

State of Colorado
Energy & Carbon Management Commission

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Document Number:
403980320

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: <u>NOBLE ENERGY INC</u>	Operator No: <u>100322</u>	Phone Numbers
Address: <u>1099 18TH STREET SUITE 1500</u>		Phone: <u>(970) 313-5582</u>
City: <u>DENVER</u> State: <u>CO</u> Zip: <u>80202</u>		Mobile: <u>()</u>
Contact Person: <u>Jason Davidson</u>	Email: <u>jason.davidson@chevron.com</u>	

PROJECT, PURPOSE & SITE INFORMATION

PROJECT INFORMATION

Remediation Project #: 29144 Initial Form 27 Document #: 403387088

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: <u>WELL</u>	Facility ID: _____	API #: <u>123-09739</u>	County Name: <u>WELD</u>
Facility Name: <u>VERN MARSHALL 1</u>	Latitude: <u>40.267290</u>	Longitude: <u>-104.694090</u>	
** correct Lat/Long if needed: Latitude: _____		Longitude: _____	
QtrQtr: <u>NWSW</u>	Sec: <u>32</u>	Twp: <u>4N</u>	Range: <u>65W</u> Meridian: <u>6</u> Sensitive Area? <u>Yes</u>
Facility Type: <u>SPILL OR RELEASE</u>	Facility ID: <u>485132</u>	API #: _____	County Name: <u>WELD</u>
Facility Name: <u>Vern Marshall 1</u>	Latitude: <u>40.266256</u>	Longitude: <u>-104.692391</u>	
** correct Lat/Long if needed: Latitude: _____		Longitude: _____	
QtrQtr: <u>NWSW</u>	Sec: <u>32</u>	Twp: <u>4N</u>	Range: <u>65W</u> Meridian: <u>6</u> Sensitive Area? <u>Yes</u>

SITE CONDITIONS

General soil type - USCS Classifications SW _____

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

Riverine 0.18mi SE, 0.22mi NW
Freshwater Pond 0.09mi NW
Pond 0.14mi SE
Residence 0.16mi NW, 0.23mi S, 0.17/0.19/0.25mi SW
Well located within livestock pen
Farm structure 0.07/0.08/0.10/0.12/0.14/0.25mi NW

SITE INVESTIGATION PLAN

TYPE OF WASTE:

- | | | |
|--|--|--|
| <input checked="" type="checkbox"/> E&P Waste | <input type="checkbox"/> Other E&P Waste | <input type="checkbox"/> Non-E&P Waste |
| <input checked="" type="checkbox"/> Produced Water | <input type="checkbox"/> Workover Fluids | _____ |
| <input checked="" type="checkbox"/> Oil | <input type="checkbox"/> Tank Bottoms | |
| <input checked="" type="checkbox"/> Condensate | <input type="checkbox"/> Pigging Waste | |
| <input type="checkbox"/> Drilling Fluids | <input type="checkbox"/> Rig Wash | |
| <input type="checkbox"/> Drill Cuttings | <input type="checkbox"/> Spent Filters | |
| | <input type="checkbox"/> Pit Bottoms | |
| | <input type="checkbox"/> Other (as described by EPA) | _____ |

DESCRIPTION OF IMPACT

Impacted?	Impacted Media	Extent of Impact	How Determined
UNDETERMINED	GROUNDWATER	NA	Lab analysis if encountered
Yes	SOILS	Refer to Tables & 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 pertaining to the MARSHALL VERN 1 wellhead cut and cap and flowline removal. The wellhead was cut and capped per ECMC rules. The flowline was partially abandoned in place and the Form 44 Flowline Abandonment Notice Document Number is included under Related Forms. Additionally, soil samples were field screened at the N-E-S-W sides of the wellhead cut and cap excavation area, and soil samples were taken at the base of the wellhead excavation and at either end of the flowline during abandonment activities.

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):

A grab soil sample was collected at the base of the cut and cap excavation area or the area showing the highest degree of impact during field screening activities at the wellhead excavation. Additionally, soil samples were field screened at the N-E-S-W sides of the wellhead. Soil samples were taken at either end of the flowline during abandonment activities. 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, metals in soil per ECMC Table 915-1, EC, SAR, pH, and boron. All samples collected were analyzed by a certified laboratory using ECMC-approved 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 forthcoming site investigation activities, groundwater samples will be collected and analyzed for all organic and inorganic compounds in groundwater 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 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 ECMC Flowline Closure and Wellhead Closure Checklists were utilized and filled out during the abandonment process. Detailed summaries of the wellhead and flowline decommissioning activities, including field notes, site photos, figures, and laboratory analytical results are were submitted to the ECMC attached to Form 27 Document #403683172.

SITE INVESTIGATION REPORT

SAMPLE SUMMARY

Soil

Number of soil samples collected 10
Number of soil samples exceeding 915-1 1
Was the areal and vertical extent of soil contamination delineated? Yes
Approximate areal extent (square feet) 100

NA / ND

ND Highest concentration of TPH (mg/kg) _____
-- Highest concentration of SAR 1.22
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?

Ten background soil samples were collected near the flowline and analyzed for arsenic, pH, SAR, and EC. Background soil samples were collected from depths ranging between 4 to 8 feet below ground surface (ft bgs) and the lithology between the site and background locations were observed to be sandy clays. The maximum background concentration for pH was observed to be 8.70. The maximum background concentration with a 1.25x multiplier applied for arsenic was calculated to be 4.90 mg/kg. All pH and arsenic concentrations observed during decommissioning and supplemental site investigation (SSI) activities 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?

Concurrently with the remedial excavation that is proposed in the Remedial Action Plan section of this Form 27, background soil samples will be collected to determine if pH and arsenic are attributed to native soil conditions at the site.

