

State of Colorado
Energy & Carbon Management Commission

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Document Number:

403959594

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: (303) 597-6847 |
| City: DENVER | State: CO | Zip: 80202 |
| Contact Person: Phillip Porter | Email: phillip.porter@chevron.com | Mobile: () |

PROJECT, PURPOSE & SITE INFORMATION

PROJECT INFORMATION

Remediation Project #: 22468 Initial Form 27 Document #: 402986366

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

No Multiple Facilities

| | | | |
|--|---------------------|------------------------|-------------------|
| Facility Type: PIT | Facility ID: 112054 | API #: _____ | County Name: WELD |
| Facility Name: LILLI UNIT 3-15 | Latitude: 40.667526 | Longitude: -103.851175 | |
| ** correct Lat/Long if needed: Latitude: _____ | | Longitude: _____ | |
| QtrQtr: NENW | Sec: 15 | Twp: 8N | Range: 58W |
| Meridian: 6 | Sensitive Area? Yes | | |

SITE CONDITIONS

General soil type - USCS Classifications SP Most Sensitive Adjacent Land Use Rangeland

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

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 |
|-----------|----------------|------------------|-----------------------|
| No | GROUNDWATER | NA | not encountered |
| Yes | SOILS | TBD | Laboratory Analytical |

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 desktop review was conducted in regards to a historical pit located in close proximity to the Lilli Unit 3-15 plugged and abandoned wellhead. Historical pit assessment activities completed November 2022 per approved workplan (doc. # 402986366).

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):

One grab soil sample was collected at the highest PID field screening location in the soil bore and analyzed by a certified laboratory for TPH C6-36, organics, pH, EC, and SAR.

Additional assessment activities will be completed to laterally and vertically define soil concentrations at the site. Soil samples will be submitted for full ECMC Table 915-1 analysis (TPH, organics, inorganics, and metals).

All samples collected were/will be 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 the soil bores will be converted to monitoring wells. A groundwater sample will be collected for analysis by a certified laboratory for BTEX, naphthalene, 1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene, and inorganic groundwater parameters.

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 1

Number of soil samples exceeding 915-1 1

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

Approximate areal extent (square feet) 100

NA / ND

ND Highest concentration of TPH (mg/kg)

-- Highest concentration of SAR 1.81

BTEX > 915-1 No

Vertical Extent > 915-1 (in feet) 8

Groundwater

Number of groundwater samples collected 0

Was extent of groundwater contaminated delineated? No

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?

Backgrounds (5+) will be collected from soil of native/similar lithologic material not impacted by oil and gas activity to compare EC, SAR, pH, boron, and ECMC Table 915-1 metals, as needed.

☐ 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?

Per conversations with ECMC, a historical release was not reported following the initial historical pit assessment completed November 2022 (correspondence included under attachments). Delineation activities will be completed to laterally and vertically define residual concentrations exceeding ECMC Table 915-1 Protection of Groundwater Soil Screening Levels (GSSLs). Soil samples will be collected for full ECMC Table 915-1 analysis (TPH, organics, inorganics, and metals).

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.

The investigative sample collected at the Lilli Unit 3-15 historical pit location contained Table 915-1 impacts above Protection of Groundwater Soil Screening Levels for 1-methylnaphthalene at 0.0374 mg/kg, 2-methylnaphthalene at 0.067 mg/kg, benzo(a)anthracene 0.629 mg/kg, benzo(a)pyrene at 0.44 mg/kg, benzo(b)fluoranthene at 0.419 mg/kg, and dibenzo(a,h)anthracene at 0.096 mg/kg.

Per the approved Form 27 Doc # 402986366, the soil boring was advanced to refusal when at approximately 9.5' bgs, a well-consolidated claystone was encountered. Hydrocarbon staining and odor were not observed, and the sample was collected from the interval with the highest PID reading (5-7.5' = PID of 5.8 ppm-v). Groundwater was not encountered.

Per conversations with ECMC, a historical release was not reported following the initial historical pit assessment completed November 2022 (correspondence included under attachments).

Delineation activities will be completed to laterally and vertically define residual concentrations exceeding ECMC Table 915-1 Protection of Groundwater Soil Screening Levels (GSSLs). Soil samples will be collected for full ECMC Table 915-1 analysis (TPH, organics, inorganics, and metals).

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.

