

State of Colorado
Energy & Carbon Management Commission

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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: (970) 304-5000
City: DENVER State: CO Zip: 80202		Mobile: ()
Contact Person: Lauren Hoff	Email: RBUEUF27@chevron.com	

PROJECT, PURPOSE & SITE INFORMATION

PROJECT INFORMATION

Remediation Project #: 30992 Initial Form 27 Document #: 403476055

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: FLOWLINE	Facility ID: 297572	API #: _____	County Name: WELD
Facility Name: KEHN USX AA 01-16	Latitude: 40.510216	Longitude: -104.377220	
** correct Lat/Long if needed: Latitude: _____		Longitude: _____	
QtrQtr: SESE	Sec: 1	Twp: 6N	Range: 63W Meridian: 6 Sensitive Area? Yes
Facility Type: SPILL OR RELEASE	Facility ID: 485880	API #: _____	County Name: WELD
Facility Name: Kehn USX AA 06-16	Latitude: 40.518783	Longitude: -104.388930	
** correct Lat/Long if needed: Latitude: _____		Longitude: _____	
QtrQtr: SESE	Sec: 1	Twp: 6N	Range: 63W Meridian: 6 Sensitive Area? Yes

SITE CONDITIONS

General soil type - USCS Classifications SW _____

Most Sensitive Adjacent Land Use Grassland _____

Is domestic water well within 1/4 mile? No _____

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

Pronghorn Winter Concentration Area HPH 0.17mi W
No other potential receptors are located within ¼ mile of the Site.
Above distances are approximations.

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	Field Screening and Lab Analysis if encountered
Yes	SOILS	Refer to Tables and Figures	Field Screening and 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 KEHN USX AA01-16 wellhead cut and cap and flowline removal. Approximately 1109' of flowline was removed. The ECMC was updated in a supplemental Form 27 if a portion of the flowline is abandoned-in-place due to field constraints. The wellhead was cut and capped per ECMC rules. Additionally, soil samples were field screened at the N-E-S-W sides of the wellhead. Soil samples were taken along the flowline any points of material change and/or hammer unions, directional changes, as well as at the bell holes on either side of a waterway. The Flowline Pre-Abandonment Notice Document number was 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):

Grab confirmation soil samples were collected along the flowline at any points of material change and/or hammer unions, directional changes, as well as at the bell holes on either side of a waterway, AS APPLICABLE to abandonment type. 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, and EC, SAR, pH, metals, and boron. All samples collected were analyzed by a certified laboratory using approved ECMC laboratory analysis methods. A grab confirmation soil sample was collected at the wellhead excavation in base of the excavation or the area showing the highest degree of impact during field screening activities at the wellhead excavation. The ECMC was updated with the results of the wellhead decommissioning activities on a supplemental F27.

Proposed Groundwater Sampling

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

If groundwater is encountered during additional site assessment activities, a grab groundwater sample will be collected and analyzed for all organic compounds and inorganic parameters per 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 applicable ECMC Closure Checklists were utilized and filled out during the abandonment process. A photolog was attached.

SITE INVESTIGATION REPORT

SAMPLE SUMMARY

Soil

Number of soil samples collected 8
Number of soil samples exceeding 915-1 3
Was the areal and vertical extent of soil contamination delineated? No
Approximate areal extent (square feet) 300

NA / ND

ND Highest concentration of TPH (mg/kg) _____
-- Highest concentration of SAR 2.57
BTEX > 915-1 No
Vertical Extent > 915-1 (in feet) 7

Groundwater

Number of groundwater samples collected 0
Was extent of groundwater contaminated delineated? Yes
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?

Fifteen background soil samples were collected from an area not impacted by oil and gas development and at similar depths and lithologies as confirmation soil samples collected at the location and analyzed for Table 915-1 metals and SSR constituents. Background soil sample analytical results were reported with elevated levels of Arsenic (As) and Barium (Ba)

Background Soil Sample Analysis (mg/kg)
As @ 3ft: Max*1.25 = 2.81
As @ 4ft: Max*1.25 = 2.95
Ba @ 3ft: Max*1.25 = 55.8
Ba @ 4ft: Max*1.25 = 141

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?

As part of Chevron's Data Integrity Review for projects associated with Eagle Environmental, all point-of-compliance (POC) samples will be re-collected in accordance with the approved Form 27 Investigation Plan. These samples will be analyzed for the full analyte suite listed in ECMC Table 915-1.

In accordance with Document Number 403762383, elevated inorganics and metals were observed in multiple locations along the former KEHN USX AA01 -16 flowline and wellhead. Soil will be re-sampled and analyzed for the full Table 915-1 analyte suite at the FL01 3', FL06 3', and WH-FS-01@7' sample locations at the same depths where the initial elevated concentrations were observed. Noble will request that a No Further Action (NFA) determination be granted if the re-analyzed samples meet the Table 915-1 concentration standards. Background samples will be used to justify any elevated concentrations observed in the re-sampled data.

