

State of Colorado
Energy & Carbon Management Commission

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404074938
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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: <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 #: 25214 Initial Form 27 Document #: 403182453

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>481072</u>	API #: _____	County Name: <u>WELD</u>
Facility Name: <u>29-4N-64W NWNE Johnson RC TB Loc</u>	Latitude: <u>40.290300</u>	Longitude: <u>-104.573400</u>	
** correct Lat/Long if needed: Latitude: <u>40.290469</u>		Longitude: <u>-104.573779</u>	
QtrQtr: <u>NWNE</u>	Sec: <u>29</u>	Twp: <u>4N</u>	Range: <u>64W</u> Meridian: <u>6</u> Sensitive Area? <u>Yes</u>
Facility Type: <u>SPILL OR RELEASE</u>	Facility ID: <u>484125</u>	API #: _____	County Name: <u>WELD</u>
Facility Name: <u>Johnson RC 29-02</u>	Latitude: <u>40.290451</u>	Longitude: <u>-104.573551</u>	
** correct Lat/Long if needed: Latitude: _____		Longitude: _____	
QtrQtr: <u>NWNE</u>	Sec: <u>29</u>	Twp: <u>4N</u>	Range: <u>64W</u> Meridian: <u>6</u> Sensitive Area? <u>Yes</u>

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

House: 0.06mi NW, 0.21mi E
Pond: 0.23mi E

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	Refer to Tables and Figures	Lab analysis
Yes	SOILS	Refer to Tables and Figures	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 JOHNSON T4N-R64W-S29 L02 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 separator(s). 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. 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 sample will be collected and analyzed for all organic compounds and inorganic parameters 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 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 was required. The ECMC Tank Battery and Produced Water Vessel Closure Checklists was utilized and filled out during the abandonment process. A detailed summary of decommissioning activities, including field notes, site photos, figures, and laboratory analytical results was submitted on a previous Supplemental Form 27 (Doc. No. 403454037).

SITE INVESTIGATION REPORT

SAMPLE SUMMARY

Soil

NA / ND

Number of soil samples collected 58

-- Highest concentration of TPH (mg/kg) 2250

Number of soil samples exceeding 915-1

-- Highest concentration of SAR 11

Was the areal and vertical extent of soil contamination delineated? No

BTEX > 915-1 Yes

Approximate areal extent (square feet) 300

Vertical Extent > 915-1 (in feet) 10

Groundwater

Number of groundwater samples collected 1

ND Highest concentration of Benzene (µg/l)

Was extent of groundwater contaminated delineated? No

ND Highest concentration of Toluene (µg/l)

Depth to groundwater (below ground surface, in feet) 15

-- Highest concentration of Ethylbenzene (µg/l) 62

Number of groundwater monitoring wells installed 0

-- Highest concentration of Xylene (µg/l) 100

Number of groundwater samples exceeding 915-1 1

ND 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 September 28, 2023, a total of ten background soil samples were collected at three boring locations at depths ranging between 2.5 and 8 feet bgs and submitted for laboratory analysis of arsenic, barium, cadmium, and selenium. These samples were collected within the former tank battery pad and the results collected from these borings were not used in background assessments.

On March 1, 2024, a total of ten background soil samples were collected from native material at five boring locations at depths ranging between 4-5 feet and 9-10 feet bgs and were submitted for laboratory analysis of pH, SAR, EC, boron, arsenic, barium, cadmium, lead, and selenium. Background soil analytical results indicated that pH, SAR, EC, boron, arsenic, and barium were in exceedance of the applicable regulatory standards in native soil on site. Based on the analytical results, pH and selenium remain in exceedance of ECOM standards and background concentrations on site.

 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?

On 4/19/2023 and 2/27/2024, supplemental site investigation (SSI) activities were conducted and nine borings were advanced in and around the area of impacts. Each of the nine soil borings were converted to temporary groundwater monitoring wells. BH01 was advanced at the same location as the waste characterization sample FS01 and BH02-BH06 were advanced surrounding BH01 to delineate impacts. BH07-BH09 were advanced surrounding BH02-BH06.

Due to field constraints during source mass removal activities, the north wall of the excavation was not able to extend past BH06 and confirmation soil samples were not collected in this region. As a result, a SSI will take place to advance a soil boring near BH06 along the former north wall to confirm the absence of hydrocarbon impacts. In addition, two soil borings will be advanced in the vicinity of soil samples SEP01-DL and SEP02-DL to confirm full Table 915-1 compliance. Samples will be analyzed for the full Table 915-1 analytical suite. Additionally, background samples will be collected around the former tank battery to determine if the elevated pH and selenium concentrations are attributed to native soil conditions at site. The proposed soil boring locations are illustrated on Figure 3.