Once residual GSSLs at the site are laterally and vertically defined, Noble proposes to close this location based on Residential Screening Levels due to the absence of groundwater and the presence of a confining layer below the observed impacts. Delineation activities are tentatively scheduled for first quarter 2025.

Soil Remediation Summary

☐ In Situ

☐ Ex Situ

_____ Bioremediation (or enhanced bioremediation)

_____ Chemical oxidation

_____ Air sparge / Soil vapor extraction

_____ Natural Attenuation

_____ Other _____

_____ Excavate and offsite disposal

_____ If Yes: Estimated Volume (Cubic Yards) _____

_____ Name of Licensed Disposal Facility or ECMC Facility ID # _____

_____ 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

_____ 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.

If groundwater is encountered the soil bores will be converted to monitoring wells. A groundwater sample will be collected for analysis by a certified laboratory for BTEX, naphthalene, 1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene, and inorganic groundwater parameters. Additional monitoring will be proposed in a supplemental Form 27, as needed.

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 Timeline Update

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: \$ 10000

WASTE DISPOSAL INFORMATION

Was E&P waste generated as part of this remediation? _____

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? 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.

If disturbance occurs 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. 11/22/2022

Proposed date of completion of Reclamation. 08/01/2028

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. 03/16/2022

Actual Spill or Release date, or date of discovery. 12/05/2022

SITE INVESTIGATION DATES

Date of Initial Actions described in Site Investigation Plan (start date). 11/22/2022

Proposed site investigation commencement. 03/16/2022

Proposed completion of site investigation. 03/31/2025

REMEDIAL ACTION DATES

Proposed start date of Remediation. 11/22/2022

Proposed date of completion of Remediation. 08/01/2025

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:

This form is being submitted to serve as a timeline update. Implementation schedule updated to reflect the schedule to complete the supplemental site investigation. The ECMC will be updated on a subsequent Form 27 with the results of the supplemental site investigation, or if the schedule is changed due to site access constraints. The timeline previously proposed for the supplemental site investigation was extended due to scheduling conflicts.

OPERATOR COMMENT

The investigative sample collected at the Lilli Unit 3-15 historical pit location contained Table 915-1 impacts above Protection of Groundwater Soil Screening Levels for 1-methylnaphthalene at 0.0374 mg/kg, 2-methylnaphthalene at 0.067 mg/kg, benzo(a)anthracene 0.629 mg/kg, benzo(a)pyrene at 0.44 mg/kg, benzo(b)fluoranthene at 0.419 mg/kg, and dibenzo(a,h)anthracene at 0.096 mg/kg.

Per the approved Form 27 Doc # 402986366, the soil boring was advanced to refusal when at approximately 9.5' bgs, a well-consolidated claystone was encountered. Hydrocarbon staining and odor were not observed, and the sample was collected from the interval with the highest PID reading (5-7.5' = PID of 5.8 ppm-v). Groundwater was not encountered. The Historical Pit Assessment Summary was previously attached to Form 27 Doc # 403781461, included under related forms.

Per conversations with ECMC, a historical release was not reported following the initial historical pit assessment completed November 2022 (correspondence included under attachments).

Delineation activities will be completed to laterally and vertically define residual concentrations exceeding ECMC Table 915-1 Protection of Groundwater Soil Screening Levels (GSSLs). Soil samples will be collected for full ECMC Table 915-1 analysis (TPH, organics, inorganics, and metals). Backgrounds (5+) will be collected from soil of native/similar lithologic material not impacted by oil and gas activity to compare EC, SAR, pH, boron, and ECMC Table 915-1 metals, as needed.

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This form is being submitted to serve as a timeline update. Implementation schedule updated to reflect the schedule to complete the supplemental site investigation. The timeline previously proposed for the supplemental site investigation was extended due to scheduling conflicts.

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

Signed: Secondary Reviewer

Title: Environmental Consultant

Submit Date: _____

Email: cvxform27@erm.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: 22468

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**

| | |
|-----------|---------------------------|
| 403959770 | CORRESPONDENCE |
| 403965866 | SITE INVESTIGATION REPORT |

Total Attach: 2 Files

General Comments**User Group****Comment****Comment Date**

| | | |
|--|--|---------------------|
| | | Stamp Upon Approval |
|--|--|---------------------|

Total: 0 comment(s)