

State of Colorado Oil and Gas Conservation 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 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		Mobile: ()
Contact Person: Dan Peterson	Email: RBUEUF27@chevron.com	

PROJECT, PURPOSE & SITE INFORMATION

PROJECT INFORMATION

Remediation Project #: 14376 Initial Form 27 Document #: 402205289

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

No Multiple Facilities

Facility Type: SPILL OR RELEASE	Facility ID: 468692	API #: _____	County Name: WELD
Facility Name: Weezer G3-22	Latitude: 40.336020	Longitude: -104.651350	
** correct Lat/Long if needed: Latitude: _____		Longitude: _____	
QtrQtr: SESW	Sec: 3	Twp: 4N	Range: 65W Meridian: 6 Sensitive Area? Yes

SITE CONDITIONS

General soil type - USCS Classifications SC Most Sensitive Adjacent Land Use Non-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? Yes

Other Potential Receptors within 1/4 mile

Wetlands 677', Occupied Building 1164'

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
Yes	GROUNDWATER	TBD	Laboratory Analytical Results
Yes	SOILS	14' X 9' X 3' bgs	Laboratory Analytical Results

INITIAL ACTION SUMMARY

Description of initial action or emergency response measures take to abate, investigate, and/or remediate impacts associated with E&P Waste.

During cut and cap operations at the Weezer G3-22 wellhead crews discovered soil impacts in the vicinity the wellhead due to a historical release.

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):

Six soil samples were collected during site investigation activities by Fremont Environmental and submitted to Summit Scientific for analysis of TPH-DRO by EPA Method 8015, TPH-GRO, BTEX, and Naphthalene by EPA Method 8206b. Additionally, six soil samples were collected to determine the extent of impacts outside of the source area. These soil samples indicated impacted soil only remained at the source area.

Proposed Groundwater Sampling

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

One grab groundwater sample was collected by Fremont Environmental and submitted to Summit Scientific for analysis of BTEX by EPA Method 8260b. Additionally, five groundwater monitoring wells were installed to determine if dissolved phase impacts existed outside of the excavation. Fremont Environmental collected five groundwater samples and submitted them for analysis of BTEX by EPA Method 8260b. All six groundwater samples were non-detect for BTEX.

Proposed Surface Water Sampling

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

Four surface water samples were collected and analyzed for BTEX by EPA Method 8260c and Dissolved Methane by RSK 175 .

**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 12
Number of soil samples exceeding 915-1 2
Was the areal and vertical extent of soil contamination delineated? No
Approximate areal extent (square feet) 126

Groundwater

Number of groundwater samples collected 11
Was extent of groundwater contaminated delineated? Yes
Depth to groundwater (below ground surface, in feet) 4
Number of groundwater monitoring wells installed 5
Number of groundwater samples exceeding 915-1 0

Surface Water

4 Number of surface water samples collected
0 Number of surface water samples exceeding 915-1
If surface water is impacted, other agency notification may be required.

NA / ND

-- Highest concentration of TPH (mg/kg) 590
NA Highest concentration of SAR
BTEX > 915-1 No
Vertical Extent > 915-1 (in feet) 3

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)
-- Highest concentration of Methane (mg/l) 9.7

OTHER INVESTIGATION INFORMATION

☐ Were impacts to adjacent property or offsite impacts identified?

☐ Were background samples collected as part of this site investigation?

☐ 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 impacted soil has been defined and is localized by the plugged and abandoned well head. Due to safety concerns, source removal will be conducted once all wellheads are plugged and abandoned. Five soil borings were installed and completed as monitoring wells to determine if dissolved phase impacts existed outside the source area. All monitoring wells were non-detect for Table 915-1 organic contaminants of concern.

REMEDICATION 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.

Source removal will be conducted once all wells are plugged and abandoned. Seventeen monitoring wells were installed and were sampled during the first quarter 2021 for BTEX, naphthalene, dissolved gasses, 1,2,4-trimethylbenzene, and 1,3,5-trimethylbenzene. Inorganic parameters in groundwater were also sampled for. Isotopic analysis will be conducted on a semi-annual basis to determine the extent of microbial oxidation. Six soil vapor wells were sampled for GBTEX and methane, ethane, and propane. The dissolved gas plume attenuates as you move away from the source area at the Weezer wellheads where free gas was present. The outer monitoring wells shows highly oxidized thermogenic methane from microbial colonies with no free gas present. Isotopic analysis has determined the source has been identified and the dissolved gas plume is stable and decreasing. The proposed monitoring plan will be implemented and will include: Groundwater Monitoring: MW-1 through MW17 and will be analyzed for dissolved gases by EPA RSK-175; Soil Vapor Monitoring: VP-2, VP-3, VP-4, VP-19, VP-20, and VP-21 and will be analyzed for methane, ethane, and propane by ASTM D-1945 biannually. Contingent on source removal and continued attenuation of methane in groundwater, the estimated no further action submittal will be Q4 2023.

Soil Remediation Summary

☐ In Situ

☒ Ex Situ

_____ Bioremediation (or enhanced bioremediation)

Yes _____ Excavate and offsite disposal

_____ Chemical oxidation

If Yes: Estimated Volume (Cubic Yards) _____ 10

_____ Air sparge / Soil vapor extraction

Name of Licensed Disposal Facility or COGCC Facility ID # _____

_____ Natural Attenuation

No _____ Excavate and onsite remediation

_____ Other _____

_____ Land Treatment

_____ Bioremediation (or enhanced bioremediation)

_____ Chemical oxidation

_____ Other _____

Groundwater Remediation Summary

Yes _____ Bioremediation (or enhanced bioremediation)

No _____ Chemical oxidation

No _____ Air sparge / Soil vapor extraction

Yes _____ 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.

Seventeen groundwater monitoring wells were installed and will be sampled on a quarterly basis. Groundwater samples will be analyzed for dissolved gases (ethane, propane, and methane) by RSK 175. Isotopic analysis will be conducted biannually.

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 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: \$ 45000

WASTE DISPOSAL INFORMATION

Was E&P waste generated as part of this remediation? Yes

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 10

E&P waste (solid) description E&P solid waste derived from excavation activities.

COGCC Disposal Facility ID #, if applicable:

Non-COGCC Disposal Facility: Buffalo Ridge Landfill

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

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? 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? Yes

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 1004 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. 10/02/2019

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. 08/13/2020

Actual Spill or Release date, or date of discovery. 10/02/2019

SITE INVESTIGATION DATES

Date of Initial Actions described in Site Investigation Plan (start date). 10/02/2019

Proposed site investigation commencement.

Proposed completion of site investigation. 10/02/2019

REMEDIAL ACTION DATES

Proposed start date of Remediation. 10/02/2019

Proposed date of completion of Remediation. 12/31/2023

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:

Methane concentrations are attenuating slower than expected.

OPERATOR COMMENT

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

Signed: Ethan Black

Title: Consultant

Submit Date: _____

Email: ethanb@fremontenv.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: 14376

COA Type**Description**

0 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**

403295088	MONITORING REPORT
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Total Attach: 1 Files

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

		Stamp Upon Approval
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Total: 0 comment(s)