FORM 27 Rev 5/22

State of Colorado
Energy & Carbon Management Commission

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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 INFORMATON

Name of Operator: NOBLE ENERGY INC Operator No: 100322
Address: 1099 18TH STREET SUITE 1500
City: DENVER State: CO Zip: 80202
Contact Person: Kris Shepherd Email: rbueuf27@chevron.com

Phone Numbers
Phone: (970) 304-5000
Mobile: ( )

PROJECT, PURPOSE & SITE INFORMATION

PROJECT INFORMATION

Remediation Project #: 23206 Initial Form 27 Document #: 403054742

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.
- [X] 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

No Multiple Facilities

Facility Type: WELL Facility ID: API #: 123-15530 County Name: WELD
Facility Name: ODLE BB19-11 Latitude: 40.383321 Longitude: -104.481335
** correct Lat/Long if needed: Latitude: Longitude:
QtrQtr: NESW Sec: 19 Twp: 5N Range: 63W Meridian: 6 Sensitive Area? Yes

SITE CONDITIONS

General soil type - USCS Classifications SW
Most Sensitive Adjacent Land Use "Forested Land,
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

HPH Y - Mule Deer Severe Winter Range
IN Freshwater Emergent Wetlands
Freshwater Pond 0.02mi N
Riparian Herbaceous 0.11mi E, 0.2mi SE, 0.11/0.21mi W
Riverine 0.04/0.08/0.11m iW, 0.02/0.04/00.1mi S, 0.06mi SE, 0.03mi SW
Freshwater Forested Shrub Wetland 0.03/0.05mi S, 0.06/0.12/0.13/0.18/0.23mi W
Riparian Forested Shrub 0.11mi S, 0.09mi SW, 0.07mi SE"

SITE INVESTIGATION PLAN

TYPE OF WASTE:

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

DESCRIPTION OF IMPACT

Impacted?	Impacted Media	Extent of Impact	How Determined
No	GROUNDWATER	Refer to Tables and Figures	Laboratory analysis and field screening
Yes	SOILS	Refer to Tables and Figures	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.

Pursuant to COGCC Rule 911 a site investigation was conducted pertaining to the ODLE BB19-11 wellhead cut and cap and flowline removal. Approximately 2,003 of flowline was removed. The wellhead was cut and capped per COGCC rules. Additionally, soil samples were collected at any points of material change and/or hammer unions, directional changes, as well as at the bell holes on either side of a waterway, AS APPLICABLE to abandonment type. The Flowline Pre-Abandonment Notice Document number was previously included under Related Forms.

PROPOSED SAMPLING PLAN

Proposed Soil Sampling

[X] Will soil samples be collected as part of this investigation? (Number, type (grab/composite), analyses, and locations of samples):

A grab soil sample was collected at the base of the excavation or the area showing the highest degree of impact during field screening activities at the wellhead excavation. Additionally, soil samples were collected at any points of material change and/or hammer unions, directional changes, as well as at the bell holes on either side of a waterway, AS APPLICABLE to abandonment type. A grab confirmation soil sample was collected at the wellhead excavation. Soil samples were analyzed by a certified laboratory for TPH (total volatile [C6-C10] and extractable [C10-C36] hydrocarbons) organic compounds in soil per COGCC Table 915-1, and EC, SAR, pH, and boron. All samples collected will be analyzed by a certified laboratory using approved COGCC laboratory analysis methods.

Proposed Groundwater Sampling

[X] 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 and inorganic compounds per COGCC 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 of the wellhead and flowline areas 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 COGCC Flowline Closure and Wellhead Closure Checklists were utilized and filled out during the abandonment process. A photolog was attached.

