.h.(3).

Do all soils meet Table 915-1 standards? Yes

Does the previous reply indicate consideration of background concentrations? Yes



Does Groundwater meet Table 915-1 standards? Yes

Is additional groundwater monitoring to be conducted? \_\_\_\_\_

Operator shall comply with the COGCC 1000-Series Reclamation Requirements for all impacted and disturbed areas.

## RECLAMATION PLAN

### RECLAMATION PLANNING

Describe reclamation plan. Discuss existing and new grade recontouring; method and testing of compaction alleviation; and reseeding program, including location of new seed, seed mix and noxious weed prevention. Attach diagram or drawing.

Reclamation will be in accordance with COGCC 1000 Series Rules.

Is the described reclamation complete? No

Does the reclamation described herein constitute interim or final reclamation of the Oil and Gas Location?

☐ Interim

☐ Final

Did the Surface Owner provide the seed mix? \_\_\_\_\_

If YES, does the seed mix comply with local soil conservation district recommendations? \_\_\_\_\_

Did the local soil conservation district provide the seed mix? \_\_\_\_\_

### SITE RECLAMATION DATES

Proposed date of commencement of Reclamation. 04/19/2024

Proposed date of completion of Reclamation. 10/19/2024

## 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. 03/15/2022

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

### SITE INVESTIGATION DATES

Date of Initial Actions described in Site Investigation Plan (start date). \_\_\_\_\_

Proposed site investigation commencement. 11/11/2021

Proposed completion of site investigation. 08/31/2022

### REMEDIAL ACTION DATES

Proposed start date of Remediation. 07/06/2023

Proposed date of completion of Remediation. 10/19/2023

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:

**OPERATOR COMMENT**

Refer to the Results section of the attached Site Assessment Report for a detailed discussion for the elimination of inorganic compounds and metals as contaminants of concern, and for the application of ECMC Table 915-1 RSSLs in the absence of a pathway to groundwater at the Site.

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: 10/19/2023

Email: chevroneform@tasman-geo.com

Based on the information provided herein, this Application for Site Investigation and Remediation Workplan complies with COGCC Rules and applicable orders and is hereby approved.

COGCC Approved: \_\_\_\_\_

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

Remediation Project Number: 20470

**COA Type****Description**

|       |   |
|-------|---|
|       | <p>Closure request is denied.</p> <p>1. pH is not within site specific background</p> <p>2. SAR is not within site specific background. Operator may develop a Reclamation Plan pursuant to Rule 915.b. for ECMC Staff review, or conduct remediation to bring pH and SAR within site specific background concentrations or Table 915-1 Soil Suitability for Reclamation Levels.</p> <p>3. The use of water well Receipt 10031422, Permit 332125 to determine local depth to water is not appropriate. This water well is screened from 150 to 435 feet below ground, and as such the static water level reported is not analogous to potential shall unconfined groundwater. However, considering the lithology presented in boring FS-01 and apparent lack of water in the completed well, ECMC will consider use of Table 915-1 Residential Soil Screening Levels.</p> <p>4. Operator shall provide further explanation why comparing the averages of arsenic concentrations is appropriate, and explain why arsenic concentrations in BH05 and BH06 do not represent impacts.</p> |
| 1 COA |   |

**Attachment Check 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.

| <b>Att Doc Num</b> | <b>Name</b>                    |
|--------------------|--------------------------------|
| 403566635          | FORM 27 DENIED                 |
| 403566648          | SITE INVESTIGATION REPORT      |
| 403624651          | FORM 27-SUPPLEMENTAL-SUBMITTED |
| 403624655          | DENIED FORM 27 DENIED          |

Total Attach: 4 Files

**General Comments**

| <b>User Group</b> | <b>Comment</b> | <b>Comment Date</b> |
|-------------------|----------------|---------------------|
|                   |                | Stamp Upon Approval |

Total: 0 comment(s)