

State of Colorado
Energy & Carbon Management Commission

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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 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	Phone Numbers
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 #: 29582 Initial Form 27 Document #: 403421783

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: 319048	API #: _____	County Name: WELD
Facility Name: STATE A-64N64W 16NENE	Latitude: 40.315955	Longitude: -104.549699	
** correct Lat/Long if needed: Latitude: 40.315442		Longitude: -104.546394	
QtrQtr: NENE	Sec: 16	Twp: 4N	Range: 64W Meridian: 6 Sensitive Area? Yes
Facility Type: SPILL OR RELEASE	Facility ID: 489443	API #: _____	County Name: WELD
Facility Name: State A41-16	Latitude: 40.315239	Longitude: -104.546337	
** correct Lat/Long if needed: Latitude: _____		Longitude: _____	
QtrQtr: NENE	Sec: 16	Twp: 4N	Range: 64W Meridian: 6 Sensitive Area? Yes

SITE CONDITIONS

General soil type - USCS Classifications SW _____

Most Sensitive Adjacent Land Use Cropland _____

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

Holding Pond 80ft W, 0.21mi SE, Ditch Feature 55ft S
Farm Structures 0.13/0.15 NNE, 0.18/0.20 SW, 0.24 SW
Residential 0.11 NNE, 0.18 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
No	GROUNDWATER	Refer to ECMC Document #403844920	Laboratory analysis and field screening
Yes	SOILS	Refer to ECMC Document #403844920	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.

A site investigation was conducted pursuant to ECMC Rule 911 at the ST T4N-R64W-S16 L06 Facility and Tank Battery location. On 05/08/2024, the tank battery was decommissioned in accordance with ECMC rules. Laboratory soil samples were collected from the partially-buried produced water vessel excavation (PWV01-B@3') and field screening samples were taken from the N, E, S, & W sidewalls (PWV01-N through PWV01-W). The screening sample with the highest PID (PWV01-E@2') was collected for laboratory analysis from the E sidewall. Lab samples were also collected beneath the above ground storage tank (AST01 @0-6"). Additionally, field screening samples were collected beneath the flare (FLARE01 @0-6") and meter house (MH01 @0-6").

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):

Soils were collected as described in the Initial Action Summary of this Supplemental Form 27. 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.

Per the approved soil sampling plan associated with Initial Form 27 document #403421783, analytical soil samples will be collected at the separator dumpline and flowline locations shown on the proposed site investigation map (SEP01-DL and SEP01-FL), during a supplemental site assessment.

Proposed Groundwater Sampling

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

Groundwater was encountered during the site investigation and a lab groundwater sample was collected and analyzed for BTEX, naphthalene, 1,2,4-trimethylbenzene (TMB), 1,3,5-TMB, total dissolved solids (TDS), chloride, and sulfate.

If groundwater is encountered during the supplemental investigation a groundwater sample(s) will be collected and analyzed for all organic and inorganic compounds per ECMC Table 915-1.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, is attached to a previous Form 27 (ECMC Document #403844920).

SITE INVESTIGATION REPORT

SAMPLE SUMMARY

Soil

Number of soil samples collected 4
Number of soil samples exceeding 915-1 4
Was the areal and vertical extent of soil contamination delineated? No
Approximate areal extent (square feet) 400

NA / ND

ND Highest concentration of TPH (mg/kg) _____
-- Highest concentration of SAR 0.819
BTEX > 915-1 No
Vertical Extent > 915-1 (in feet) 3

Groundwater

Number of groundwater samples collected 1
Was extent of groundwater contaminated delineated? No
Depth to groundwater (below ground surface, in feet) 3
Number of groundwater monitoring wells installed 0
Number of groundwater samples exceeding 915-1 0

ND Highest concentration of Benzene (µg/l) _____
-- Highest concentration of Toluene (µg/l) 48
ND Highest concentration of Ethylbenzene (µg/l) _____
-- Highest concentration of Xylene (µg/l) 29
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?

In accordance with the COA issued under Form 27 Document #403844920, Noble will return to the Site to complete a supplemental site investigation (SSI) to verify the presence or absence of a historical release associated with the produced water vault (PWV). A minimum of five soil borings will be advanced in the area of the PWV as shown on the attached proposed site investigation map. Soil samples will be collected from the borings at a minimum frequency of one sample per the highest observed PID reading and at the bottom of each boring. Due to the presence of shallow groundwater, each soil boring will be converted to a temporary monitoring well. Groundwater samples will be collected from each monitoring well and will be analyzed for BTEX, naphthalene, 1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene, total dissolved solids (TDS), chloride, sulfate, sodium, potassium, bicarbonate, and carbonate (as CaCO₃). Each groundwater monitoring well will be sampled on a quarterly basis until four consecutive quarters of compliant results are achieved. Additionally, analytical soil samples will be collected at the separator dumphine and flowline locations shown on the proposed site investigation map (SEP01-DL and SEP01-FL), per the approved soil sampling plan associated with Initial Form 27 document #403421783. All soil samples will be analyzed for full Table 915-1 constituents of concern. Concurrently with the SSI, background samples will be collected and analyzed for metals in soil per ECMC Table 915-1, pH, SAR, EC, and boron to determine if pH, arsenic, and selenium concentrations observed during decommissioning are attributed to native conditions at this site. 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.

Refer to the remediation summary section below.

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.

A supplemental site investigation (SSI) will be completed to verify the presence or absence of a historical release adjacent to the produced water vault (PWV) in accordance with the COAs issued under Form 27 document #403844920. Additionally, analytical soil samples will be collected at the separator dumpline and flowline locations shown on the proposed site investigation map (SEP01-DL and SEP01-FL), per the approved soil sampling plan associated with Initial Form 27 document #403421783. All soil samples will be analyzed for full Table 915-1 constituents of concern.

