

State of Colorado Energy & Carbon Management Commission

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Document Number:

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Receive Date:

Report taken by:

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		Mobile: ()
Contact Person: Dan Peterson	Email: danpeterson@chevron.com	

PROJECT, PURPOSE & SITE INFORMATION

PROJECT INFORMATION

Remediation Project #: 17666 Initial Form 27 Document #: 402652909

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: TANK BATTERY	Facility ID: 319186	API #: _____	County Name: WELD
Facility Name: REISTAD-64N64W 5SESE	Latitude: 40.335980	Longitude: -104.567430	
** correct Lat/Long if needed: Latitude: 40.336344		Longitude: -104.565305	
QtrQtr: SESE	Sec: 5	Twp: 4N	Range: 64W Meridian: 6 Sensitive Area? Yes
Facility Type: SPILL OR RELEASE	Facility ID: 480290	API #: _____	County Name: WELD
Facility Name: Reistad 1	Latitude: 40.336344	Longitude: -104.565305	
** correct Lat/Long if needed: Latitude: _____		Longitude: _____	
QtrQtr: SESE	Sec: 5	Twp: 4N	Range: 64W Meridian: 6 Sensitive Area? Yes

Facility Type: SPILL OR RELEASE	Facility ID: 489350	API #:	County Name: WELD
Facility Name: Reistad 1	Latitude: 40.336102	Longitude: -104.565401	
** correct Lat/Long if needed: Latitude: Longitude:			
QtrQtr: SESE	Sec: 5	Twp: 4N	Range: 64W Meridian: 6 Sensitive Area? Yes

SITE CONDITIONS

General soil type - USCS Classifications SW Most Sensitive Adjacent Land Use Range Land

Is domestic water well within 1/4 mile? Yes Is surface water within 1/4 mile? No

Is groundwater less than 20 feet below ground surface? No

Other Potential Receptors within 1/4 mile

Residential 0.08mi NE, 0.1mi E, 0.15mi SE, 0.06mi S, 0.04mi W, 0.14mi SW

SITE INVESTIGATION PLAN

TYPE OF WASTE:

- ☒ E&P Waste ☐ Other E&P Waste ☐ Non-E&P Waste
- ☒ Produced Water ☐ Workover Fluids
- ☒ Oil ☐ Tank Bottoms
- ☒ Condensate ☐ Pigging Waste
- ☐ Drilling Fluids ☐ Rig Wash
- ☐ Drill Cuttings ☐ Spent Filters
- ☐ Pit Bottoms
- ☐ Other (as described by EPA)

DESCRIPTION OF IMPACT

Impacted?	Impacted Media	Extent of Impact	How Determined
UNDETERMINED	GROUNDWATER	NA	Lab Analysis and Field Screening, if encountered
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.

Pursuant to ECMC Rule 911, a site investigation was conducted at the Reistad-64N64W 5SESE Tank Battery on 07/08/21. Laboratory confirmation samples were collected at the above ground storage tank (AST01), from beneath the flowline and dump line risers at the the separator (SEP01-FL01-B & SEP01-DL01), and the base of the produced water vessel excavation (FS01). Samples were also collected at 2.5' and 6' from the N, E, S, & W sidewalls of the PWV excavation (SS01-SS09). Field screening samples were collected at the flares and meter house (FLARE01, FLARE02, & MH01). All sampling was conducted in accordance with the Initial Form 27 Document No. 402652909.

Analytical results indicated the benzene concentration exceeded ECMC Table 915-1 standards in soil sample FS01. These exceedances were reported as a historic release, under ECMC Form 19 Document No. 402742855.

On 1/13/2025, a supplemental site investigation (SSI) was completed to delineate inorganic impacts and to collect confirmation samples at decommissioning sample locations, as well as, to evaluate native material conditions in soils adjacent to the former tank battery. Background soil boring (BG06) exhibited elevated PIDs at depths ranging between 11 and 13 feet below ground surface (bgs). As such, two confirmation soil samples (BH06) were collected from the elevated PID and was submitted for laboratory analysis of the full ECMC Table 915-1 suite.