Concurrently with the SSI, ten monitoring wells will be installed within and surrounding the former excavation. The proposed monitoring well locations are illustrated on Figure 2. VOC concentrations using a PID and lithologic descriptions will be recorded for each borehole. If elevated VOC concentrations are encountered during the investigation, a soil sample will be collected from the interval exhibiting the highest VOC concentration from the borehole and submitted for laboratory analysis of the full Table 915-1 Suite.

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.

Between November 19, 2024 and January 8, 2025 a remedial excavation was completed to remove the remaining organic exceedances on site. Approximately 1,880 cubic yards of impacted material were transported to Waste Management Ault Facility and 1,020 cubic yards were transported to Waste Management Buffalo Ridge Facility under Noble waste manifests. In addition, approximately 680 barrels of groundwater were removed from the excavation and transported to NGL C3 and 1,390 barrels of groundwater were removed and transported to NGL C1.

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.

Between 11/19/24 and 01/08/25 supplemental source mass removal activities were completed to remove organic exceedances on site. During the SSMR activities, monitoring wells BH01-BH07 were abandoned/destroyed. A total of 58 soil samples were collected from the base and sidewalls of the excavation at depths ranging from 6 feet to 18.5 feet bgs and submitted for analysis of the full Table 915-1 analytical suite. Due to a third party flowline and overhead powerlines, the north wall of the excavation could not be extended further. Analytical results indicated that organic compound concentrations were in exceedance of ECMC standards in two soil sample locations (SS56 and SS57). In addition, pH concentrations were in exceedance of the ECMC standard and background concentrations in three soil sample locations (SS12-SS14). The remaining constituent concentrations were in compliance with ECMC standards for samples collected from the final excavation extent.

Additionally, on 12/02/24 a groundwater sample (GW01) was collected from the excavation at approximately 15 feet bgs and submitted for laboratory analysis of BTEX, naphthalene, 1,2,4-TMB, 1,3,5-TMB, TDS, chloride, and sulfate.. Analytical results indicated that groundwater constituents exceeded the applicable Table 915-1 standards.

A remediation strategy will be implemented following the re-installation of the monitoring well network and the results of groundwater monitoring activities.

Soil Remediation Summary

In Situ

Ex Situ

_____ Bioremediation (or enhanced bioremediation)

Yes _____ Excavate and offsite disposal

_____ Chemical oxidation

_____ If Yes: Estimated Volume (Cubic Yards) _____ 2900

_____ 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.

Nine temporary groundwater monitoring wells (BH01 - BH09) were installed to assess groundwater on site. During remedial excavation activities conducted between November 19, 2024 and January 8, 2025 monitoring wells BH01-BH07 were abandoned/destroyed. As such, ten monitoring wells will be installed within and surrounding the former excavation. The proposed monitoring well locations are illustrated on Figure 2. VOC concentrations using a PID and lithologic descriptions will be recorded for each borehole. If elevated VOC concentrations are encountered during the investigation, a soil sample will be collected from the interval exhibiting the highest VOC concentration from the borehole and submitted for laboratory analysis all organic and inorganic compounds per ECMC Table 915-1.

Following monitoring well installment, quarterly groundwater monitoring will continue at the two site monitoring wells (BH08 & BH09) and ten proposed monitoring wells until closure criteria are met. Groundwater samples will be submitted for laboratory analysis of benzene, toluene, ethylbenzene, total xylenes (BTEX), naphthalene, 1,2,4-trimethylbenzene (TMB), and 1,3,5-TMB by EPA Method 8260B, chloride and sulfate anions by EPA Method 300.0, total dissolved solids (TDS) by Method SM 2540C, and 1-methylnaphthalene (M) and 2-M by by EPA Method 8273D SIM.

Quarterly groundwater monitoring will continue following the re-installation of the monitoring well network.

