

State of Colorado Oil and Gas Conservation Commission

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402531168

Receive Date:

11/12/2020

Report taken by:

Candice (Nikki) Graber

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.

Refer to Rules 340, 905, 906, 907, 908, 909, and 910

OPERATOR INFORMATION

Name of Operator: NOBLE ENERGY INC	Operator No: 100322	Phone Numbers
Address: 1001 NOBLE ENERGY WAY		Phone: (970) 3045329
City: HOUSTON State: TX Zip: 77070		Mobile: ()
Contact Person: Jacob Evans	Email: jacob.evans@nblenergy.com	

PROJECT, PURPOSE & SITE INFORMATION

PROJECT INFORMATION

Remediation Project #: 11603 Initial Form 27 Document #: 401710258

PURPOSE INFORMATION

- | | |
|--|--|
| <input type="checkbox"/> 901.e. Sensitive Area Determination | <input checked="" type="checkbox"/> 909.c.(5), Rule 910.b.(4): Remediation of impacted ground water |
| <input type="checkbox"/> 909.c.(1), Rule 905: Pit or PW vessel closure | <input type="checkbox"/> Rule 909.e.(2)A.: Notice completion of remediation in accordance with Rule 909.b. |
| <input checked="" type="checkbox"/> 909.c.(2), Rule 906: Spill/Release Remediation | <input type="checkbox"/> Rule 909.e.(2)B.: Closure of remediation project |
| <input type="checkbox"/> 909.c.(3), Rule 907.e.: Land treatment of oily waste | <input type="checkbox"/> Rule 906.c.: Director request |
| <input type="checkbox"/> 909.c.(4), Rule 908.g.: Centralized E&P Waste Management Facility closure | <input type="checkbox"/> Other _____ |

SITE INFORMATION

N Multiple Facilities (in accordance with Rule 909.c.)

Facility Type: SPILL OR RELEASE	Facility ID: 455230	API #: _____	County Name: WELD
Facility Name: Bierig 1-26	Latitude: 40.373436	Longitude: -104.742267	
** correct Lat/Long if needed: Latitude: _____		Longitude: _____	
QtrQtr: NENE	Sec: 26	Twp: 5N	Range: 66W 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

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 Analysis
Yes	SOILS	TBD	Laboratory 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.

Impacted soil above COGCC Table 910-1 standards was discovered during plugging and abandonment procedures. Excavation of impacted soil will be scheduled.

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):

Thirty two soil samples were collected during site investigation activities and analyzed for TPH-DRO, TPH-GRO, BTEX, and Naphthalene by EPA Methods 8015 and 8260b.

Proposed Groundwater Sampling

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

Eight groundwater samples were collected and analyzed for BTEX by EPA Method 8260b.

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):

SITE INVESTIGATION REPORT

SAMPLE SUMMARY

Soil

Number of soil samples collected 32
Number of soil samples exceeding 910-1 5
Was the areal and vertical extent of soil contamination delineated? No
Approximate areal extent (square feet) 1200

NA / ND

-- Highest concentration of TPH (mg/kg) 11600
NA Highest concentration of SAR
BTEX > 910-1 Yes
Vertical Extent > 910-1 (in feet) 10

Groundwater

Number of groundwater samples collected 8
Was extent of groundwater contaminated delineated? No
Depth to groundwater (below ground surface, in feet) 10'
Number of groundwater monitoring wells installed 0
Number of groundwater samples exceeding 910-1 6

-- Highest concentration of Benzene (µg/l) 5200
-- Highest concentration of Toluene (µg/l) 4700
-- Highest concentration of Ethylbenzene (µg/l) 1100
-- Highest concentration of Xylene (µg/l) 13000
NA Highest concentration of Methane (mg/l)

Surface Water

0 Number of surface water samples collected
 Number of surface water samples exceeding 910-1
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?

☐ 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?

Additional monitoring wells will be installed.

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.

Approximately 10,250 cu/yds of impacted soil was treated by mixing hydrogen peroxide into the soil and 7,400 cu/yds of impacted soil was removed from the location and disposed of at a certified landfill. Confirmation soil samples were collected above the phreatic zone from the excavation base and sidewalls to determine the lateral and vertical extents of impacts.

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.

