

State of Colorado
Energy & Carbon Management Commission1120 Lincoln Street, Suite 801, Denver, Colorado 80203
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403913676

Receive Date:

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 #: 14582 Initial Form 27 Document #: 402235372

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: 336664	API #: _____	County Name: WELD
Facility Name: UPRR 21 PAN AM D-64N65W 29NESW	Latitude: 40.281460	Longitude: -104.689680	
** correct Lat/Long if needed: Latitude: 40.276346		Longitude: -104.691894	
QtrQtr: NESW	Sec: 29	Twp: 4N	Range: 65W Meridian: 6 Sensitive Area? Yes

Facility Type: SPILL OR RELEASE	Facility ID: 469264	API #: _____	County Name: WELD
Facility Name: UPRR Pan Am D 1	Latitude: 40.276346	Longitude: -104.691894	
** correct Lat/Long if needed: Latitude: _____		Longitude: _____	
QtrQtr: NESW	Sec: 29	Twp: 4N	Range: 65W Meridian: 6 Sensitive Area? Yes

SITE CONDITIONS

General soil type - USCS Classifications SW _____

Most Sensitive Adjacent Land Use Agricultural _____

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? Yes _____

Other Potential Receptors within 1/4 mile

Occupied Building 810', Wetlands 50'

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
Yes	GROUNDWATER	Source Area	Laboratory Analytical
Yes	SOILS	75' X 40' X 14'bgs	Laboratory Ananalytical

INITIAL ACTION SUMMARY

Description of initial action or emergency response measures take to abate, investigate, and/or remediate impacts associated with E&P Waste.

Produced water vessel sampling per ECOM Rule 905b.

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):

Forty-four soil samples were collected by Tasman Geosciences for analysis of TPH-DRO by EPA Method 8015, TPH-GRO, BTEX, and Naphthalene by EPA Method 8260B. Additionally, SS04@3' was analyzed for SAR by EPA 6020/USDA60(2,3A)- Dry Weight Basis, EC by EPA Method 120.1, and pH by APHA/ASTM/EPA Methods.

Proposed Groundwater Sampling

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

One groundwater sample was collected from a monitoring well installed in the source area and analyzed for BTEX by EPA Method 8260b.

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

Number of soil samples collected 44

Number of soil samples exceeding 915-1 2

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

NA / ND

-- Highest concentration of TPH (mg/kg) 5310

-- Highest concentration of SAR 0.46

BTEX > 915-1 Yes

Approximate areal extent (square feet) 400

Vertical Extent > 915-1 (in feet) 14

Groundwater

Number of groundwater samples collected 14

Was extent of groundwater contaminated delineated? No

Depth to groundwater (below ground surface, in feet) 14

Number of groundwater monitoring wells installed 21

Number of groundwater samples exceeding 915-1 3

-- Highest concentration of Benzene (µg/l) 620

ND Highest concentration of Toluene (µg/l)

-- Highest concentration of Ethylbenzene (µg/l) 1200

-- Highest concentration of Xylene (µg/l) 2600

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) 1240

Volume of liquid waste (barrels) 0

☐ 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.

Source removal was completed from November 16 through November 20, 2020. Tasman Geosciences was on location to field screen and guide the excavation. Laboratory confirmation samples were collected and submitted to Summit Scientific for analysis of TPH-DRO, TPH-GRO, BTEX, and Naphthalene.

REMEDIAL ACTION 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.

Fourteen monitoring wells were installed to delineate dissolved phase impacts. These wells will be sampled on a quarterly basis. Residual soil impacts were left in place due to access restrictions. Confirmation soil samples will be collected for Table 915-1 prior to closure. The current impacts to soil and groundwater will be addressed through active remediation.

Monitored natural attenuation (MNA) was the interim strategy for this location prior to the implementation of the Air Sparge / Soil-Vapor Extraction (AS/SVE) Remediation System. The AS/SVE System went operational at the 13 AS wells and 10 SVE wells on April 29, 2024 (Figure 2). Due to high water levels, the SVE portion of the system was shut down on May 28, 2024, and will be re-implemented following seasonal drops in groundwater elevation. AS/SVE will remain the selected remediation strategy for this location through the third quarter 2024.

Soil Remediation Summary☐ In Situ☒ Ex Situ

Bioremediation (or enhanced bioremediation)

Yes Excavate and offsite disposal

Chemical oxidation

If Yes: Estimated Volume (Cubic Yards) 1240

Air sparge / Soil vapor extraction

Name of Licensed Disposal Facility or ECMC Facility ID #

☐ Natural Attenuation
☐ Other _____

☐ No Excavate and onsite remediation
☐ Land Treatment
☐ Bioremediation (or enhanced bioremediation)
☐ Chemical oxidation
☐ Other _____

Groundwater Remediation Summary

☐ No Bioremediation (or enhanced bioremediation)
☐ No Chemical oxidation
☐ Yes Air sparge / Soil vapor extraction
☐ No Natural Attenuation
☐ Yes Other Groundwater amendment at
 base of excavation _____

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.

