

State of Colorado
Energy & Carbon Management Commission

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Document Number:
404075636

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 #: 17229 Initial Form 27 Document #: 402616629

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>123-23386</u>	County Name: <u>WELD</u>
Facility Name: <u>KASTNER 41-3</u>	Latitude: <u>40.521710</u>	Longitude: <u>-104.642590</u>	
** correct Lat/Long if needed: Latitude: _____		Longitude: _____	
QtrQtr: <u>NENE</u>	Sec: <u>3</u>	Twp: <u>6N</u>	Range: <u>65W</u> Meridian: <u>6</u> Sensitive Area? <u>Yes</u>

Facility Type: <u>FLOWLINE SYSTEM</u>	Facility ID: <u>469881</u>	API #: _____	County Name: _____
Facility Name: _____	Latitude: _____	Longitude: _____	
** correct Lat/Long if needed: Latitude: <u>40.521710</u>		Longitude: <u>-104.642590</u>	
QtrQtr: _____	Sec: _____	Twp: _____	Range: _____ Meridian: _____ Sensitive Area? <u>Yes</u>

Facility Type: SPILL OR RELEASE Facility ID: 479965 API #: _____ County Name: WELD
Facility Name: Kastner 41-03 Latitude: 40.521874 Longitude: -104.649121
** correct Lat/Long if needed: Latitude: _____ Longitude: _____
QtrQtr: NWNE Sec: 3 Twp: 6N Range: 65W Meridian: 6 Sensitive Area? Yes

SITE CONDITIONS

General soil type - USCS Classifications SW Most Sensitive Adjacent Land Use crop

Is domestic water well within 1/4 mile? Yes Is surface water within 1/4 mile? No

Is groundwater less than 20 feet below ground surface? No

Other Potential Receptors within 1/4 mile

Multiple Occupied buildings within 1/4 mile radius

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
No	GROUNDWATER	NA	Site Assessment
Yes	SOILS	40' X 20' X 4' bgs	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.

Pursuant to ECMC Rule 911 a site investigation was conducted pertaining to the KASTNER 41-03 wellhead cut and cap and flowline removal. The wellhead was cut and capped per ECMC rules. A portion of the flowline was abandoned in place due to field constraints. The Flowline Abandonment Form 44 Document number is included under Related Forms.

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):

Three (3) grab soil samples were collected during decommissioning activities, and eighteen (18) borehole soil samples were collected during supplemental site assessment activities. The soil samples were submitted for analysis by a certified laboratory for TPH (total volatile [C6-C10] and extractable [C10-C36] hydrocarbons) organic compounds in soil per ECMC Table 915-1, pH, and/or EC, SAR, and boron. Additionally, soil sample BH01@4' was analyzed for metals in soil per ECMC Table 915-1.

Proposed Groundwater Sampling

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

If groundwater is encountered during site investigation activities, a grab groundwater will be collected and analyzed for all organic 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):

A supplemental Site Assessment was conducted to vertically and laterally delineate naphthalene at borehole BH04, which was identified during an initial site assessment. A total of four supplemental soil borings were advanced in the area of impacts. Soil samples were collected and analyzed for TPH (total volatile [C6-C10] and extractable [C10-C36] hydrocarbons), organic compounds in soil per ECMC Table 915-1, and pH. Groundwater was not encountered during site assessment activities, and moisture was not observed within 14 feet of the ground surface in all borings.

SITE INVESTIGATION REPORT

SAMPLE SUMMARY

Soil

NA / ND

Number of soil samples collected 32 -- Highest concentration of TPH (mg/kg) 117
 Number of soil samples exceeding 915-1 12 -- Highest concentration of SAR 0.958
 Was the areal and vertical extent of soil contamination delineated? No BTEX > 915-1 No
 Approximate areal extent (square feet) 800 Vertical Extent > 915-1 (in feet) 12

Groundwater

Number of groundwater samples collected 0 Highest concentration of Benzene (µg/l) _____
 Was extent of groundwater contaminated delineated? Yes Highest concentration of Toluene (µg/l) _____
 Depth to groundwater (below ground surface, in feet) _____ Highest concentration of Ethylbenzene (µg/l) _____
 Number of groundwater monitoring wells installed _____ Highest concentration of Xylene (µg/l) _____
 Number of groundwater samples exceeding 915-1 _____ 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?
 A total of eleven (11) background soil samples were collected from six discrete locations (BG01 - BH06) near the former flowline and analyzed for pH, arsenic, and selenium. Background soil samples were collected from depths ranging between 4 to 8 feet below ground surface (ft bgs). Arsenic and selenium were observed in the background soil samples above ECMC Table 915-1 standards.

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?
 A supplemental site investigation (SSI) will be completed to vertically and horizontally delineate the pH exceedances observed at the site. Additionally, in accordance with the COA associated with previously approved Form 27 document #403955299, root-zone soil samples will be collected from depths of 1-2 feet below ground surface (ft. bgs) at all locations where pH was previously documented to be greater than Table 915- cleanup levels. This will include the following locations: BH04R, BH05, BH06, BH07, and BH08. Additionally, five soil borings (BH09-BH13) will be advanced to further vertically and laterally delineate inorganic compounds at the tank battery. All soil samples collected during the SSI will be analyzed for full ECMC Table 915-1 contaminants of concern.
 Concurrently with the SSI, additional background samples will be collected and analyzed for metals in soil per ECMC Table 915-1, pH, SAR, EC, and boron. The SSI will be completed in accordance with the proposed implementation schedule, and the results of the SSI will be submitted on a subsequent Form 27.

