

State of Colorado
Energy & Carbon Management Commission

1120 Lincoln Street, Suite 801, Denver, Colorado 80203
Phone: (303) 894-2100 Fax: (303) 894-2109



Document Number:
403989420
Receive Date:
03/05/2025

Report taken by:
Nick Cholas

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

PROJECT, PURPOSE & SITE INFORMATION

PROJECT INFORMATION

Remediation Project #: 31530 Initial Form 27 Document #: 403528326

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>LOCATION</u>	Facility ID: <u>328032</u>	API #: _____	County Name: <u>WELD</u>
Facility Name: <u>KNAUB-64N65W 9NWSW</u>	Latitude: <u>40.325970</u>	Longitude: <u>-104.674270</u>	
** correct Lat/Long if needed: Latitude: <u>40.326986</u>		Longitude: <u>-104.674517</u>	
QtrQtr: <u>NWSW</u>	Sec: <u>9</u>	Twp: <u>4N</u>	Range: <u>65W</u> Meridian: <u>6</u> Sensitive Area? <u>Yes</u>

Facility Type: <u>SPILL OR RELEASE</u>	Facility ID: <u>486877</u>	API #: _____	County Name: <u>WELD</u>
Facility Name: <u>Knaub 09-12G</u>	Latitude: <u>40.326964</u>	Longitude: <u>-104.674804</u>	
** correct Lat/Long if needed: Latitude: _____		Longitude: _____	
QtrQtr: <u>SWNW</u>	Sec: <u>9</u>	Twp: <u>4N</u>	Range: <u>65W</u> Meridian: <u>6</u> Sensitive Area? <u>Yes</u>

Facility Type: SPILL OR RELEASE Facility ID: 486878 API #: _____ County Name: WELD
 Facility Name: Knaub 09-12G Latitude: 40.326983 Longitude: -104.674470
 ** correct Lat/Long if needed: Latitude: _____ Longitude: _____
 QtrQtr: SWNW Sec: 9 Twp: 4N Range: 65W 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? Yes
 Is groundwater less than 20 feet below ground surface? No

Other Potential Receptors within 1/4 mile

Potential prairie dog colony
 Palustrine 25ft W; 170/220ft/0.19mi SW; 0.24mi SE
 Behrens Reservoir 280ft SW
 Farming Structures 438ft W; 0.10 NW; 0.12/0.12 SW
 Residential Structures 480ft W; 0.11 NW; 0.13 SW

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	Refer to ECMC Document #403808229	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 Knaub 09-12G 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 excavation(s), beneath the ground oil tank(s), and at the risers for the flowline(s) and dumpline(s) of any separator(s). Soil samples will be 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 and inorganic parameters (TDS, chloride, sulfate, sodium, potassium, bicarbonate, and carbonate (as CaCO3)).

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 is required. A detailed summary of decommissioning activities, including field notes, site photos, figures, and laboratory analytical results, was attached to a previous Supplemental Form 27 (ECMC Document #403808229).

SITE INVESTIGATION REPORT

SAMPLE SUMMARY

Soil

Number of soil samples collected 10

Number of soil samples exceeding 915-1 0

NA / ND

ND Highest concentration of TPH (mg/kg) _____

-- Highest concentration of SAR 0.098
3

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

BTEX > 915-1 No _____

Approximate areal extent (square feet) _____ 0

Vertical Extent > 915-1 (in feet) _____ 0

Groundwater

Number of groundwater samples collected _____ 0

Highest concentration of Benzene (µg/l) _____

Was extent of groundwater contaminated delineated? Yes _____

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?

On 4/18/2024, three background samples were collected from one discrete location (BG01) near the tank battery and analyzed for metals in soil per ECMC Table 915-1, pH, SAR, EC, and boron. On 10/25/2024, nine additional background samples were collected from three discrete locations (BKG02 through BKG04) near the tank battery and analyzed for metals in soil per ECMC Table 915-1, pH, SAR, EC, and boron. Background soil samples were collected from depths ranging between 0 to 4 feet below ground surface (ft bgs) and the lithology between the site and background locations were observed to be well graded sands. The maximum background concentration for pH was observed to be 9.10. The maximum background concentrations with a 1.25x multiplier applied for arsenic, barium, lead, and zinc were calculated to be 2.95 mg/kg, 88.4 mg/kg, 8.51 mg/kg, and 33.0 mg/kg, respectively.

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 sources identified during decommissioning at sample locations AST01@0.5' and SEP01-DL@2' were successfully removed through remedial excavations. The AST01@0.5' remedial excavation measured 11 feet (ft) long by 11 ft wide and reached a terminal depth of 2.5 ft below ground surface (bgs). The SEP01-DL@2' remedial excavation measured 11 ft long by 11 ft wide and reached a terminal depth of 3 ft bgs. A total of 20 cubic yards (CY) of impacted soil was excavated and transported off-site for disposal at the Waste Management Buffalo Ridge Landfill. The metal exceedances above 1.25x the background levels previously identified at AS01@0.5' and the pH value below the soil suitability limits identified at SEP01-DL@2' were excavated during the source removal activities.

