

State of Colorado Oil and Gas Conservation Commission

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Document Number:

401236991

Receive Date:

03/20/2017

Report taken by:

BOB CHESSON

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 Phone: (970) 3045329 Mobile: ()
Address: 1625 BROADWAY STE 2200		
City: DENVER State: CO Zip: 80202		
Contact Person: Jacob Evans	Email: jacob.evans@nblenergy.com	

PROJECT, PURPOSE & SITE INFORMATION

PROJECT INFORMATION

Remediation Project #: 7259

Initial Form 27 Document #: 2230285

PURPOSE INFORMATION

- | | |
|--|--|
| <input checked="" 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 checked="" 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: LOCATION	Facility ID: 317493	API #:	County Name: WELD
Facility Name: EHRLICH-64N64W 4SENW	Latitude: 40.343180	Longitude: -104.557600	
** correct Lat/Long if needed: Latitude:		Longitude:	
QtrQtr: SENW	Sec: 4	Twp: 4N	Range: 64W Meridian: 6 Sensitive Area? Yes

SITE CONDITIONS

General soil type - USCS Classifications SW

Most Sensitive Adjacent Land Use 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

WATER WELLS 1,400' SE AND 1,470' NW, UNNAMED POND 850' S, UNNAMED DITCH 930' NW.

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
	GROUNDWATER	TO BE DETERMINED	SITE ASSESSMENT
	SOILS	70' X 70' X 16'	EXCAVATION

INITIAL ACTION SUMMARY

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

TANK VALVES WERE VANDALIZED, RELEASING CONDENSATE INTO THE SECONDARY CONTAINMENT. UPON DISCOVERY, THE STANDING LIQUIDS WERE RECOVERED BY A VACUUM TRUCK AND TRANSFERRED FROM THE LOCATION. SEE FORM 19 (DOCUMENT #2229395).

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):

Twenty one soil samples were collected during excavation and site assessment activities and analyzed for BTEX, TPH-DRO, and TPH-GRO.

Proposed Groundwater Sampling

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

Fourteen monitoring wells were installed and sampled for BTEX.

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 21

Number of soil samples exceeding 910-1 2

Was the areal and vertical extent of soil contamination delineated? Yes

Approximate areal extent (square feet) 6400

NA / ND

-- Highest concentration of TPH (mg/kg) 4090

NA Highest concentration of SAR

BTEX > 910-1 Yes

Vertical Extent > 910-1 (in feet) 16

Groundwater

Number of groundwater samples collected 14

Was extent of groundwater contaminated delineated? Yes

Depth to groundwater (below ground surface, in feet) 11'

Number of groundwater monitoring wells installed 14

Number of groundwater samples exceeding 910-1 3

-- Highest concentration of Benzene (µg/l) 4380

-- Highest concentration of Toluene (µg/l) 90.1

-- Highest concentration of Ethylbenzene (µg/l) 82.7

-- Highest concentration of Xylene (µg/l) 549

NA Highest concentration of Methane (mg/l)

Surface Water

0 Number of surface water samples collected

0 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?

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.

IMPACTED SOIL WAS REMOVED VIA EXCAVATION UNTIL CLEAN SIDEWALLS TO THE NORTH, SOUTH, AND WEST WERE OBTAINED AND CONFIRMATION SOIL SAMPLES WERE COLLECTED. EXCAVATION COULD NOT BE CONTINUED TO THE EAST DUE TO CROPS AND IRRIGATION SYSTEMS. A SITE ASSESSMENT OF THE REMAINING SOIL AND GROUNDWATER IMPACTS WILL BE CONDUCTED EAST OF THE EXCAVATION UPON LANDOWNER APPROVAL. ALL SOIL SAMPLES WERE ANALYZED FOR BTEX AND TPH AND WERE IN COMPLIANCE WITH COGCC STANDARDS EXCEPT FOR THE TWO SAMPLES TAKEN ON THE EAST WALL.

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.

Remediation of impacted soil and groundwater was remediated through chemical oxidation and air sparge/soil vapor extraction. Four consecutive quarters of compliant groundwater has been achieved.

Soil Remediation Summary

☒ In Situ

No Bioremediation (or enhanced bioremediation)

Yes Chemical oxidation

Yes Air sparge / Soil vapor extraction

No Natural Attenuation

No Other _____

☒ Ex Situ

Yes Excavate and offsite disposal

If Yes: Estimated Volume (Cubic Yards) 3000

Name of Licensed Disposal Facility or COGCC Facility ID # _____

No Excavate and onsite remediation

Land Treatment

Bioremediation (or enhanced bioremediation)

Chemical oxidation

Other _____

Groundwater Remediation Summary

No Bioremediation (or enhanced bioremediation)

Yes Chemical oxidation

Yes 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.

GROUNDWATER MONITORING WELLS WILL BE INSTALLED; TWO MONITORING WELLS WILL BE INSTALLED DOWNGRADIENT AND ONE UPGRADIENT OF THE EXCAVATION EXTENT. QUARTERLY GROUNDWATER SAMPLING WILL BE CONDUCTED, AND GROUNDWATER SAMPLES WILL BE ANALYZED FOR BTEX UNTIL FOUR CONSECUTIVE QUARTERS OF GROUNDWATER SAMPLES ARE IN COMPLIANCE WITH COGCC STANDARDS.

REMEDATION PROGRESS UPDATE

PERIODIC REPORTING

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

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

☒ Other No Further Action Request _____

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 3000

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 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: _____

REMEDATION COMPLETION REPORT

REMEDATION COMPLETION SUMMARY

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

Do all soils meet Table 910-1 standards? Yes _____

Does the previous reply indicate consideration of background concentrations? No _____

Are the only residual soil impacts pH, SAR, or EC at depths greater than 3 feet below ground surface? _____

Does Groundwater meet Table 910-1 standards? Yes _____

Is additional groundwater monitoring to be conducted? No _____

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.

CLEAN FILL DIRT WAS IMPORTED AND USED TO BACKFILL THE EXCAVATION AND THE GRADE WAS RESTORED. THE OIL AND GAS PRODUCTION FACILITY REMAINS ON SITE.

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 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. 06/19/2012

SITE INVESTIGATION DATES

Date of Initial Actions described in Site Investigation Plan (start date). _____

Date of commencement of Site Investigation. 06/19/2012

Date of completion of Site Investigation. _____

REMEDIAL ACTION DATES

Date of commencement of Remediation. 07/02/2012

Date of completion of Remediation. _____

SITE RECLAMATION DATES

Date of commencement of Reclamation. 07/02/2012

Date of completion of Reclamation. 07/02/2012

OPERATOR COMMENT

No Further Action Request

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 Coordinator

Submit Date: 03/20/2017

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: BOB CHESSON

Date: 03/20/2017

Remediation Project Number: 7259

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

401236991	FORM 27-SUPPLEMENTAL-SUBMITTED
401237076	MONITORING REPORT

Total Attach: 2 Files

General Comments

User Group

Comment

Comment Date

Environmental	The COGCC has reviewed the NFA request for Project/Remediation #7295. Based on the information presented no further action is necessary at this time. However, should future conditions at the site indicate contaminant concentrations in soils exceeding COGCC standards then further investigation and/or remediation activities may be required at the site. For locations with active ongoing oil and gas operations, comply with Rule 1003 interim reclamation requirements and for locations that will no longer have active oil and gas operations, comply with Rule 1004 Final Reclamation requirements.	03/20/2017
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Total: 1 comment(s)