

State of Colorado
Energy & Carbon Management Commission1120 Lincoln Street, Suite 801, Denver, Colorado 80203
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Report taken by:

RICK ALLISON

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 COGCC 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: 2001 16TH STREET SUITE 900		Phone: (715) 562-0251
City: DENVER	State: CO	Zip: 80202
Contact Person: Dan Peterson	Email: rbueuf27@chevron.com	Mobile: ()

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

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

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

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	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 COGCC Rule 911 a site investigation will be conducted pertaining to the KASTNER 41-03 wellhead cut and cap and flowline removal. Approximately 1,800' of flowline will be removed. The COGCC will be updated in a supplemental Form 27 if a portion of the flowline is abandoned-in-place due to field constraints. The wellhead will be cut and capped per COGCC rules. The Flowline Pre-Abandonment Notice 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):

Eleven grab soil samples were collected for analysis 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. Additionally, BH01@4' was analyzed for Table 915-1 metals.

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 site investigation a grab groundwater will be collected and analyzed for all organic 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):

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 COGCC 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

Number of soil samples collected 19

NA / ND

-- Highest concentration of TPH (mg/kg) 117

Number of soil samples exceeding 915-1 11 -- 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) 4

Groundwater

Number of groundwater samples collected 0 Highest concentration of Benzene (µg/l) _____
Was extent of groundwater contaminated delineated? No 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 background samples were collected from six discrete locations and analyzed for pH, arsenic, and selenium. The average background concentrations of arsenic and selenium with a 1.25 multiplier applied were calculated to be 4.17 milligrams per kilogram (mg/kg) and 0.771 mg/kg, respectively, whereas the concentrations of arsenic and selenium in the waste characterization sample were 2.86 mg/kg and 0.631 mg/kg. Since the average background concentrations for arsenic and selenium were calculated to be higher than the waste characterization sample concentrations, metals should not be considered contaminants of concern at the site. While elevated pH was encountered at the site above COGCC Table 915-1 Soil Suitability for Reclamation (SSR) standards and above background thresholds, all pH exceedances were limited to less than 0.5 units greater than the upper COGCC Table 91501 SSR limit of 8.30, which is within natural soil variability of the region.

☐ 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?

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, nine soil borings (BH01-BH08, and BH04R) were advanced to terminal depths ranging from 12-14-ft bgs. 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'. BH02-BH05 were advanced surrounding BH01 to vertically and laterally delineate impacts identified at FL01-B@4'. 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. BH06-BH08 were advanced surrounding BH04 and BH04R to laterally delineate the 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 COGCC Table 915-1, and pH.

Based on the justification to eliminate metals and pH as contaminants of concern presented in the Site Investigation Summary section, the absence of a pathway for contaminant migration to groundwater presented in the Remediation Summary section, and the full delineation of organic compounds in soil above COGCC Table 915-1 GSSLs, Noble proposes to apply COGCC Table 915-1 Residential Soil Screening Levels (RSSLs) to the site. The application of COGCC Table 915-1 RSSLs eliminates the detected concentrations of organic compounds in soil as contaminants of concern. If the COGCC approves the application of Table 915-1 RSSLs, Noble is requesting a No further Action (NFA) designation for the site.

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 COGCC Table 915-1 Protection of Groundwater Soil Screening Levels (GSSLs) identified during decommissioning and/or site assessment activities were not be repeated by soil boring activities, and are fully delineated. Since groundwater was not encountered during decommissioning or site assessment activities, a desktop review of Colorado's Division of Water Resources (DWR) Well Permit Research Mapper was performed to determine the depth to water below ground surface in permitted water wells within a 0.5-mile radius of the Site. For a visual representation of the results of this inquiry refer to Figure 3 on the attached Site Assessment Report. Eight permitted water wells were identified within the 0.5-mile radius. According to the permit records, the average static groundwater level in this region is 96 ft bgs. Since groundwater is recorded to be 96 ft bgs in the region of the Site, and since soil impacts at the Site are limited to less than 12 ft bgs, there is no pathway for contaminant migration to the groundwater table. As such, Noble proposes to utilize ECMC Table 915-1 RSSL when evaluating soil sample analytical results.

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 COGCC 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 Site Assessment Report

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 COGCC rules. Records are available on the COGCC'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

COGCC Disposal Facility ID #, if applicable:

Non-COGCC Disposal Facility:

Volume of E&P Waste (liquid) in barrels

E&P waste (liquid) description

COGCC Disposal Facility ID #, if applicable:

Non-COGCC Disposal Facility:

REMEDIATION COMPLETION REPORT

REMEDIATION COMPLETION SUMMARY

Is this a Final Closure Request for this Remediation Project? Yes

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? Yes

Does the previous reply indicate consideration of background concentrations? Yes

Does Groundwater meet Table 915-1 standards? Yes

Is additional groundwater monitoring to be conducted? _____

Operator shall comply with the COGCC 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. 04/08/2021

Proposed date of completion of Reclamation. _____

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. 05/10/2021

SITE INVESTIGATION DATES

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

Proposed site investigation commencement. 04/08/2021

Proposed completion of site investigation. 03/28/2023

REMEDIAL ACTION DATES

Proposed start date of Remediation. 03/28/2023

Proposed date of completion of Remediation. 11/14/2023

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:

OPERATOR COMMENT

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 Consulting

Submit Date: 11/16/2023

Email: chevroneform@tasman-geo.com

Based on the information provided herein, this Application for Site Investigation and Remediation Workplan complies with COGCC Rules and applicable orders and is hereby approved.

COGCC Approved:

Date:

Remediation Project Number: 17229

COA Type**Description**

ECMC does not agree with Operators depth to water determination. While most water well appear to be installed to depths of 200 or more feet, at least one water well was installed to a depth of 36 feet indicating the presence of a potential shallower unconfined aquifer. However, ECMC recognizes that confirmation soil borings installed after the initial detection of organic compounds in soils did not confirm the initial results and subsequent soil boring results document compliance with Table 915-1 Residential Soil Screening Levels.

ECMC recognizes the boring BH01@4' installed in the apparent source area contained concentrations of arsenic and selenium below the site-specific background data presented.

However, No Further Action cannot be approved and this form is denied. Operator has not demonstrated that pH within the former production facility is within the site specific background concentrations. Therefore, if Operator proposes to leave material with elevated pH in situ, then Operator shall submit a reclamation plan pursuant to Rule 915.b.

1 COA

Attachment Check 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**

403494490	FORM 27-SUPPLEMENTAL-SUBMITTED
403597573	SITE INVESTIGATION REPORT

Total Attach: 2 Files

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

		Stamp Upon Approval
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Total: 0 comment(s)