A total of ten soil samples were collected from the remedial excavation extents and analyzed for full ECMC Table 915-1 constituents by a certified laboratory using approved ECMC laboratory analysis methods. All analyzed constituents from remedial excavation confirmatory soil samples (SS05-SS12 and FS02-FS03) collected on October 25, 2024 were below ECMC Table 915-1 Protection of Groundwater Soil Screening Levels (GSSLs) for organic compounds in soils. All soil soil suitability parameters from the remedial confirmation samples were within the soil suitability limits. All ECMC Table 915-1 metal concentrations were below the ECMC limits, or within 1.25x the maximum background concentrations. The analytical tables, figures, and laboratory reports from the remedial excavations are attached to this Form 27.

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.

Refer to the Source Removal Summary section above.

Soil Remediation Summary

In Situ

Ex Situ

- _____ Bioremediation (or enhanced bioremediation)
- _____ Chemical oxidation
- _____ Air sparge / Soil vapor extraction
- _____ Natural Attenuation
- _____ Other _____

- Yes _____ Excavate and offsite disposal
- _____ If Yes: Estimated Volume (Cubic Yards) _____ 20
- _____ Name of Licensed Disposal Facility or ECMC 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.

Groundwater was not encountered during the decommissioning or remedial excavation activities at the site.

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 Supplemental Source Mass Removal Summary

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:

Volume of E&P Waste (solid) in cubic yards 20

E&P waste (solid) description Hydrocarbon 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 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? 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 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. 04/18/2024

Proposed date of completion of Reclamation. 06/18/2026

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. 08/24/2023

Actual Spill or Release date, or date of discovery. 05/29/2024

SITE INVESTIGATION DATES

Date of Initial Actions described in Site Investigation Plan (start date). 04/18/2024

Proposed site investigation commencement. 10/25/2024

Proposed completion of site investigation. 10/25/2024

REMEDIAL ACTION DATES

Proposed start date of Remediation. 10/25/2024

Proposed date of completion of Remediation. 10/25/2024

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:

No additional investigation is required at this time. The proposed completion of remediation date has been adjusted to the supplemental site investigation completion date. A request for No Further Action (NFA) designation for the site will be submitted on a subsequent Supplemental Form 27.

OPERATOR COMMENT

This Form 27 is being submitted to include the results of the October 2024 source removal activities completed at the Knaub 09-12G Tank Battery location. A detailed summary of the remedial excavation activities is presented herein.

The sources identified during decommissioning at sample locations AST01@0.5' and SEP01-DL@2' were successfully removed through remedial excavations. The AST01@0.5' remedial excavation measured 11 feet (ft) long by 11 ft wide and reached a terminal depth of 2.5 ft below ground surface (bgs). The SEP01-DL@2' remedial excavation measured 11 ft long by 11 ft wide and reached a terminal depth of 3 ft bgs. A total of 20 cubic yards (CY) of impacted soil was excavated and transported off-site for disposal at the Waste Management Buffalo Ridge Landfill. The metal exceedances above 1.25x the background levels previously identified at AS01@0.5' and the pH value below the soil suitability limits identified at SEP01-DL@2' were excavated during the source removal activities.

A total of ten soil samples were collected from the remedial excavation extents and analyzed for full ECMC Table 915-1 constituents by a certified laboratory using approved ECMC laboratory analysis methods. All analyzed constituents from remedial excavation confirmatory soil samples (SS05-SS12 and FS02-FS03) collected on October 25, 2024 were below ECMC Table 915-1 Protection of Groundwater Soil Screening Levels (GSSLs) for organic compounds in soils. All soil soil suitability parameters from the remedial confirmation samples were within the soil suitability limits. All ECMC Table 915-1 metal concentrations were below the ECMC limits, or within 1.25x the maximum background concentrations. The analytical tables, figures, and laboratory reports from the remedial excavations are attached to this Form 27.

Twelve background soil samples were collected near the tank battery and analyzed for metals in soil per ECMC Table 915-1, pH, SAR, EC, and boron. Background soil samples were collected from depths ranging between 0 to 3 feet below ground surface (ft bgs) and the lithology between the site and background locations were observed to be well graded sands. The maximum background concentration for pH was observed to be 9.10. The maximum background concentrations with a 1.25x multiplier applied for arsenic, barium, lead, and zinc were calculated to be 2.95 mg/kg, 88.4 mg/kg, 8.51 mg/kg, and 33.0 mg/kg, respectively. All pH values remaining in place at the site were below background levels. All arsenics concentrations remaining in place at the site are below 1.25x the maximum background levels. All other ECMC Table 915-1 metal and soil suitability exceedances identified on-site were excavated during source removal activities.

Based on the successful removal of constituents exceeding ECMC Table 915-1, and the evidence to demonstrate that pH is naturally elevated at the site, no additional site investigation or remediation activities are warranted at this time. Noble will submit a request for a No Further Action (NFA) designation for the site on a subsequent Supplemental 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: 03/05/2025

Email: Tas-3-Chevron@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: Nick Cholas

Date: 04/25/2025

Remediation Project Number: 31530

COA Type

Description

	Operator will continue quarterly reporting until the site investigation is complete and Table 915-1 standards are met within the remediation area.
1 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

403989420	FORM 27-SUPPLEMENTAL-SUBMITTED
403989567	ANALYTICAL RESULTS
404116233	SITE INVESTIGATION REPORT

Total Attach: 3 Files

General Comments

User Group

Comment

Comment Date

Environmental	Operator states "Noble will submit a request for a No Further Action (NFA) designation for the site on a subsequent Supplemental Form 27."	04/25/2025
---------------	--	------------

Total: 1 comment(s)