Additional background samples were initially proposed near the wellhead on a previous form 27, ECOM document #403683172, but were not completed due to time constraints. However, due to the background samples advanced adjacent to the tank battery, additional background sampling adjacent to the wellhead does not appear to be necessary at this time.

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.

The organic compound exceedances observed at sample locations BH02@4' and FL01-B@4' will be removed through a remedial excavation.

REMEDATION 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 Site Assessment was conducted on 01/03/2024 to delineate impacted media, during which five soil borings were advanced. BH01 was advanced at the same location as the waste characterization sample FL01-B@4' to vertically delineate impacts at that location. BH02-BH05 were advanced surrounding BH01 to vertically and laterally delineate impacts identified at FL01-B@4'. Soil samples were collected and analyzed for Organic compounds in soil per ECMC Table 915-1, TPH, arsenic, pH, EC, and SAR per the amended sampling plan that was approved under ECMC document number 403683172. Groundwater was encountered during this assessment, however, due to the depth of groundwater being present at the terminus of the soil borings and not in contact with impacted material, no groundwater samples were able to be collected. Soil boring sample BH01@4' was collected from the same location as waste characterization samples FL01-B@4'. The organic compounds exceeding ECMC Table 915-1 standards identified during decommissioning at FL01-B@4' was not repeated by resample location BH01@4', but a benzo(a)anthracene exceedance was observed at BH02@4'.

Remedial excavation confirmation soil samples will be collected and analyzed for full ECMC Table 915-1 constituents. The results of the remedial excavation will be submitted on a subsequent Form 27.

Soil Remediation Summary

In Situ

Ex Situ

_____ Bioremediation (or enhanced bioremediation)

_____ Excavate and offsite disposal

_____ Chemical oxidation

_____ If Yes: Estimated Volume (Cubic Yards) _____

_____ Air sparge / Soil vapor extraction

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

_____ Natural Attenuation

_____ 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.

If groundwater is encountered during the proposed remedial excavation, a grab groundwater sample will be collected and submitted for all organic and inorganic compounds in groundwater per ECMC Table 915-1. Additionally, if groundwater is observed to be in contact with impacts, a temporary monitoring well network will be proposed in a subsequent form 27 to confirm the absence of dissolved phase hydrocarbons in the groundwater.

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 SSI Report, Supplemental Source Mass Removal 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 (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? 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? _____

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 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?

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. 07/26/2023

Proposed date of completion of Reclamation. 11/04/2026

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. 12/27/2022

Actual Spill or Release date, or date of discovery. 09/20/2023

SITE INVESTIGATION DATES

Date of Initial Actions described in Site Investigation Plan (start date). 07/26/2023

Proposed site investigation commencement. 11/04/2024

Proposed completion of site investigation. 05/04/2025

REMEDIAL ACTION DATES

Proposed start date of Remediation. 05/04/2025

Proposed date of completion of Remediation. 05/04/2026

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 been changed due to the completion of the January 2024 supplemental site investigation (SSI) at the Vern Marshall 1 flowline and necessity for remedial excavation activities adjacent to the flowline. The proposed remedial excavation will be completed following the approval of this form, landowner negotiations, and crew availability.

OPERATOR COMMENT

This Form 27 is being submitted to include the supplemental site investigation (SSI) results for the former Vern Marshall 1 flowline location. A proposal to excavate the organic compound exceedances identified during decommissioning and SSI activities at soil samples FL01-B@4' and BH02 @ 4' is presented in the Remedial Action Plan section of this Form 27. Remedial excavation confirmation soil samples will be collected and analyzed for full ECMC Table 915-1 constituents. The results of the remedial excavation will be submitted on a subsequent Form 27.

Ten background soil samples were collected near the flowline and analyzed for arsenic, pH, SAR, and EC. Background soil samples were collected from depths ranging between 4 to 8 feet below ground surface (ft bgs) and the lithology between the site and background locations were observed to be sandy clays. The maximum background concentration for pH was observed to be 8.70. The maximum background concentration with a 1.25x multiplier applied for arsenic was calculated to be 4.90 mg/kg. All pH and arsenic concentrations observed during decommissioning and SSI activities were below background levels.

A Site Assessment was conducted on 01/03/2024 to delineate impacted media, during which five soil borings were advanced. BH01 was advanced at the same location as the waste characterization sample FL01-B@4' to vertically delineate impacts at that location. BH02-BH05 were advanced surrounding BH01 to vertically and laterally delineate impacts identified at FL01-B@4'. Soil samples were collected and analyzed for Organic compounds in soil per ECMC Table 915-1, TPH, arsenic, pH, EC, and SAR per the amended sampling plan that was approved under ECMC document number 403683172. Groundwater was not encountered during this assessment. Soil boring sample BH01@4' was collected from the same location as waste characterization samples FL01-B@4'. The organic compounds exceeding ECMC Table 915-1 standards identified during decommissioning at FL01-B@4' was not repeated by resample location BH01@4', but a benzo(a)anthracene exceedance was observed at BH02@4'.

A technical review of all laboratory analytical data associated with this Site has been completed. Laboratory data is reflective of field conditions. Quarterly reporting will be conducted until closure criteria are achieved for the remediation project. The results of the supplemental site investigation will be submitted on a subsequent Form 27.

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: _____

Email: tas-chevron-4@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: 29144

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

403989728	ANALYTICAL RESULTS
403989731	ANALYTICAL RESULTS
403989733	ANALYTICAL RESULTS
403989952	MONITORING REPORT

Total Attach: 4 Files

General Comments

User Group

Comment

Comment Date

		Stamp Upon Approval
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Total: 0 comment(s)