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 source was delineated through environmental site assessment activities completed between August 21, 2021 and September 19, 2022. During the site assessment, a total of nine soil borings (BH01 - BH08, and BH04R) were advanced to terminal depths ranging from 12-14 ft bgs. Boring BH01 was advanced at the same location as the waste characterization sample (FL01-B@4') to vertically delineate impacts at that location. The location of BH01 was determined by utilizing a Trimble Geo7X with sub-meter accuracy to ensure the soil boring would be advanced directly over waste characterization sample FL01-B@4'. Borings BH02 - BH05 were advanced surrounding BH01 to vertically and laterally delineate impacts identified at FL01-B@4'. Boring BH04R was advanced at the same location as BH04 to determine if the naphthalene exceedance identified at sample location BH04@12' was a legitimate detection, and to provide further vertical delineation. Borings BH06 - BH08 were advanced surrounding BH04 and BH04R to laterally delineate the potential naphthalene exceedance identified at sample location BH04@12'. Soil samples were collected and analyzed for TPH (total volatile [C6-C10] and extractable [C10-C36] hydrocarbons), organic compounds in soil per ECMC Table 915-1, and pH.

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.

Based on the results of the site assessment, organic compounds in soil detected above ECMC Table 915-1 GSSLs identified during decommissioning and/or site assessment activities, were not repeated by soil boring and verification soil sampling activities, and have therefore been fully delineated. Groundwater was not encountered within 14 ft of the ground surface during the site assessment soil boring activities. As such, Noble proposes to utilize the ECMC Table 915-1 RSSLs when evaluating soil sample analytical results at this site. The use of ECMC Table 915-1 RSSLs eliminates the 1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene, naphthalene, 1-methylnaphthalene, 2-methylnaphthalene, and selenium concentrations identified at the Site as contaminants of concern.

A supplemental site investigation (SSI) will be completed to vertically and horizontally delineate the pH exceedances observed at the site. Additionally, in accordance with the COA associated with previously approved Form 27 document #403955299, root-zone soil samples will be collected from depths of 1-2 feet below ground surface (ft. bgs) at all locations where pH was previously documented to be greater than Table 915- cleanup levels. This will include the following locations: BH04R, BH05, BH06, BH07, and BH08. Additionally, five soil borings (BH09-BH13) will be advanced to further vertically and laterally delineate inorganic compounds at the tank battery. All soil samples collected during the SSI will be analyzed for full ECMC Table 915-1 contaminants of concern.

Concurrently with the SSI, additional background samples will be collected and analyzed for metals in soil per ECMC Table 915-1, pH, SAR, EC, and boron. The SSI will be completed in accordance with the proposed implementation schedule, and the results of the SSI will be submitted on a subsequent Form 27.

Soil Remediation Summary

<input type="checkbox"/> In Situ	<input type="checkbox"/> 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.

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 Supplemental Site Investigation 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 COGCC 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. 04/28/2021

Proposed date of completion of Reclamation. 04/14/2026

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. 01/07/2021

Actual Spill or Release date, or date of discovery. _____

SITE INVESTIGATION DATES

Date of Initial Actions described in Site Investigation Plan (start date). 04/03/2021

Proposed site investigation commencement. 04/23/2021

Proposed completion of site investigation. 05/07/2025

REMEDIAL ACTION DATES

Proposed start date of Remediation. 03/28/2023

Proposed date of completion of Remediation. 09/30/2025

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:

The implementation schedule has been changed due to the necessity for additional supplemental site investigation activities adjacent to the Kastner 41-03 flowline, prior to generating a detailed reclamation plan. The SSI is currently scheduled for completion on May 7, 2025.

OPERATOR COMMENT

This Form 27 is being submitted to maintain quarterly reporting compliance during the First Quarter 2025, and to include an update to the proposed SSI that will be completed at the Kastner 41-03 Flowline.

A supplemental site investigation (SSI) will be completed to vertically and horizontally delineate the pH exceedances observed at the site. Additionally, in accordance with the COA associated with previously approved Form 27 document #403955299, root-zone soil samples will be collected from depths of 1-2 feet below ground surface (ft. bgs) at all locations where pH was previously documented to be greater than Table 915- cleanup levels. This will include the following locations: BH04R, BH05, BH06, BH07, and BH08. Additionally, five soil borings (BH09-BH13) will be advanced to further vertically and laterally delineate inorganic compounds at the tank battery. All soil samples collected during the SSI will be analyzed for full ECMC Table 915-1 contaminants of concern.

Concurrently with the SSI, additional background samples will be collected and analyzed for metals in soil per ECMC Table 915-1, pH, SAR, EC, and boron. The SSI will be completed in accordance with the proposed implementation schedule, and the results of the SSI 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: Allan Engelhardt

Title: Environmental Consultant

Submit Date: _____

Email: tas-chevron-3@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: 17229

COA Type

Description

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

404075828	SITE INVESTIGATION PLAN
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Total Attach: 1 Files

General Comments

User Group

Comment

Comment Date

User Group	Comment	Comment Date
		Stamp Upon Approval

Total: 0 comment(s)