SITE INVESTIGATION REPORT

SAMPLE SUMMARY

Soil

Number of soil samples collected: 6
Number of soil samples exceeeding 915-1: 6
Was the areal and vertical extent of soil contamination delineated? No
Approximate areal extent (square feet): 600

NA / ND

-- Highest concentration of TPH (mg/kg): 0.634
-- Highest concentration of SAR: 7.08
BTEX > 915-1: No
Vertical Extent > 915-1 (in feet): 4

Groundwater

Number of groundwater samples collected: 1
Was extent of groundwater contaminated delineated? Yes
Depth to groundwater (below ground surface, in feet): 4
Number of groundwater monitoring wells installed: 0
Number of groundwater samples exceeding 915-1: 0

ND Highest concentration of Benzene (µg/l):
ND Highest concentration of Toluene (µg/l):
ND Highest concentration of Ethylbenzene (µg/l):
ND Highest concentration of Xylene (µg/l):
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?

Refer to the Remedial Action Plan Remediation Summary for details.

REMEDIAL ACTION PLAN

Does this Supplemental Form 27A include changes to a previously approved Remedial Action Plan? Yes

SOURCE REMOVAL SUMMARY

Describe how source is to be removed.

Impacted soil was removed from the Odle BB 19-11 flowline release area by excavation. The impacted soil was disposed of at an approved landfill as non-hazardous waste in accordance with Rules 905 and 906.

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.

The Odle BB 19-11 flowline release area was excavated, and confirmation soil samples were collected and analyzed for the full Table 915-1 suite of analytes.

Groundwater was encountered during the excavation of impacted soil, and a groundwater sample was collected for Table 915-1 organic and inorganic constituents in groundwater (Benzene, Toluene, Ethylbenzene, Total Xylenes (BTEX), naphthalene, 1,2,4-Trimethylbenzene, 1,3,5-Trimethylbenzene, Chloride ion, Sulfate ion and Total Dissolved Solids (TDS). The laboratory analyses indicate that organic petroleum constituents in soil samples collected from the sidewalls and floor of the excavation achieved the Colorado Energy and Carbon Management Commission's (ECMC) Table 915-1 protection of groundwater soil screening levels (PGSSLs). However, five samples exceeded the ECMC Table 915-1 residential soil screening levels (RSSLs) for arsenic and one sample exceeded the 915-1 RSSLs for chromium VI , barium exceeded the ECMC PGSSLs and pH, SAR, and EC exceeded the ECMC soil suitability standards for reclamation.

Background samples will be collected in five locations from an area not impacted by oil and gas development at similar depths and lithologies as confirmation samples collected from the excavation and analyzed for ECMC Table 915-1 metals and soil suitability for reclamation standards (SSR) (pH, EC, SAR, and Boron). The samples will be used to characterize native soil and potentially attribute elevated metals and inorganics concentrations to native soil conditions. Sample locations are displayed on Figure 4 of the attached. NFA status is estimated to be achieved in Q1 2027.

Soil Remediation Summary

☐ **In Situ**

- ____ Bioremediation (or enhanced bioremediation)
- ____ Chemical oxidation
- ____ Air sparge / Soil vapor extraction
- ____ Natural Attenuation
- ____ Other ____

☒ **Ex Situ**

- Yes Excavate and offsite disposal
  - If Yes: Estimated Volume (Cubic Yards) 48
  - Name of Licensed Disposal Facility or ECMC Facility ID # ____
- No Excavate and onsite remediation
  - ____ 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 during the flowline decommissioning and during excavation of impacted soil. Groundwater samples were collected for Table 915-1 organic and inorganic constituents in groundwater (Benzene, Toluene, Ethylbenzene, Total Xylenes (BTEX), naphthalene, 1,2,4-Trimethylbenzene, 1,3,5-Trimethylbenzene, Chloride ion, Sulfate ion and Total Dissolved Solids (TDS).The laboratory analyses indicate that organic and inorganic petroleum constituents in groundwater collected from the excavation floor achieved the Colorado Energy and Carbon Management Commission's (ECMC) Table 915-1 groundwater standards.