Analytical results indicated that ethyl-benzene, xylenes, 1,2,4-trimethylbenzene (TMB), 1,3,5-TMB, naphthalene, total petroleum hydrocarbons (TPH), 1-methylnaphthalene (M), and 2-M concentrations exceeded ECMC Table 915-1 standards in soils samples collected from BH06. These exceedances were reported as a historic release, under ECMC Form 19 Document No. 404057951.

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):

All sampling was conducted in accordance with the Initial Action Summary. Soil samples were analyzed by a certified laboratory for TPH (total volatile [C6-C10] and extractable [C10-C36] hydrocarbons), organic compounds in soil per ECMC Table 915-1, and EC, SAR, pH, and boron. Additionally, one soil sample (FS01 @7") was analyzed for ECMC Table 915-1 metals. 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, grab groundwater samples will be collected and analyzed for all organic and inorganic compounds per ECMC Table 915-1.

Proposed Surface Water Sampling

- ☐ Will surface water samples be collected as part of this investigation? (Number, analyses, and locations of samples):

Additional Investigative Actions

- ☐ Additional alternative investigative actions described in attached Site Investigation Plan (summary):

Visual inspections 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 sampling was required. A detailed summary of decommissioning activities, including field notes, site photos, figures, and laboratory analytical results, were attached to Supplemental Form 27, under Document No. 403107020.

SITE INVESTIGATION REPORT

SAMPLE SUMMARY

Soil

Number of soil samples collected 31

Number of soil samples exceeding 915-1 11

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

Approximate areal extent (square feet) 200

NA / ND

-- Highest concentration of TPH (mg/kg) 1687

-- Highest concentration of SAR 23.5

BTEX > 915-1 Yes

Vertical Extent > 915-1 (in feet) 13

Groundwater

Number of groundwater samples collected 0

Was extent of groundwater contaminated delineated? Yes

Depth to groundwater (below ground surface, in feet)

Number of groundwater monitoring wells installed

Number of groundwater samples exceeding 915-1

Highest concentration of Benzene (µg/l)

Highest concentration of Toluene (µg/l)

Highest concentration of Ethylbenzene (µg/l)

Highest concentration of Xylene (µg/l)

Highest concentration of Methane (mg/l)

Surface Water

0 Number of surface water samples collected

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?

In March 2022, and January 2025, 31 background samples were collected from five discrete locations (BG01-BG05) adjacent to the tank battery. Sample BG02@0-1' was eliminated from background assessment due to anomalous arsenic concentrations. In November 2024, 15 background samples were collected from four discrete locations (BKG02-BKG06) from the nearby Burman C05-23D flowline (Remediation No. 23516). All background samples were analyzed for metals in soil per ECMC Table 915-1, pH, EC, SAR, and boron. The maximum background concentrations for pH, EC, SAR and boron were 9.02, 4.48 mmhos/cm, 10.5, and 0.708 mg/L, respectively. The maximum background concentrations with a 1.25x multiplier applied for arsenic, cadmium, lead, and selenium were 12.1 mg/kg, 0.878 mg/kg, 28.9 mg/kg, and 2.90 mg/kg, respectively. All lead and selenium concentrations were below background levels.

☐ 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?

An additional supplemental site investigation (SSI) will be completed to vertically and horizontally delineate the ethyl-benzene, xylenes, 1,2,4-trimethylbenzene (TMB), 1,3,5-TMB, naphthalene, total petroleum hydrocarbons (TPH), 1-methylnaphthalene (M), and 2-M concentrations exceeding ECMC Table 915-1 standards in soil sample BH06, discovered during the January 2025 SSI. Six soil borings (BH07-BH12) will be advanced in the vicinity of BH06 to vertically and horizontally delineate the aforementioned exceedances. Soil samples will be analyzed for the full ECMC Table 915-1 constituents. Concurrently with the SSI, additional background soil samples (BG06-BG08) will be collected to determine if pH, EC, SAR, boron, arsenic and cadmium concentrations exceeding ECMC Table 915-1 can be attributed to native soil conditions at the site. Soil samples will be collected and analyzed for metals in soil per ECMC Table 915-1, pH, EC, SAR, and boron.