Fourteen groundwater monitoring wells were installed and will be sampled on a quarterly basis. Groundwater samples will be analyzed by a certified laboratory for BTEX, naphthalene, 1,2,4-TMB, and 1,3,5-TMB by EPA Method 8260B, chloride and sulfate anions by EPA Method 300.0 and total dissolved solids (TDS) by Method SM 2540C in accordance with Table 915-1.

Second quarter 2024 analytical results indicated that the benzene concentration was in exceedance of the applicable ECMC regulatory standard in monitoring well BH19R. Organic compound concentrations were in compliance with the applicable regulatory standards in the remaining 13 monitoring locations. In addition, chloride anions were in compliance with the applicable regulatory standard or within 1.25x the background concentrations recorded in the up-/cross-gradient monitoring wells (BH17, BH18, BH21, BH23R, and BH27) in all monitoring well locations. TDS and/or sulfate anion concentrations were in exceedance of the applicable regulatory standards and greater than 1.25x the background concentrations in BH01R2, BH19R, BH20, and BH22R.

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

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 1240

E&P waste (solid) description E&P solid waste derived from excavation activities

ECMC Disposal Facility ID #, if applicable:

Non-ECMC Disposal Facility: Waste Mangement; Buffalo Ridge and Ault Landfills

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? No

Does the previous reply indicate consideration of background concentrations?

Does Groundwater meet Table 915-1 standards? No

Is additional groundwater monitoring to be conducted? Yes

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? No

Does the reclamation described herein constitute interim or final reclamation of the Oil and Gas Location?

☐ Interim

☐ Final

Did the Surface Owner provide the seed mix?

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

Did the local soil conservation district provide the seed mix?

SITE RECLAMATION DATES

Proposed date of commencement of Reclamation. 04/01/2029

Proposed date of completion of Reclamation. 04/01/2032

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. 03/04/2021

Actual Spill or Release date, or date of discovery. 11/15/2019

SITE INVESTIGATION DATES

Date of Initial Actions described in Site Investigation Plan (start date). 11/11/2019

Proposed site investigation commencement.

Proposed completion of site investigation. 01/17/2020

REMEDIAL ACTION DATES

Proposed start date of Remediation. 06/03/2020

Proposed date of completion of Remediation. 12/29/2028

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 Supplemental Form 27 was submitted to summarize quarterly groundwater monitoring, remediation activities, and analytical results collected during the second quarter 2024 at the UPRR 21 Pan Am D1 location.

Monitored natural attenuation (MNA) was the interim strategy for this location prior to the implementation of the Air Sparge / Soil-Vapor Extraction (AS/SVE) Remediation System. The AS/SVE System went operational at the 13 AS wells and 10 SVE wells on April 29, 2024 (Figure 2). Due to high water levels, the SVE portion of the system was shut down on May 28, 2024, and will be re-implemented following seasonal drops in groundwater elevation. AS/SVE will remain the selected remediation strategy for this location through the third quarter 2024.

Second quarter 2024 analytical results indicated that the benzene concentration was in exceedance of the applicable ECMC regulatory standard in monitoring well BH19R. Organic compound concentrations were in compliance with the applicable regulatory standards in the remaining 13 monitoring locations. In addition, chloride anions were in compliance with the applicable regulatory standard or within 1.25x the background concentrations recorded in the up-/cross-gradient monitoring wells (BH17, BH18, BH21, BH23R, and BH27) in all monitoring well locations. TDS and/or sulfate anion concentrations were in exceedance of the applicable regulatory standards and greater than 1.25x the background concentrations in BH01R2, BH19R, BH20, and BH22R.

Per the condition of approval (COA) issued in the approved Supplemental Form 27 (Document No. 403752835), further clarification has been made on the prior and current remediation strategies at this location, and the COA has been satisfied.

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

Signed: Jake Whritenour

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: Nick Cholas

Date: 11/19/2024

Remediation Project Number: 14582

COA Type

Description

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

ATTACHMENT LIST

Upon approval, the approved Form 27 and all listed attachments will be indexed to the Remediation Project file. Only the approved Form 27 will also be indexed to the related Facilities.

Att Doc Num

Name

403913676	INVESTIGATION/REMEDIATION WORKPLAN (SUPPLEMENTAL)
403913834	MONITORING REPORT
404000052	FORM 27-SUPPLEMENTAL-SUBMITTED

Total Attach: 3 Files

General Comments

User Group

Comment

Comment Date

		Stamp Upon Approval
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Total: 0 comment(s)