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 & 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 (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:

No beneficial use

Volume of E&P Waste (solid) in cubic yards _____ 2900

E&P waste (solid) description Hydrocarbon impacted soil

ECMC Disposal Facility ID #, if applicable: _____

Non-ECMC Disposal Facility: Waste Management-Ault, Waste Management-Buffalo Ridge

Volume of E&P Waste (liquid) in barrels _____ 2070

E&P waste (liquid) description Groundwater

ECMC Disposal Facility ID #, if applicable: _____

Non-ECMC Disposal Facility: NGL C1 and NGL C3

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 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. 03/23/2023

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. 08/17/2022

Actual Spill or Release date, or date of discovery. 03/27/2023

SITE INVESTIGATION DATES

Date of Initial Actions described in Site Investigation Plan (start date). 03/23/2023

Proposed site investigation commencement. 01/30/2025

Proposed completion of site investigation. 07/30/2025

REMEDIAL ACTION DATES

Proposed start date of Remediation. 03/27/2023

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:

The implementation schedule has been changed due the necessity for supplemental site investigation and monitoring well installation activities adjacent to the former tank battery. The SSI will take place following the approval of this form and the results of which will be submitted on a subsequent Form 27.

OPERATOR COMMENT

This Supplemental Form 27 is being submitted to summarize the remedial excavation activities at the Johnson RC 29-02 tank battery location.

Between November 19, 2024, and January 8, 2025, supplemental source mass removal activities were completed to remove organic exceedances on site. During the SSMR activities, monitoring wells BH01-BH07 were abandoned/destroyed. A total of 58 soil samples were collected from the base and sidewalls of the excavation at depths ranging from 6 feet to 18.5 feet bgs and submitted for analysis of the full Table 915-1 analytical suite. Due to a third party flowline and overhead powerlines, the north wall of the excavation could not be extended further. Analytical results indicated that organic compound concentrations were in exceedance of ECMC standards in two soil sample locations (SS56 and SS57). In addition, pH concentrations were in exceedance of the ECMC standard and background concentrations in three soil sample locations (SS12-SS14). The remaining constituent concentrations were in compliance with ECMC standards for samples collected from the final excavation extent.

Additionally, on December 2, 2024, a groundwater sample (GW01) was collected from the excavation at approximately 15 feet bgs and submitted for laboratory analysis of BTEX, naphthalene, 1,2,4-TMB, 1,3,5-TMB, TDS, chloride, and sulfate. Analytical results indicated that groundwater constituents exceeded the applicable Table 915-1 standards.

Due to field constraints during source mass removal activities, the north wall of the excavation was not able to extend past BH06 and confirmation soil samples were not collected in this region. As a result, a SSI will take place to advance a soil boring near BH06 along the former north wall to confirm the absence of hydrocarbon impacts. In addition, two soil borings will be advanced in the vicinity of soil samples SEP01-DL and SEP02-DL to confirm full Table 915-1 compliance. Samples will be analyzed for the full Table 915-1 analytical suite. Additionally, background samples will be collected around the former tank battery to determine if the elevated pH and selenium concentrations are attributed to native soil conditions at site. The proposed soil boring locations are illustrated on Figure 3.

Concurrently with the SSI, ten monitoring wells will be installed within and surrounding the former excavation. The proposed monitoring well locations are illustrated on Figure 2. VOC concentrations using a PID and lithologic descriptions will be recorded for each borehole. If elevated VOC concentrations are encountered during the investigation, a soil sample will be collected from the interval exhibiting the highest VOC concentration from the borehole and submitted for laboratory analysis of the full Table 915-1 Suite.

The SSI will take place following the approval of this form and the results of which will be submitted on a subsequent Form 27.

Supplemental Form 27s will be prepared and submitted on a quarterly schedule to provide updates and progress of the remediation until closure criteria has been achieved.

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

Signed: Mike Medina

Title: Environmental Consultant

Submit Date: 02/03/2025

Email: Tas-Chevron-2@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: 07/22/2025

Remediation Project Number: 25214

COA Type

Description

	Operator shall clarify if/when the excavation was backfilled and provided a timeline for the completion of the proposed site investigation.
	Operator shall install a minimum of 2" diameter monitoring wells.
2 COAs	

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

404074938	FORM 27-SUPPLEMENTAL-SUBMITTED
404076131	ANALYTICAL RESULTS
404076132	ANALYTICAL RESULTS
404076133	ANALYTICAL RESULTS
404076134	ANALYTICAL RESULTS
404076136	ANALYTICAL RESULTS
404076137	ANALYTICAL RESULTS
404076140	ANALYTICAL RESULTS
404076141	ANALYTICAL RESULTS
404076142	ANALYTICAL RESULTS
404076144	ANALYTICAL RESULTS

404076145	ANALYTICAL RESULTS
404076146	ANALYTICAL RESULTS
404078172	REMEDIATION PROGRESS REPORT

Total Attach: 14 Files

General Comments

<u>User Group</u>	<u>Comment</u>	<u>Comment Date</u>
		Stamp Upon Approval

Total: 0 comment(s)