The potential for soil impacts to communicate with groundwater existed prior to the excavation of soil impacts. The Operator proposes to install soil borings that will be improved with temporary PVC monitoring wells. One monitoring well will be installed within the source area (if possible) and additional wells will be installed to monitor up-gradient, down-gradient, and cross-gradient groundwater conditions. Each soil boring location will have the soil type logged, will be field screened with a PID, and the interval with the highest PID measurement and/or the interval directly above groundwater will be collected and submitted for analysis of Table 915-1 constituents in soil. Quarterly groundwater monitoring will be conducted until four consecutive quarters of groundwater sampling have been completed and reported at the location with concentrations of Table 915-1 constituents below regulatory limits. Groundwater monitoring wells will be sampled and submitted to a laboratory for analysis of Table 915-1 groundwater constituents: Benzene, Toluene, Ethylbenzene, Total Xylenes (BTEX), naphthalene, 1,2,4-Trimethylbenzene, 1,3,5-Trimethylbenzene, Chloride ion, Sulfate ion and Total Dissolved Solids (TDS). Monitoring well locations are displayed on Figure 5 of the attached.

REMEDIATION PROGRESS UPDATE

PERIODIC REPORTING

Approved Reporting Schedule:

[X] 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

[X] Other Timeline Update: Monitoring Well Installation and BKG Sample Location 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? 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 48

E&P waste (solid) description hydrocarbon impacted soil

ECMC Disposal Facility ID #, if applicable:

Non-ECMC Disposal Facility: Buffalo Ridge Landfill Keenesburg, CO

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? 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 ECMC1000 Series Rules.

Is the described reclamation complete? Yes

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

[X] 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. 06/30/2026

Proposed date of completion of Reclamation. 06/30/2028

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. 04/28/2022

Actual Spill or Release date, or date of discovery. 08/16/2022

SITE INVESTIGATION DATES

Date of Initial Actions described in Site Investigation Plan (start date). 06/18/2022

Proposed site investigation commencement. 05/02/2022

Proposed completion of site investigation. 09/29/2023

REMEDIAL ACTION DATES

Proposed start date of Remediation. 08/16/2022

Proposed date of completion of Remediation. 01/31/2027

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.

[X] Change from approved implementation schedule per Rule 913.d.(2).

Basis for change in implementation schedule:

The implementation schedule has been changed due to the need to characterize native soil conditions adjacent to the former Odle BB 19-11 flowline and monitor groundwater for a minimum of four quarters at the flowline release location. The proposed background sampling will be completed following the approval of this form.

OPERATOR COMMENT

This Form 27 is being submitted as a timeline update for the the Odle BB-19-11 (Flowline), REM 23206 location.

The review status of the previously proposed workplan (Doc. # 404321657) is "In Process" on Web Forms. Pending ECMC EPS form review/approval, the Operator will complete the additional site investigation and remediation as outlined on Doc. # 403745826 and this F27.

Background samples will be collected in five locations from an area not impacted by oil and gas development at similar depths and lithologies as confirmation samples collected from the excavation and analyzed for ECMC Table 915-1 metals and soil suitability for reclamation standards (SSR) (pH, EC, SAR, and Boron). The samples will be used to characterize native soil and potentially attribute elevated metals and inorganics concentrations to native soil conditions. Sample locations are displayed on Figure 4 of the attached.

Though impacted groundwater was not encountered over the course of remedial activities conducted at the site the potential for soil impacts to communicate with groundwater existed prior to excavation of soil impacts. The Operator will install monitoring wells (within the spill/release area, cross gradient, down-gradient, and up-gradient) to properly characterize groundwater pursuant to Rule 915. The Operator will analyze groundwater samples from all monitoring wells for Organic Compounds in Groundwater (benzene, toluene, ethylbenzene, xylenes, naphthalene, 1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene) and the Groundwater Inorganic Parameters (total dissolved solids, chloride, sulfate) for a minimum of four quarterly monitoring events. Monitoring well locations are displayed on Figure 5 of the attached.

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.at

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

Signed: Ethan Black Title: Consultant

Submit Date: Email: ethanb@fremontenv.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: 23206

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
404459658	SITE INVESTIGATION PLAN

Total Attach: 1 Files

General Comments

User Group	Comment	Comment Date
		Stamp Upon Approval

Total: 0 comment(s)