

State of Colorado
Energy & Carbon Management Commission

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



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09/09/2024

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

PROJECT, PURPOSE & SITE INFORMATION

PROJECT INFORMATION

Remediation Project #: 30440 Initial Form 27 Document #: 403460161

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: 318592	API #: _____	County Name: WELD
Facility Name: LOIS DINNER UNIT-64N66W 13SESW	Latitude: 40.308410	Longitude: -104.729310	
** correct Lat/Long if needed: Latitude: 40.308338		Longitude: -104.729086	
QtrQtr: SESW	Sec: 13	Twp: 4N	Range: 66W Meridian: 6 Sensitive Area? Yes
Facility Type: SPILL OR RELEASE	Facility ID: 485432	API #: _____	County Name: WELD
Facility Name: Lois Dinner Federal 2	Latitude: 40.308546	Longitude: -104.729031	
** correct Lat/Long if needed: Latitude: _____		Longitude: _____	
QtrQtr: NESW	Sec: 13	Twp: 4N	Range: 66W 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? 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

Freshwater pond 25ft W, 0.11mi SW
Farm structures 18ft W, 0.14/0.15/0.15mi E, 0.19/0.20mi S, 0.22/0.22mi SE
Residential structures 0.18mi E, 0.19/0.19mi S, 0.24mi SE

DENIED

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 if encountered
Yes	SOILS	10'x10'x5' below ground surface	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.

A site investigation was conducted pursuant to ECMC Rule 911 at the SCHAEFER DINNER T4N-R66W-S13 L01 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(s) excavation, beneath the ground oil tank(s), and at the risers for the flowline(s) and dumpline(s) of any separator(s). 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.

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):

SITE INVESTIGATION REPORT

SAMPLE SUMMARY

Soil	NA / ND
Number of soil samples collected <u>32</u>	-- Highest concentration of TPH (mg/kg) <u>150</u>
Number of soil samples exceeding 915-1 <u>32</u>	-- Highest concentration of SAR <u>4.62</u>

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) 5

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?

Ten background soil samples were collected near the tank battery and analyzed for arsenic, barium, cadmium, lead, selenium, pH, SAR, EC, and boron. Background soil samples were collected from depths ranging between 5 to 8 feet below ground surface (ft bgs). The maximum background concentration for pH was observed to be 9.19. The maximum background concentrations with a 1.25x multiplier applied for arsenic, barium, cadmium, lead, and selenium were calculated to be 13.6 mg/kg, 394 mg/kg, 0.749 mg/kg, 16.1 mg/kg, and 0.325 mg/kg, respectively. All pH, arsenic, barium, and cadmium concentrations observed during decommissioning and SSI activities were below background levels. As such, pH, arsenic, barium, and cadmium should not be considered contaminants of concern (COC). Additional justification to eliminate lead and selenium as COCs through the application of ECMC Table 915-1 Residential Soil Screening Levels (RSSLs) is presented in the Operator Comments section of this Form 27.

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.

Five soil borings were advanced during the 1/3/2024 supplemental site investigation (SSI) to delineate the organic compounds in soil exceeding ECMC Table 915-1 Protection of Groundwater Soil Screening Levels (GSSLs) observed during decommissioning at FS01@5'. 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 Organic compounds in soil per ECMC Table 915-1, TPH, arsenic, barium, cadmium, lead, selenium, pH, EC, SAR, and boron. Groundwater was not encountered during this assessment. Soil boring sample BH01@5' was collected from the same locations as waste characterization samples FS01@5'. The organic compounds exceeding ECMC Table 915-1 GSSLs identified during decommissioning at FS01@5' were not repeated by resample location BH01@5'.

The organic compounds exceeding ECMC Table 915-1 GSSLs observed during decommissioning at FS01@5' were successfully delineated during the 1/3/2024 SSI. Soil borings were advanced and logged to a total depth of 10 feet below ground surface (ft. bgs.). Soil at the site generally consists of fine sand with clay from 0-5-ft bgs and 0-6-ft bgs, to stiff lean clay from 5-10-ft bgs and 6-10-ft bgs.

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.

Since groundwater was not encountered during decommissioning or site assessment activities within 10-ft of the ground surface, 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 0.5-mile radius of the Site. Refer to Figure 3 in the attached Site Assessment Report for a visual representation of this inquiry. Fifteen permitted water wells were identified within the 0.5-mile radius of the Site, all of which were located at roughly the same ground surface elevation as the Site. According to the permit records, the average static groundwater level within a 0.5-mile radius of the site is 21.1-ft bgs. Since the average static water level is recorded to be 21.1-ft bgs in the region of the Site, a stiff lean clay layer was observed generally from 5-10-ft bgs, and since all organic compounds and metals (lead and selenium) in exceedance of ECMC Table 915-1 GSSLs or background levels are limited to less than 6 ft bgs, there is no pathway for contaminant migration to the groundwater table.