Monitoring wells were installed to delineate dissolved phase impacts. These wells will be sampled on a quarterly basis to monitor natural attenuation. Additional monitoring wells will be installed prior to January 25, 2021 in order to obtain point of compliance. MW23 and MW24 had measurable amounts of LNAPL and were not sampled, these monitoring wells have a solar powered vapor extraction system installed to eliminate LNAPL. Bi-weekly gauging of these wells will take place to determine the effectiveness of the remedial system. A total fluid extraction pilot test was implemented and the data will be provided in the next groundwater monitoring event. Air samples were collected from the blower on the LNAPL extraction system to ensure compliance with CDPHE air emission standards.

Soil Remediation Summary

☐ In Situ

Bioremediation (or enhanced bioremediation)

Chemical oxidation

Air sparge / Soil vapor extraction

Natural Attenuation

Other

☒ Ex Situ

Yes Excavate and offsite disposal

If Yes: Estimated Volume (Cubic Yards) 7400

Name of Licensed Disposal Facility or COGCC Facility ID #

Yes Excavate and onsite remediation

No Land Treatment

No Bioremediation (or enhanced bioremediation)

Yes Chemical oxidation

No Other

Groundwater Remediation Summary

No Bioremediation (or enhanced bioremediation)

Yes Chemical oxidation

No Air sparge / Soil vapor extraction

Yes Natural Attenuation

Yes Other LNAPL Removal via a solar powered vapor extraction system

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.

The amended monitoring program includes MW01, MW03, MW06 through MW17, MW20, MW22-MW28, and MW31-MW74. APEX will gauge and sample these on a quarterly basis and submit the groundwater samples for analysis of BTEX by EPA Method 8260b. Additional monitoring wells will be installed to achieve point of compliance. Monitoring wells with measurable LNAPL will not be sampled.

REMEDIATION PROGRESS UPDATE

PERIODIC REPORTING

Frequency: ☒ Quarterly ☐ Semi-Annually ☐ Annually ☐ Other _____

Report Type: ☒ Groundwater Monitoring ☐ Land Treatment Progress Report ☐ O&M Report
☐ Other _____

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:

Impacted soil was treated via chemical oxidation and utilized to backfill the excavation once laboratory analytical confirmed it was below COGCC Table 910-1 standards. A total of 10,250 cu/yds were treated.

Volume of E&P Waste (solid) in cubic yards 17650

E&P waste (solid) description Impacted soil above COGCC Table 910-1 standards

COGCC Disposal Facility ID #, if applicable: _____

Non-COGCC Disposal Facility: Buffalo Ridge/Ault Landfills

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 _____

Do all soils meet Table 910-1 standards? No _____

Does the previous reply indicate consideration of background concentrations? _____

Are the only residual soil impacts pH, SAR, or EC at depths greater than 3 feet below ground surface? No _____

Does Groundwater meet Table 910-1 standards? No _____

Is additional groundwater monitoring to be conducted? Yes _____

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 approve the seed mix? _____

If NO, does the seed mix comply with local soil conservation district recommendations? _____

IMPLEMENTATION SCHEDULE

PRIOR DATES

Date of Surface Owner notification/consultation, if required. _____

Actual Spill or Release date, if known. _____

SITE INVESTIGATION DATES

Date of Initial Actions described in Site Investigation Plan (start date). 05/18/2018

Date of commencement of Site Investigation. _____

Date of completion of Site Investigation. 05/18/2018

REMEDIAL ACTION DATES

Date of commencement of Remediation. 10/22/2018

Date of completion of Remediation. _____

SITE RECLAMATION DATES

Date of commencement of Reclamation. 04/05/2019

Date of completion of Reclamation. _____

OPERATOR COMMENT

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

Signed: Jacob Evans

Title: Environmental Specialist

Submit Date: 11/12/2020

Email: jacob.evans@nblenergy.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: Candice (Nikki) Graber

Date: 11/16/2020

Remediation Project Number: 11603

COA Type

Description

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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

402531168	FORM 27-SUPPLEMENTAL-SUBMITTED
402531197	ANALYTICAL RESULTS
402531200	MONITORING REPORT

Total Attach: 3 Files

General Comments

User Group

Comment

Comment Date

		Stamp Upon Approval
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Total: 0 comment(s)