Alternatively, if the re-sample results exceed the Table 915-1 standards and cannot be attributed to native soil conditions based on background soil characterization, a minimum of five additional samples will be collected to delineate the magnitude and extent of the elevated constituents.

To support these efforts and provide further context for all sample comparisons, the Operator will collect additional local background samples from areas demonstrably unaffected by oil and gas development to further characterize native soil conditions.

Please refer to the attached Site Investigation Plan for a detailed summary of the proposed re-sample and background sample locations.

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 location FL05 3' were removed through a remedial excavation. Remedial excavation confirmation soil samples will be collected and analyzed for full ECMC Table 915-1 constituents.

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.

Laboratory analytical results indicated that a historical release had occurred at the location of soil sample FL05 3'. This release was reported to the Colorado Energy and Carbon Management Commission (ECMC) as a historic release under Form 19, Document Number 403648076.

The ECMC subsequently approved the Operator's request (Document Number 403648170) to apply Residential Soil Screening Levels (RSSLs) for all future sampling events. This approval was based on a static groundwater level of approximately 120 feet below ground surface (bgs), as measured in a nearby stock well (Permit #10790). The vertical separation of more than 25 feet between the groundwater table and the impacted depth at FL05 3' supports the conclusion that a viable pathway for contaminant migration to groundwater is unlikely.

To address the contamination identified at three feet bgs at FL05 3', impacted soil was excavated and removed on January 28, 2024. Upon completion of the remedial excavation, confirmation soil samples were collected and analyzed in accordance with ECMC Table 915-1 requirements for organics, metals, and soil suitability for reclamation. Analytes included Total Petroleum Hydrocarbons (TPH), BTEX, 1,2,4-Trimethylbenzene, 1,3,5-Trimethylbenzene, Naphthalene, Polycyclic Aromatic Hydrocarbons (PAHs), pH, Sodium Adsorption Ratio (SAR), Electrical Conductivity (EC), Boron, and metals listed in Table 915-1.

Analytical results indicated that all organic constituents were below applicable RSSLs and met ECMC standards for soil suitability for reclamation. Although arsenic concentrations in all samples exceeded the RSSL, the levels are consistent with regional background concentrations and are interpreted to reflect naturally occurring conditions in native soils. Groundwater was not encountered during any phase of the remedial excavation.

Soil Remediation Summary

<input type="checkbox"/> In Situ _____ Bioremediation (or enhanced bioremediation) _____ Chemical oxidation _____ Air sparge / Soil vapor extraction _____ Natural Attenuation _____ Other _____	<input checked="" type="checkbox"/> Ex Situ Yes Excavate and offsite disposal _____ If Yes: Estimated Volume (Cubic Yards) _____ 30 _____ Name of Licensed Disposal Facility or ECMC Facility ID # _____ No Excavate and onsite remediation _____ Land Treatment _____ Bioremediation (or enhanced bioremediation) _____ Chemical oxidation _____ Other _____
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Groundwater Remediation Summary

No _____ Bioremediation (or enhanced bioremediation)
 No _____ Chemical oxidation
 No _____ Air sparge / Soil vapor extraction
 No _____ Natural Attenuation
 No _____ 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 additional site assessment activities, a grab groundwater sample will be collected and analyzed for all organic compounds and inorganic parameters per 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 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 MWZZ316714 and MWZX316724) 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:

No beneficial use

Volume of E&P Waste (solid) in cubic yards 20

E&P waste (solid) description Hydrocarbon impacted soil

ECMC Disposal Facility ID #, if applicable: _____

Non-ECMC Disposal Facility: North Weld Landfill in Ault, Colorado

Volume of E&P Waste (liquid) in barrels 0

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? 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. 03/12/2025

Proposed date of completion of Reclamation. 06/30/2027

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. 07/21/2023

Actual Spill or Release date, or date of discovery. 01/08/2024

SITE INVESTIGATION DATES

Date of Initial Actions described in Site Investigation Plan (start date). 09/21/2023

Proposed site investigation commencement. 08/20/2023

Proposed completion of site investigation. 12/31/2025

REMEDIAL ACTION DATES

Proposed start date of Remediation. 12/31/2024

Proposed date of completion of Remediation. 01/28/2025

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:

OPERATOR COMMENT

This form serves to comply with the Rule 913.e. reporting schedule for the KEHN USX AA01-16, REM 30992. The Operator will complete the additional site investigation as outlined in this proposed Site Investigation Report workplan prior to the Proposed completion of site investigation date detailed in the Implementation schedule. Supplemental Form 27s will be prepared and submitted on a quarterly schedule to provide updates and progress of the remediation until closure criteria has been achieved.

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

Signed: Jeff Griggs

Title: Consultant

Submit Date: _____

Email: jeffg@fremontenv.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: 30992

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

--	--

Total Attach: 0 Files

General Comments

User Group

Comment

Comment Date

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

Total: 0 comment(s)