

State of Colorado
Energy & Carbon Management Commission

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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: (303) 597-6847
City: DENVER State: CO Zip: 80202		Mobile: ()
Contact Person: Phillip Porter	Email: RBUEUF27@chevron.com	

PROJECT, PURPOSE & SITE INFORMATION

PROJECT INFORMATION

Remediation Project #: 22548 Initial Form 27 Document #: 402991588

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: WELL	Facility ID: _____	API #: 123-15521	County Name: WELD
Facility Name: SANDAU 34-12F	Latitude: 40.266780	Longitude: -104.770970	
** correct Lat/Long if needed: Latitude: _____		Longitude: _____	
QtrQtr: NWSW	Sec: 34	Twp: 4N	Range: 66W Meridian: 6 Sensitive Area? Yes
Facility Type: SPILL OR RELEASE	Facility ID: 482089	API #: _____	County Name: WELD
Facility Name: Sandau 34-12F	Latitude: 40.266780	Longitude: -104.770970	
** correct Lat/Long if needed: Latitude: _____		Longitude: _____	
QtrQtr: NWSW	Sec: 34	Twp: 4N	Range: 66W Meridian: 6 Sensitive Area? Yes

SITE CONDITIONS

General soil type - USCS Classifications SC

Most Sensitive Adjacent Land Use Crop 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? No

Other Potential Receptors within 1/4 mile

Farm Structures 0.08mi N, 0.09/0.1mi N, 0.15/0.16/0.17mi W, 0.24mi SW
Residential 0.1mi NW, 0.13mi W, 0.22mi SW

DENIED

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	Lab analysis
Yes	SOILS	TBD	Lab analysis

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 pertaining to the SANDAU 34-12F wellhead cut and cap and flowline abandonment. Approximately 502' of flowline were removed. The wellhead was cut and capped per ECMC rules.

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 (1) grab soil sample was collected at the wellhead excavation. The wellhead soil sample was 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, EC, SAR, pH, and boron. One (1) waste characterization sample for ECMC Table 915-1 metals was collected.

Two (2) grab soil samples were collected at the flowline terminuses at the separator (1) and wellhead (1). The soil sample collected at the separator connection was 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, EC, SAR, pH, and boron. The soil sample collected at the flowline connection to the wellhead was analyzed for full Table 915-1 suites, including 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):

Monitoring wells MW-01 through MW-05 will be sampled on a quarterly basis. Groundwater will be analyzed for BTEX, naphthalene, 1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene, 1-methylnaphthalene, 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):

SITE INVESTIGATION REPORT

SAMPLE SUMMARY

Soil

Number of soil samples collected 1
Number of soil samples exceeding 915-1 0
Was the areal and vertical extent of soil contamination delineated? No
Approximate areal extent (square feet) 0

NA / ND

ND Highest concentration of TPH (mg/kg) _____
-- Highest concentration of SAR 1.73
BTEX > 915-1 No
Vertical Extent > 915-1 (in feet) 0

Groundwater

Number of groundwater samples collected 5
Was extent of groundwater contaminated delineated? Yes
Depth to groundwater (below ground surface, in feet) 7
Number of groundwater monitoring wells installed 5
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?

Empty text box for response to impact question.

Were background samples collected as part of this site investigation?

A background sample for arsenic analysis was collected during wellhead decommissioning activities. Additional backgrounds were collected during the supplemental site investigation for analysis of inorganic compounds and metals per ECMC Table 915-1. Additional backgrounds (3+) will be collected from soil of native/similar lithologic material not impacted by oil and gas activity to further compare inorganic compounds and 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?

Soil samples will be collected to confirm the vertical and lateral extents of the impacts following source removal. Additional backgrounds (3+) will be collected from soil of native/similar lithologic material not impacted by oil and gas activity to further compare inorganic compounds and metals, as needed.

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.

Residual petroleum hydrocarbon impacts identified at the former wellhead will be removed through excavation. Soil samples will be collected to confirm the vertical and lateral extents of the impacts following source removal. Noble proposes samples be collected for analysis of full ECMC Table 915-1 analytical suites..

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 source will be excavated and confirmation soil samples will be collected and analyzed for the full Table 915-1 suite to confirm the vertical and lateral extents of the impacts following source removal. Residual hydrocarbon petroleum impacts were delineated at the site, and GSSLs were determined to be applicable. Five (5) soil borings were completed as monitoring wells. Additional backgrounds (3+) will be collected from soil of native/similar lithologic material not impacted by oil and gas activity to further compare inorganic compounds and metals, as needed.

As of November, 2024, four consecutive quarters of groundwater concentrations compliant with ECMC Table 915-1 regulatory limits have been observed. NFA will be considered when soil concentrations are in compliance with ECMC Table 915-1 standards.

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.

Monitoring wells MW-01 through MW-05 will be sampled on a quarterly basis. Groundwater will be analyzed for BTEX, naphthalene, 1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene, 1-methylnaphthalene, and inorganic parameters per ECMC Table 915-1.

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.

Operator anticipates the remaining cost for this project to be: \$ 85000 _____

WASTE DISPOSAL INFORMATION

Was E&P waste generated as part of this remediation? No _____

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.

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. 04/14/2022

Proposed date of completion of Reclamation. 10/31/2028

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. 02/09/2022

Actual Spill or Release date, or date of discovery. 04/26/2022

SITE INVESTIGATION DATES

Date of Initial Actions described in Site Investigation Plan (start date). 04/14/2022

Proposed site investigation commencement. 04/14/2022

Proposed completion of site investigation. 03/31/2025

REMEDIAL ACTION DATES

Proposed start date of Remediation. 04/26/2022

Proposed date of completion of Remediation. 03/31/2025

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:

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. Excavation is needed to address residual impacts observed at the former wellhead location.

OPERATOR COMMENT

The wellhead and flowline decommissioning assessments were completed at the SANDAU 34-12F location in accordance with approved initial Form 27 Doc. # 402991588, included under related forms. Results of the flowline removal assessment are included in current submittal.

Residual petroleum hydrocarbon impacts identified at the former wellhead will be removed through excavation. Soil samples will be collected to confirm the vertical and lateral extents of the impacts following source removal. Additional backgrounds (3+) will be collected from soil of native/similar lithologic material not impacted by oil and gas activity to further compare inorganic compounds and metals, as needed.

As of November, 2024, four consecutive quarters of groundwater concentrations compliant with ECMC Table 915-1 regulatory limits have been observed. NFA will be considered when soil concentrations are in compliance with ECMC Table 915-1 standards.

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

Signed: William Schoff

Title: Environmental Consultant

Submit Date: 12/21/2024

Email: cvxeform@eagle-enviro.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: 22548

COA Type

Description

0 COA	
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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

404030260	FORM 27-SUPPLEMENTAL-SUBMITTED
404030488	SITE INVESTIGATION REPORT
404030489	MONITORING REPORT
404030492	ANALYTICAL RESULTS
404030493	ANALYTICAL RESULTS
404030494	ANALYTICAL RESULTS

Total Attach: 6 Files

General Comments

User Group

Comment

Comment Date

Environmental	ECMC has not conducted a complete technical review of this form, data, or attachments but is denying this Form. Operator will conduct a thorough review of all laboratory analytical reports and data as it relates to this project.	01/09/2025
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Total: 1 comment(s)