Soil Remediation Summary

<input type="checkbox"/> In Situ	<input type="checkbox"/> Ex Situ
_____ Bioremediation (or enhanced bioremediation)	_____ Excavate and offsite disposal
_____ Chemical oxidation	_____ If Yes: Estimated Volume (Cubic Yards) _____
_____ 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

Yes _____ 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 encountered and sampled during site investigation activities. One groundwater samples (GW01) was collected along the former tank battery location and was submitted for laboratory analysis of BTEX, TMBs, TDS, chloride, and sulfate. Analytical results indicated benzene, ethylbenzene, and naphthalene were non-detect. Toluene, total xylenes, 1,2,4-TMB and 1,3,5-TMB were detected at concentrations below the ECMC Table 915-1 screening levels for organic compounds in groundwater. Groundwater monitoring wells will be installed to confirm the absence of dissolved phase impacts above the ECMC Table 915-1 screening levels and to establish points of compliance. An investigation of background inorganics in groundwater will be completed.

Groundwater samples collected during the proposed supplemental site investigation (SSI) will be collected from each monitoring well and will be analyzed for BTEX, naphthalene, 1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene, total dissolved solids (TDS), chloride, sulfate, sodium, potassium, bicarbonate, and carbonate (as CaCO3). Each groundwater monitoring well will be sampled on a quarterly basis until four consecutive quarters of compliant results are achieved.

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 Second Quarter 2025 Timeline Update and Supplemental Site Investigation 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 (policies MWZZ316714 and MWZX316724) 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? 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 _____

ECMC Disposal Facility ID #, if applicable: _____

Non-ECMC Disposal Facility: _____

Volume of E&P Waste (liquid) in barrels _____

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. 05/08/2024

Proposed date of completion of Reclamation. 06/30/2027

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. 05/11/2023

Actual Spill or Release date, or date of discovery. _____

SITE INVESTIGATION DATES

Date of Initial Actions described in Site Investigation Plan (start date). 05/08/2024

Proposed site investigation commencement. 05/05/2025

Proposed completion of site investigation. 06/30/2025

REMEDIAL ACTION DATES

Proposed start date of Remediation. 06/30/2025

Proposed date of completion of Remediation. 06/30/2026

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:

'Proposed completion of site investigation' date is being updated to reflect the necessity for supplemental site investigation (SSI) activities adjacent to the tank battery. The proposed site investigation is tentatively scheduled for the second quarter 2025. The implementation schedule may be updated pending the results of the SSI.

OPERATOR COMMENT

This Form 27 is being submitted to maintain quarterly reporting compliance during the Second Quarter 2025 for the State A41-16 Tank Battery (REM #29582).

In accordance with the COA issued under Form 27 Document #403844920, Noble will return to the Site to complete a supplemental site investigation (SSI) to verify the presence or absence of a historical release associated with the produced water vault (PWV). A minimum of five soil borings will be advanced in the area of the PWV as shown on the attached proposed site investigation map. Soil samples will be collected from the borings at a minimum frequency of one sample per the highest observed PID reading and at the bottom of each boring. Due to the presence of shallow groundwater, each soil boring will be converted to a temporary monitoring well. Groundwater samples will be collected from each monitoring well and will be analyzed for BTEX, naphthalene, 1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene, total dissolved solids (TDS), chloride, sulfate, sodium, potassium, bicarbonate, and carbonate (as CaCO₃). Each groundwater monitoring well will be sampled on a quarterly basis until four consecutive quarters of compliant results are achieved. Additionally, analytical soil samples will be collected at the separator dumpline and flowline locations shown on the proposed site investigation map (SEP01-DL and SEP01-FL), per the approved soil sampling plan associated with Initial Form 27 document #403421783. All soil samples will be analyzed for full Table 915-1 constituents of concern. Concurrently with the SSI, background samples will be collected and analyzed for metals in soil per ECMC Table 915-1, pH, SAR, EC, and boron to determine if pH, arsenic, and selenium concentrations observed during decommissioning are attributed to native conditions at this site. The results of the SSI will be submitted on a subsequent Form 27.

This SSI was first proposed on in-process ECMC Document #404086737.

Per COA on ECMC Document #403421783, if groundwater is encountered during the supplemental investigation a groundwater sample(s) will be collected and analyzed for all organic compounds per ECMC Table 915-1, TDS, chloride, sulfate, sodium, potassium, bicarbonate, and carbonate (as CaCO₃).

Pursuant to Rule 913.e, quarterly reporting will be conducted until closure criteria are achieved for the remediation project. The results of supplemental site investigation 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: Michael Liston

Title: Environmental Consultant

Submit Date: 05/06/2025

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: Kilian Collins

Date: 08/21/2025

Remediation Project Number: 29582

COA Type

Description

	Operator stated they will collect analytical samples "...from the borings at a minimum frequency of one sample per the highest observed PID reading and at the bottom of each boring." The Operator does describe how each boring will be field screened however. Operator shall field screen the boring at each 1' interval utilizing AVO and PID headspace techniques. This data shall be recorded on soil boring logs and provided with the site investigation report.
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

404190261	FORM 27-SUPPLEMENTAL-SUBMITTED
404191456	SITE INVESTIGATION PLAN

Total Attach: 2 Files

General Comments

User Group

Comment

Comment Date

		Stamp Upon Approval
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Total: 0 comment(s)