Since there is no pathway for contaminant migration to the groundwater table, Noble proposes to utilize ECMC Table 915-1 Residential Soil Screening Levels (RSSLs) when evaluating decommissioning and site assessment soil sample analytical results. The application of ECMC Table 915-1 RSSLs eliminates the detected concentrations of organic compounds at FS01@5' and the lead/selenium detections above ECMC Table 915-1 GSSLs but below RSSLs as contaminants of concern.

If the ECMC Approves the application of Table 915-1 RSSLs, and the elimination of pH and metals as contaminants of concern (Refer to the Site Investigation Report section of this Form 27), Noble is requesting a No Further Action (NFA) designation for 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

_____ 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 Site Investigation Report, NFA Request _____

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.

Operator anticipates the remaining cost for this project to be: \$ 0 _____

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? 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 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? 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? No _____

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

Did the local soil conservation district provide the seed mix? No _____

SITE RECLAMATION DATES

Proposed date of commencement of Reclamation. 10/12/2023

Proposed date of completion of Reclamation. 09/05/2026

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. 01/13/2021

Actual Spill or Release date, or date of discovery. 11/03/2023

SITE INVESTIGATION DATES

Date of Initial Actions described in Site Investigation Plan (start date). 10/12/2023

Proposed site investigation commencement. 09/09/2024

Proposed completion of site investigation. 03/09/2025

REMEDIAL ACTION DATES

Proposed start date of Remediation. 09/09/2024

Proposed date of completion of Remediation. 09/09/2025

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 27 is being submitted to include the Supplemental Site Investigation (SSI) results and a No Further Action (NFA) request for the Lois Dinner Federal 2 Tank Battery.

Five soil borings were advanced during the 1/3/2024 supplemental site investigation (SSI) to delineate the organic compounds in soil exceeding ECMC Table 915-1 Protection of Groundwater Soil Screening Levels (GSSLs) observed during decommissioning at FS01@5'. 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 Organic compounds in soil per ECMC Table 915-1, TPH, arsenic, barium, cadmium, lead, selenium, pH, EC, SAR, and boron. Groundwater was not encountered during this assessment. Soil boring sample BH01@5' was collected from the same locations as waste characterization samples FS01@5'. The organic compounds exceeding ECMC Table 915-1 GSSLs identified during decommissioning at FS01@5' were not repeated by resample location BH01@5'.

The organic compounds exceeding ECMC Table 915-1 GSSLs observed during decommissioning at FS01@5' were successfully delineated during the 1/3/2024 SSI. Soil borings were advanced and logged to a total depth of 10 feet below ground surface (ft. bgs.). Soil at the site generally consists of fine sand with clay from 0-5-ft bgs and 0-6-ft bgs, to stiff lean clay from 5-10-ft bgs and 6-10-ft bgs.

Since groundwater was not encountered during decommissioning or site assessment activities within 10-ft of the ground surface, 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 0.5-mile radius of the Site. Refer to Figure 3 in the attached Site Assessment Report for a visual representation of this inquiry. Fifteen permitted water wells were identified within the 0.5-mile radius of the Site, all of which were located at roughly the same ground surface elevation as the Site. According to the permit records, the average static groundwater level within a 0.5-mile radius of the site is 21.1-ft bgs. Since the average static water level is recorded to be 21.1-ft bgs in the region of the Site, a stiff lean clay layer was observed generally from 5-10-ft bgs, and since all organic compounds and metals (lead and selenium) in exceedance of ECMC Table 915-1 GSSLs or background levels are limited to less than 6 ft bgs, there is no pathway for contaminant migration to the groundwater table.

Since there is no pathway for contaminant migration to the groundwater table, Noble proposes to utilize ECMC Table 915-1 Residential Soil Screening Levels (RSSLs) when evaluating decommissioning and site assessment soil sample analytical results. The application of ECMC Table 915-1 RSSLs eliminates the detected concentrations of organic compounds at FS01@5' and the lead/selenium detections above ECMC Table 915-1 GSSLs but below RSSLs as contaminants of concern.

If the ECMC Approves the application of Table 915-1 RSSLs, and the elimination of pH and metals as contaminants of concern (Refer to the Site Investigation Report section of this Form 27), 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: 09/09/2024

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: 30440

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

403913191	FORM 27-SUPPLEMENTAL-SUBMITTED
403913729	SITE INVESTIGATION REPORT
403913923	OTHER

Total Attach: 3 Files

General Comments

<u>User Group</u>	<u>Comment</u>	<u>Comment Date</u>
Environmental	ECMC has denied this Form 27 for data validation. Operator will provide laboratory analytical report(s) as a stand-alone attachment(s) on the replacement Supplemental Form 27. The Laboratory Report PDF(s) must be secured by the issuing laboratory; If there is a difference between the creation date and secured date of the PDF, Operator shall provide an explanation in the case narrative of the associated report. ECMC will not review combined PDFs with lab reports.	02/13/2025

Total: 1 comment(s)