If impacts are encountered, additional step out borings will be advanced to further delineate, as necessary. A proposed soil boring location map is attached to this Form 27. The SSI will be completed in accordance with the proposed implementation schedule, and the results 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.

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 assessment (SSI) was completed in October 2021 to vertically and horizontally delineate the benzene exceedances observed in soil sample FS01. Soil boring BH01 was advanced in the same location as soil sample FS01@7', and soil samples BH02-BH05 were advanced in each coordinate direction to laterally delineate the exceedances identified. Analytical results indicated that BH01@6-8' exhibited 1,3,5-trimethylbenzene (TMB) and naphthalene exceedances.

A secondary SSI was conducted in December 2024 and January 2025 to demonstrate ECMC Table 915-1 compliance. Seven soil borings (BH01R-BH05R, SS07R, and BH06) were advanced proximal to soil borings BH01-BH05 and excavation soil samples FS01 and SS07. Soil samples were collected at depths ranging between 6 feet and 12 feet below ground surface (bgs) and 21 soil samples were analyzed for full ECMC Table 915-1 constituents. Analytical results indicated that the benzene, 1,3,5-TMB and naphthalene exceedances encountered in FS01@7' and BH01@6-8' were unable to be replicated, as such, these exceedances are to be considered anomalous. Groundwater was not encountered during this assessment.

During the January 2025 SSI, background boring (BG06) exhibited elevated PIDs and was converted to soil boring BH06. Due to lithologic refusal at 13 feet bgs, vertical delineation was unable to be achieved. As such, two soil samples were collected from depths ranging between 11 feet and 13 feet bgs and were submitted for laboratory analysis of the full ECMC Table 915-1 constituents. Analytical results indicated that ethyl-benzene, xylenes, 1,2,4-TMB, 1,3,5-TMB, naphthalene, total petroleum hydrocarbons (TPH), 1-methylnaphthalene (M), and 2-M concentrations exceeded ECMC Table 915-1 standards. Consequently, an additional SSI will be conducted to evaluate the lateral and vertical extents of the BH06 exceedances. The SSI will be conducted in accordance with implementation schedule and proposed soil boring location location map.

Soil Remediation Summary

<input type="checkbox"/> In Situ	<input checked="" type="checkbox"/> Ex Situ
_____ Bioremediation (or enhanced bioremediation)	Yes _____ Excavate and offsite disposal
_____ Chemical oxidation	_____ If Yes: Estimated Volume (Cubic Yards) _____ 5
_____ Air sparge / Soil vapor extraction	_____ Name of Licensed Disposal Facility or ECMC Facility ID # _____
_____ Natural Attenuation	No _____ 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.

Groundwater was not encountered during the initial site decommissioning or during subsequent site investigation activities conducted to date.

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 Site Investigation Summary and Proposed Site Investigation Plan

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? 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 5

E&P waste (solid) description Hydrocarbon impacted material

ECMC Disposal Facility ID #, if applicable:

Non-ECMC Disposal Facility: North Weld Waste Management Facility

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?

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. 07/08/2021

Proposed date of completion of Reclamation. 12/02/2028

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. 02/04/2021

Actual Spill or Release date, or date of discovery. 07/08/2021

SITE INVESTIGATION DATES

Date of Initial Actions described in Site Investigation Plan (start date). 07/08/2021

Proposed site investigation commencement. 10/15/2021

Proposed completion of site investigation. 12/02/2025

REMEDIAL ACTION DATES

Proposed start date of Remediation. 12/02/2025

Proposed date of completion of Remediation. 12/02/2026

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 updated to reflect the updated proposed completion of site investigation date at the Reistad 1 Tank Battery. Pending the approval of this Form, the supplemental site investigation (SSI) is scheduled to be conducted between December 1, and December 2, 2025.

