

State of Colorado  
Energy & Carbon Management Commission

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Document Number:  
404062745

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: 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 #: 34710 Initial Form 27 Document #: 403679634

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: 309888	API #: _____	County Name: WELD
Facility Name: SHELTON G-64N65W 23NWNE	Latitude: 40.304722	Longitude: -104.630108	
** correct Lat/Long if needed: Latitude: _____		Longitude: _____	
QtrQtr: NWNE	Sec: 23	Twp: 4N	Range: 65W Meridian: 6 Sensitive Area? Yes
Facility Type: SPILL OR RELEASE	Facility ID: 485918	API #: _____	County Name: WELD
Facility Name: HSR Fischer 6-23 Tank Battery	Latitude: 40.305000	Longitude: -104.630639	
** correct Lat/Long if needed: Latitude: _____		Longitude: _____	
QtrQtr: NWNE	Sec: 23	Twp: 4N	Range: 65W Meridian: 6 Sensitive Area? Yes

## **SITE CONDITIONS**

General soil type - USCS Classifications SC

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? Yes

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

Surface water within 1000 ft  
No other potential receptors are located within ¼ mile of the Site.  
Above distances are approximations.

# 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	See attached figure	Lab analysis
Yes	SOILS	20' x 20' at 6-8' bgs	Lab analysis

## INITIAL ACTION SUMMARY

Description of initial action or emergency response measures take to abate, investigate, and/or remediate impacts associated with E&P Waste.

While potholing for installation of Madison pipeline historical impacts to soil and groundwater were discovered. Waste characterization samples were collected to confirm impacts and a thorough site investigation was conducted. Fourteen soil borings were advanced to install temporary groundwater monitoring wells. While advancing those soil borings confirmation soil samples were collected from various depths to delineate soil impacts. Once monitoring wells were installed and developed groundwater was sampled to delineate groundwater impacts.

## 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 ):

At this time soil impacts have been delineated and they exist within the new pipeline corridor. Therefore additional soil sampling will not be conducted at this time. While installing the pipeline through the impacted area all soil removed will be treated as impacted and removed from site for proper disposal. All material removed will be replaced with clean fill.

### Proposed Groundwater Sampling

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

After installation of the pipeline and removal of impacted soils any destroyed wells will be reinstalled and sampled quarterly to be analyzed by a certified laboratory for all Table 915-1 constituents.

### 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 ):

# SITE INVESTIGATION REPORT

## SAMPLE SUMMARY

<b>Soil</b>	<b>NA / ND</b>
Number of soil samples collected <u>18</u>	-- Highest concentration of TPH (mg/kg) <u>2730</u>

Number of soil samples exceeding 915-1 3

NA Highest concentration of SAR           

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

BTEX > 915-1 Yes

Approximate areal extent (square feet) 200

Vertical Extent > 915-1 (in feet) 8

**Groundwater**

Number of groundwater samples collected 14

-- Highest concentration of Benzene (µg/l) 59

Was extent of groundwater contaminated delineated? Yes

ND Highest concentration of Toluene (µg/l)           

Depth to groundwater (below ground surface, in feet) 4

-- Highest concentration of Ethylbenzene (µg/l) 11

Number of groundwater monitoring wells installed 14

-- Highest concentration of Xylene (µg/l) 29

Number of groundwater samples exceeding 915-1 1

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?

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?

Following the natural attenuation of groundwater impacts at the location, confirmation soil borings will be installed to assess the soil where impacts were previously left in situ. Soil sample(s) will be collected from each boring and submitted to a laboratory for analysis of all Table 915-1 constituents. Background soil samples may also be collected to assess native conditions for Table 915-1 inorganic compounds and metals. The attached map shows the proposed confirmation and background soil sample locations, as shown in Figure 5 of the attached soil chemistry map.

**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 3/5/24, the pipeline installation crews moved onsite to install a 20-inch diameter pipeline through the former HSR Fischer tank battery location. The scope of work included removal and offsite disposal of clean and impacted soil while trenching through the former location. The intent of the excavation was to accommodate the installation of the pipeline rather than removing all impacted soil. Approximately 380 cubic yards of clean and impacted soil were excavated and transported to Waste Management's Buffalo Ridge landfill. Landfill manifests and tickets are available upon request.

**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.

On 1/29/24, a site investigation was conducted to delineate the extent of soil and groundwater impacts of a historical release from the former HSR Fischer tank battery.

Arsenic, barium, lead, selenium, pH and/or SAR exceeded the Table 915-1 standards in multiple monitoring wells. With the removal of soil at MW-7, petroleum impacts in the unsaturated soil column have been removed. Soil impacts in the saturated zone at MW-11 remain in place at a depth of 6 feet. Chevron is evaluating remedial alternatives for these exceedances.

Several monitoring wells were destroyed or damaged during the 3/5/24 pipeline installation project and subsequent reclamation work. Therefore, on 5/2/24, the 14 monitoring well network was re-installed; groundwater samples were collected on 5/3/24. The groundwater samples will be analyzed for Table 915-1 Organic Compounds in Groundwater and Groundwater Inorganic Parameters.

