

State of Colorado Oil and Gas Conservation Commission

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402405704

Receive Date:

05/26/2020

Report taken by:

Jim Hughes

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: LINDE INC	Operator No: 1375	Phone Numbers Phone: (970) 5657021 Mobile: ()
Address: 200 SOMERSET CORP BLVD #7000		
City: BRIDGEWATER	State: NJ Zip: 07083	
Contact Person: Jerrod Hughes	Email: Jerrod.Hughes@messer-us.com	

PROJECT, PURPOSE & SITE INFORMATION

PROJECT INFORMATION

Remediation Project #: 12220

Initial Form 27 Document #: 401865903

PURPOSE INFORMATION

- | | |
|--|--|
| <input type="checkbox"/> 901.e. Sensitive Area Determination | <input 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: WELL	Facility ID: _____	API #: 083-06536	County Name: MONTEZUMA
Facility Name: AIRCO FEDERAL 2		Latitude: 37.352876	Longitude: -108.782835
		** correct Lat/Long if needed: Latitude: _____	Longitude: _____
QtrQtr: NENW	Sec: 25	Twp: 36N	Range: 18W Meridian: N Sensitive Area? Yes

SITE CONDITIONS

General soil type - USCS Classifications SM

Most Sensitive Adjacent Land Use National Monument

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

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	SOILS	800 feet of wash	Field EC screening and 900 series 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.

Soil was screened for electrical conductivity and excavated by hand digging in the wash below the well pad. Remaining soil was sampled and submitted for laboratory analysis of EC. Any areas with exceedances were further excavated and resampled for EC. Once the EC was below Table 910 screening criteria, the remaining 910-1 analytes were sampled for and submitted for laboratory analysis. All confirmation sample results were below Table 910-1 criteria, with the exception of SAR and pH in one sample near the pad (W-31). Soil from this sample area was further excavated and stockpiled on the well pad. pH was determined to be representative of local conditions, and the sample area was sampled for SAR. Results were below Table 910-1 criteria.

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):

Proposed Groundwater Sampling

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

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 64

Number of soil samples exceeding 910-1 20

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

Approximate areal extent (square feet) 2000

NA / ND

-- Highest concentration of TPH (mg/kg) 148

-- Highest concentration of SAR 16.1

BTEX > 910-1 No

Vertical Extent > 910-1 (in feet) 0

Groundwater

Number of groundwater samples collected 0

Was extent of groundwater contaminated delineated? No

Depth to groundwater (below ground surface, in feet) 300'

Number of groundwater monitoring wells installed 0

Number of groundwater samples exceeding 910-1 0

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

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?

One soil sample was collected for full Table 910 analysis. Another background sample was collected for electrical conductivity only.

☐ 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.

Liquid on the well pad was pumped out and trucked off site (see Form 19 and Addendum). Soil within the wash was removed by hand digging, then disposed of off-site. Impacted soil on the well pad was excavated and stockpiled on the well pad.

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.

Impacted soil was stockpiled in impervious liners at the Linde Facility and in the canyon below the well pad. The wash stockpiles were removed via airlift in December 2018.
Soil from sample area W-31 (approximately 1 cubic foot) was added to soil stockpiled from excavation within the well pad. The stockpiled soil will be treated during the well pad's closure.

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) _____ 6

Name of Licensed Disposal Facility or COGCC Facility ID # _____

Yes _____ Excavate and onsite remediation

No _____ Land Treatment

No _____ Bioremediation (or enhanced bioremediation)

No _____ Chemical oxidation

Yes _____ Other _____ Soil from sample area W-31 is stockpiled on well pad. See letter attachment.

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

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:

None

Volume of E&P Waste (solid) in cubic yards _____ 6

E&P waste (solid) description Sandy soil _____

COGCC Disposal Facility ID #, if applicable: _____

Non-COGCC Disposal Facility: Waste Management - San Juan
County Landfill, Aztec, NM

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

E&P waste (liquid) description None _____

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 _____

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

Does the previous reply indicate consideration of background concentrations? Yes _____

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.

Soil from sample area W-31 is stockpiled on the well pad. This soil will be addressed during closure of the well pad and subsequent reclamation.

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. 10/19/2018

SITE INVESTIGATION DATES

Date of Initial Actions described in Site Investigation Plan (start date). 10/25/2018

Date of commencement of Site Investigation. 10/25/2018

Date of completion of Site Investigation. 11/09/2018

REMEDIAL ACTION DATES

Date of commencement of Remediation. 10/25/2018

Date of completion of Remediation. 10/18/2019

SITE RECLAMATION DATES

Date of commencement of Reclamation. _____

Date of completion of Reclamation. _____

OPERATOR COMMENT

The letter attachment includes a summary of completed work in the project area. The letter includes a report submitted in November 2019 to the Bureau of Land Management with associated laboratory analytical results.
All soil outside the well pad meets Table 910-1 criteria.

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

Signed: Ned Lundvall

Title: Environmental Consultant

Submit Date: 05/26/2020

Email: elundvall@eaest.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: Jim Hughes

Date: 06/02/2020

Remediation Project Number: 12220

COA Type

Description

	Surface disturbances shall be reclaimed in accordance with the 1000 Series Reclamation Regulations. Consult COGCC Reclamation Specialist regarding interim and/or final reclamation.
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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

402405704	FORM 27-SUPPLEMENTAL-SUBMITTED
402405811	REMEDATION PROGRESS REPORT

Total Attach: 2 Files

General Comments

User Group

Comment

Comment Date

		Stamp Upon Approval
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Total: 0 comment(s)