OPERATOR COMMENT

This Supplemental Form 27 is being submitted to include the fourth quarter 2024 and first quarter 2025 supplemental site investigation (SSI) analytical results at the Reistad 1 Tank Battery. The previously submitted Form 27, Document No. 404057416, remains "In Process" at the time of this submittal. As such, this Form 27 serves as a notification for the proposed SSI activities to be conducted at this location.

A secondary SSI was conducted in December 2024 and January 2025 to demonstrate ECMC Table 915-1 compliance. Seven soil borings (BH01R-BH05R, SS07R, and BH06) were advanced proximal to soil borings BH01-BH05 and excavation soil samples FS01 and SS07. Soil samples were collected at depths ranging between 6 feet and 12 feet below ground surface (bgs) and 21 soil samples were analyzed for full ECMC Table 915-1 constituents. Analytical results indicated that the benzene, 1,3,5-TMB and naphthalene exceedances encountered in FS01@7' and BH01@6-8' were unable to be replicated, as such, these exceedances are to be considered anomalous.

During the January 2025 SSI, background boring (BG06) exhibited elevated PIDs and was converted to soil boring BH06. Due to lithologic refusal at 13 feet bgs, vertical delineation was unable to be achieved. As such, two soil samples were collected from depths ranging between 11 feet and 13 feet bgs and were submitted for laboratory analysis of the full ECMC Table 915-1 constituents. Analytical results indicated that ethyl-benzene, xylenes, 1,2,4-TMB, 1,3,5-TMB, naphthalene, total petroleum hydrocarbons (TPH), 1-methylnaphthalene (M), and 2-M concentrations exceeded ECMC Table 915-1 standards. Consequently, an additional SSI will be conducted to evaluate the lateral and vertical extents of the BH06 exceedances. The SSI is tentatively scheduled to be conducted on December 1, and December 2, 2025.

Operator is submitting this Form 27 and confirms that this project is part of its ongoing data integrity review process associated with its Rule 525.e. Voluntary Disclosure. As part of its data integrity review process, Operator requested the lab protect the laboratory analytical report from subsequent modification by anyone outside the lab, which resulted in the lab reissuing the original report with the additional protections (Reissued Report). The Reissued Reports were received directly from Summit on, 3/28/2025 and 3/31/2025 which includes the application of a Digital ID/Verified Certification (lock) to support reissuance. The metadata associated with the Reissued Reports also includes the lab representative's name, the date and time the laboratory reissued the report, and an explanation for the report reissuance. The Reissued Reports are attached to this submission.

The information being submitted in this replacement Form 27 is based on currently available information attributable to the ongoing data integrity review process associated with Operator's Rule 525.e. Voluntary Disclosure. In the event additional responsive information is received or discovered, Operator will update and/or amend the statements in this submission and provide any new or revised data.

Quarterly reporting will be conducted until closure criteria are achieved for the remediation project. The SSI will be completed in accordance with the proposed implementation schedule, and the results of the SSI will be submitted on a subsequent Form 27.

NOTE: Operator requests that Tas-Chevron-5@tasman-geo.com receive notification of ECMC's response to this submission.

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

Signed: Samuel Anderson

Title: Environmental Consultant

Submit Date: _____

Email: sanderson@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: 17666

COA Type

Description

0 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
404222486	ANALYTICAL DATA SUMMARY TABLE(S)
404222494	LABORATORY ANALYTICAL REPORT
404222495	LABORATORY ANALYTICAL REPORT
404222498	LABORATORY ANALYTICAL REPORT
404222502	SITE INVESTIGATION PLAN

Total Attach: 5 Files

General Comments

User Group	Comment	Comment Date
		Stamp Upon Approval

Total: 0 comment(s)