

# State of Colorado Energy & Carbon Management Commission

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403698643  
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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: <u>NOBLE ENERGY INC</u>	Operator No: <u>100322</u>	<b>Phone Numbers</b>
Address: <u>1099 18TH STREET SUITE 1500</u>		Phone: <u>(970) 730-7281</u>
City: <u>DENVER</u>	State: <u>CO</u>	Zip: <u>80202</u>
Contact Person: <u>Dan Peterson</u>	Email: <u>rbueuf27@chevron.com</u>	Mobile: <u>( )</u>

### PROJECT, PURPOSE & SITE INFORMATION

#### PROJECT INFORMATION

Remediation Project #: 25156 Initial Form 27 Document #: 403176270

#### 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>SPILL OR RELEASE</u>	Facility ID: <u>484124</u>	API #: _____	County Name: <u>WELD</u>
Facility Name: <u>Hanscome C 2</u>	Latitude: <u>40.285081</u>	Longitude: <u>-104.564823</u>	
** correct Lat/Long if needed: Latitude: _____		Longitude: _____	
QtrQtr: <u>SWNW</u>	Sec: <u>28</u>	Twp: <u>4N</u>	Range: <u>64W</u> Meridian: <u>6</u> Sensitive Area? <input type="checkbox"/> 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  No Is surface water within 1/4 mile?  Yes  No

Is groundwater less than 20 feet below ground surface?  Yes  No

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

Irrigation Pond 0.16mi N  
Residential 0.15/0.16mi SW, 0.18/0.21mi NW  
Farm Structures 0.18/0.23mi NW, 0.20mi NE, 0.16/0.17/0.18mi SW

**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	Laboratory analysis if encountered
Yes	SOILS	Refer to Tables and Figures	Laboratory 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 HANSCOME C02 wellhead cut and cap and flowline removal. Approximately 575' of flowline was removed. The wellhead was cut and capped per ECMC rules. 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, as applicable to abandonment type. The Flowline Abandonment Form 44 Document number is included under Related Forms.

**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. Additionally, soil samples were collected at any points of material change and/or hammer unions, and directional changes along the flowline. 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, and EC, SAR, pH, and boron. Additionally, one soil sample was analyzed for metals in soil per ECMC Table 915-1. 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 of the wellhead and flowline 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. The ECMC Flowline Closure and Wellhead Closure Checklists were utilized and filled out during the abandonment process. A photolog was submitted on the Subsequent Form 27. A detailed summary of decommissioning activities, including figures, tables, and laboratory analytical results, is attached to this Form 27.

# SITE INVESTIGATION REPORT

## SAMPLE SUMMARY

### Soil

Number of soil samples collected 33  
Number of soil samples exceeding 915-1 27  
Was the areal and vertical extent of soil contamination delineated? Yes  
Approximate areal extent (square feet) 150

### NA / ND

ND Highest concentration of TPH (mg/kg) \_\_\_\_\_  
-- Highest concentration of SAR 1.89  
BTEX > 915-1 No  
Vertical Extent > 915-1 (in feet) 4

### 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?

A total of twelve background samples were collected from six discrete locations near the former flowline location and the lithology between the investigation and background locations were observed to be well-graded sands. The background soil samples were collected from depths ranging from 4 to 8 feet below ground surface (ft bgs), and were analyzed for metals in soil per ECMC Table 915-1. Arsenic was observed in all twelve background soil samples above ECMC Table 915-1 standards. A detailed discussion of the background sampling results is presented in the Operator Comments section.

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 of the hydrocarbon exceedances above ECMC Table 915-1 RSSLs that were originally identified during decommissioning at sample location FL01-F@4', were successfully removed through a remedial excavation completed on 1/8/2024. The results of the remedial excavation are attached to this Form 27.

Based on full delineation of hydrocarbon compounds above ECMC Table 915-1 GSSLs, the ECMC approval to apply ECMC Table 915-1 RSSLs for confirmatory sampling results at this site (refer to ECMC Document #403522704), thus eliminating Benzo(a)Anthracene as a contaminant of concern at sample locations FL01-A@4' and SS02@4', the elimination of arsenic as a contaminant of concern, and lack of a pathway for contaminant migration to groundwater (refer to the attached site assessment report and Operator Comments section), Noble is requesting a No Further Action (NFA) designation for this site.

## 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 total of approximately 30 cubic yards of impacted material were removed for off-Site disposal at the Waste Management Buffalo Ridge Landfill in Keenesburg, Colorado under signed Noble waste manifests. A total of approximately 30 cubic yards of imported clean fill was used to backfill the excavation. The final remedial excavation extent measured approximately 15 ft by 10 ft by 5 ft bgs.