Following the natural attenuation of groundwater impacts at the location, confirmation soil borings will be installed to assess the soil where impacts were previously left in situ. Soil sample(s) will be collected from each boring and submitted to a laboratory for analysis of all Table 915-1 constituents. Background soil samples may also be collected to assess native conditions for Table 915-1 inorganic compounds and metals. The attached map shows the proposed confirmation and background soil sample locations, as shown in Figure 5 of the attached soil chemistry map.

A solar-powered air sparge (AS) remediation system is being considered to address residual hydrocarbon impacts in the soil and groundwater if concentrations of Table 915-1 organic compounds rebound and do not naturally attenuate. The proposed remediation system layout can be found in attached Figure 5.

### Soil Remediation Summary

In Situ

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

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

\_\_\_\_\_ Air sparge / Soil vapor extraction

Yes \_\_\_\_\_ Natural Attenuation

\_\_\_\_\_ Other \_\_\_\_\_

Ex Situ

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

\_\_\_\_\_ If Yes: Estimated Volume (Cubic Yards) \_\_\_\_\_ 380

\_\_\_\_\_ Name of Licensed Disposal Facility or ECMC Facility ID # \_\_\_\_\_

No \_\_\_\_\_ Excavate and onsite remediation

\_\_\_\_\_ Land Treatment

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

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

\_\_\_\_\_ Other \_\_\_\_\_

### Groundwater Remediation Summary

No \_\_\_\_\_ Bioremediation ( or enhanced bioremediation )

No \_\_\_\_\_ Chemical oxidation

\_\_\_\_\_ Air sparge / Soil vapor extraction

Yes \_\_\_\_\_ Natural Attenuation

Yes \_\_\_\_\_ Other All groundwater removed during excavation was hauled off for offsite disposal. \_\_\_\_\_

### 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.

Fourteen monitoring wells (MW-1R through MW-14R) were installed and will be sampled quarterly to monitor natural attenuation. Groundwater monitoring wells were sampled and submitted to a laboratory for analysis of Table 915-1 groundwater constituents: Benzene, Toluene, Ethylbenzene, Total Xylenes (BTEX), naphthalene, 1,2,4-Trimethylbenzene, 1,3,5-Trimethylbenzene, Chloride ion, Sulfate ion and Total Dissolved Solids (TDS). Analysis of groundwater sampling results from Q4 2024 were reported with concentrations of organic compounds below ECMC Table 915-1 standards in 13 of the 14 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 \_\_\_\_\_

## 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:

None

Volume of E&P Waste (solid) in cubic yards \_\_\_\_\_ 380

E&P waste (solid) description \_\_\_\_\_ Impacted soil \_\_\_\_\_

ECMC Disposal Facility ID #, if applicable: \_\_\_\_\_

Non-ECMC Disposal Facility: \_\_\_\_\_ Waste Management Buffalo Ridge Landfill \_\_\_\_\_

Volume of E&P Waste (liquid) in barrels \_\_\_\_\_ 50

E&P waste (liquid) description \_\_\_\_\_ Groundwater \_\_\_\_\_

ECMC Disposal Facility ID #, if applicable: \_\_\_\_\_

Non-ECMC Disposal Facility: \_\_\_\_\_ NGL Disposal \_\_\_\_\_

## 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. 03/31/2025

Proposed date of completion of Reclamation. 12/31/2026

## 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. 01/19/2024

Actual Spill or Release date, or date of discovery. 01/19/2024

### SITE INVESTIGATION DATES

Date of Initial Actions described in Site Investigation Plan (start date). 01/29/2024

Proposed site investigation commencement. 02/14/2024

Proposed completion of site investigation. 05/03/2024

### REMEDIAL ACTION DATES

Proposed start date of Remediation. 02/14/2024

Proposed date of completion of Remediation. 12/31/2025

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:

\_\_\_\_\_

**OPERATOR COMMENT**

This form updates the ECMC with data collected during the Q4 2024 groundwater sampling at the location. The remedial action plan has been updated to address the second COA on document # 403784756. Following the natural attenuation of groundwater impacts at the location, confirmation soil borings will be installed to assess the soil where impacts were previously left in situ. Soil sample(s) will be collected from each boring and submitted to a laboratory for analysis of all Table 915-1 constituents. Background soil samples may also be collected to assess native conditions for Table 915-1 inorganic compounds and metals. The attached map shows the proposed confirmation and background soil sample locations, as shown in Figure 5 of the attached soil chemistry map. Supplemental Form 27s will be prepared and submitted on a quarterly schedule to provide updates and progress of the remediation until closure criteria have been achieved.

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

Signed: Chris Lattes

Title: Consultant

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

Email: chrisl@fremontenv.com

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

ECMC Approved: \_\_\_\_\_

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

Remediation Project Number: 34710

**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**

404062763	ANALYTICAL RESULTS
404064048	MAP
404064049	MONITORING REPORT

Total Attach: 3 Files

**General Comments**

**User Group**

**Comment**

**Comment Date**

		Stamp Upon Approval
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Total: 0 comment(s)