Based on field observations and laboratory analytical results obtained during decommissioning and subsequent site investigation activities, additional remedial actions are not warranted at this time.

### Soil Remediation Summary

In Situ

Ex Situ

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

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

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

\_\_\_\_\_ If Yes: Estimated Volume (Cubic Yards) \_\_\_\_\_ 30

\_\_\_\_\_ 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 Report \_\_\_\_\_

## 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: \$ 0 \_\_\_\_\_

## 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:

N/A

Volume of E&P Waste (solid) in cubic yards \_\_\_\_\_ 30

E&P waste (solid) description Soil

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

Non-ECMC Disposal Facility: Buffalo Ridge Waste Management 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? 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 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. 12/06/2022

Proposed date of completion of Reclamation. 07/02/2025

## 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. 08/08/2022

Actual Spill or Release date, or date of discovery. 03/24/2023

### SITE INVESTIGATION DATES

Date of Initial Actions described in Site Investigation Plan (start date). 12/06/2022

Proposed site investigation commencement. 04/19/2023

Proposed completion of site investigation. 01/08/2024

### REMEDIAL ACTION DATES

Proposed start date of Remediation. 01/08/2024

Proposed date of completion of Remediation. 01/08/2024

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 HANSCOME C02 wellhead and flowline, and necessity for supplemental site investigation and remedial excavation activities at the former flowline location.

**OPERATOR COMMENT**

Denied 10/07/2024 Laboratory analytical results from flowline decommissioning soil sample FL01-A@4' and remedial excavation soil sample SS02@4' identified Benzo(a)Anthracene concentrations above ECMC Table 915-1 Protection of Groundwater Soil Screening Levels (GSSL). Hydrocarbon compounds were within compliance of ECMC Table 915-1 GSSLs in all twelve soil samples collected during the supplemental site investigation. Arsenic was identified at concentrations above ECMC Table 915-1 GSSL and/or ECMC Table 915-1 Residential Soil Screening Levels (RSSL) in decommissioning sample FL01-F@4' and in all twelve supplemental site investigation soil samples.

Twelve background soil samples were collected from six discrete locations near the former flowline location and the lithology between the investigation and background locations were observed to be well-graded sands. The maximum background concentration of arsenic was 1.75 mg/kg, and 1.25x the maximum background concentration was calculated to be 2.19 mg/kg. All site arsenic concentrations were below the highest background concentration x1.25. Since the maximum background concentration for arsenic x1.25 was observed to be greater than the site investigation concentrations, Noble requests that arsenic not be considered a contaminant of concern at this site.

Groundwater was not encountered during the decommissioning, supplemental site investigation, or remedial excavation activities completed at this location. As such, a desktop review of Colorado's Division of Water Resources (DWR) Well Permit Research Mapper was performed to determine the depth to water below ground surface in permitted water wells within a 1.5-mile radius of the Site. For a visual representation of the results of this inquiry refer to Figure 5 included in the attached flowline site assessment report. Five permitted water wells were identified within the 1.5-mile radius. According to the permit records, the average static groundwater level in this region is approximately 121 ft bgs. Since groundwater is recorded to be approximately 121 ft bgs in the region of the Site, and since soil impacts at the Site are limited to less than 5 ft bgs, there is no pathway for contaminant migration to the groundwater table. As such, Noble proposes to utilize the ECMC Table 915-1 RSSLs when evaluating soil sample analytical results. The use of ECMC Table 915-1 RSSLs eliminates the Benzo(a)Anthracene concentrations identified at the Site as contaminants of concern. While concentrations of arsenic are still above ECMC Table 915-1 RSSLs, all arsenic concentrations in the soil boring samples are below the established background concentrations at the Site. As such, arsenic is also not considered to be a contaminant of concern at this site.

Based on the analytical and soil screening results presented, Noble is requesting a No Further Action (NFA) designation for 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: 03/18/2024

Email: chevroneform@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: 25156

**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
403698643	FORM 27-SUPPLEMENTAL-SUBMITTED
403843764	SITE INVESTIGATION REPORT
403843844	SITE INVESTIGATION REPORT

Total Attach: 3 Files

**General Comments**

User Group	Comment	Comment Date
Environmental	ECMC has denied closure request. Operator shall resubmit with original laboratory reports attached as separate attachments.	10/07/2024

Total: 1 comment(s)