

# State of Colorado Oil and Gas Conservation Commission

1120 Lincoln Street, Suite 801, Denver, Colorado 80203

Phone: (303) 894-2100 Fax: (303) 894-2109



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## 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: <u>PETROSHARE CORPORATION</u>	Operator No: <u>10454</u>	<b>Phone Numbers</b>
Address: <u>9635 MAROON CIRCLE #400</u>		Phone: <u>(303) 894-2100 x 5181</u>
City: <u>ENGLEWOOD</u> State: <u>CO</u> Zip: <u>80112</u>		Mobile: <u>(303) 905-5341</u>
Contact Person: <u>James Hix - OWP EPS</u>	Email: <u>james.hix@state.co.us</u>	

### PROJECT, PURPOSE & SITE INFORMATION

#### PROJECT INFORMATION

Remediation Project #: 20822 Initial Form 27 Document #: 402870785

#### 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: Nordman Trust (OWP) #42-20X: PA Well Venting Gas

#### SITE INFORMATION

No ☐ Multiple Facilities ☐

Facility Type: <u>WELL</u>	Facility ID: <u></u>	API #: <u>039-06541</u>	County Name: <u>ELBERT</u>
Facility Name: <u>NORDMAN TRUST 42-20X</u>	Latitude: <u>39.515475</u>	Longitude: <u>-104.572007</u>	
** correct Lat/Long if needed: Latitude: <u></u>		Longitude: <u></u>	
QtrQtr: <u>SENE</u>	Sec: <u>20</u>	Twp: <u>6S</u>	Range: <u>64W</u> Meridian: <u>6</u> Sensitive Area? <u>Yes</u>

#### SITE CONDITIONS

General soil type - USCS Classifications SM Most Sensitive Adjacent Land Use Pasture/Rangeland

Is domestic water well within 1/4 mile? No Is surface water within 1/4 mile? Yes

Is groundwater less than 20 feet below ground surface? No

## Other Potential Receptors within 1/4 mile

An intermittent drainage and stock ponds to the east are potential receptors in addition. A drainage to Running Creek and Box Elder Creek is also a potential receptor.

## 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) E&P Debris - Well Plugging and Abandonment

### DESCRIPTION OF IMPACT

Impacted?	Impacted Media	Extent of Impact	How Determined
Yes	SOILS	12'x12'	Samples

### INITIAL ACTION SUMMARY

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

Emergency response measure to plug and abandon (PA) the Nordman #42-20X venting gas. A gas sample was collected by Fremont Environmental on 11/16/2021.

### 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 ):

If impacted soils are encountered during the PA activities, one or more soil samples will be collected for Table 915-1 parameters. Inspection photographs taken on 11/9/2021 do not show stained soils around the wellhead. Impacted soils were encountered in the sidewalls of the wellhead excavation at approximately 6 feet bgs.

#### Proposed Groundwater Sampling

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

Groundwater was not encountered during the Nordman Trust (OWP) #42-20X PA Operations. Groundwater samples are not expected to be collected during the PA operations; however, collection of groundwater samples may be evaluated during subsequent operations if soil samples exceed Table 915-1 concentrations/levels and pending further review of the depth to shallow groundwater.

#### Proposed Surface Water Sampling

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

Surface water samples are not expected to be collected during the PA operations for the Nordman Trust (OWP) #42-20X.

### Additional Investigative Actions

- ☐ Additional alternative investigative actions described in attached Site Investigation Plan ( summary ):

Additional alternative investigative actions are not expected to be warranted during the PA operations for the Nordman Trust (OWP) #42-20X.

## SITE INVESTIGATION REPORT

### SAMPLE SUMMARY

Soil

NA / ND

Number of soil samples collected 6

Number of soil samples exceeding 915-1 1

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

Approximate areal extent (square feet) 144

-- Highest concentration of TPH (mg/kg) 99

-- Highest concentration of SAR 1.37

BTEX > 915-1 No

Vertical Extent > 915-1 (in feet) 6

#### Groundwater

Number of groundwater samples collected 0

Was extent of groundwater contaminated delineated? No

Depth to groundwater (below ground surface, in feet) 1

Number of groundwater monitoring wells installed 1

Number of groundwater samples exceeding 915-1 1

Highest concentration of Benzene (µg/l) 1

Highest concentration of Toluene (µg/l) 1

Highest concentration of Ethylbenzene (µg/l) 1

Highest concentration of Xylene (µg/l) 1

Highest concentration of Methane (mg/l) 1

#### 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?

☐ Was investigation derived waste (IDW) generated as part of this investigation?

Volume of solid waste (cubic yards) 1

Volume of liquid waste (barrels) 1

☒ Is further site investigation required?

More than 10 cubic yards of impacted soil left in place: 12 ft by 12 ft by 6 ft bgs. The highest PID Reading was 502.5 ppm (West Wall Sample at 6 ft bgs). Additional investigation is required to delineate impact to the west and remove impacted soil.

### REMEDIAL ACTION PLAN

Does this Supplemental Form 27A include changes to a previously approved Remedial Action Plan? Yes

#### SOURCE REMOVAL SUMMARY

Describe how source is to be removed.

Source removal will be through excavation of impacted soil around the wellhead. The OWP well was found to be leaking gas on 11/8/2021, and the COGCC inspector was able to tighten the stuffing box bolts to temporarily stop the leak on 11/9/2021. The well was later found to be leaking gas again. The Nordman Trust (OWP) #42-20X was plugged and abandoned (PA) on 12/15/2021 to stop the well from venting gas. Associated flowlines will be decommissioned at a later date and impacted soil will be excavated and hauled to a commercial disposal facility.

#### 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.

Stained soil was not observed around the surface of the Nordman Trust (OWP) #42-20X during a recent inspection photographs taken on 11/9/2021 or on 11/16/2021. Impacted subsurface soils were encountered in west wall soil sample (W Wall 6 Ft.): 1,3,5-Trimethyl benzene was reported at 0.026 mg/kg, 1-Methyl-naphthalene (0.599 mg/kg), 2-Methyl-naphthalene (0.556 mg/kg) which are below the Residential SSL, but are above the Protection of Groundwater SSL. TPH-GRO (5.9 mg/kg), TPH-DRO (99 mg/kg), TPH-ORO (< 50 mg/kg). Concentrations of VOC/TPH reported in the Floor 8 Ft sample were either not detected or were below Table 915-1 cleanup concentrations. Arsenic (3.78 mg/kg) was reported above the Residential and Protection of Groundwater SSL. Barium, lead, and selenium were reported above their respective Table 915-1 Protection of Groundwater SSL in the W Wall 6 Ft sample.

#### Soil Remediation Summary

☐ In Situ

☐ Ex Situ

\_\_\_\_\_ Bioremediation ( or enhanced bioremediation )  
\_\_\_\_\_ Chemical oxidation  
\_\_\_\_\_ Air sparge / Soil vapor extraction  
\_\_\_\_\_ Natural Attenuation  
\_\_\_\_\_ Other \_\_\_\_\_

\_\_\_\_\_ Excavate and offsite disposal  
\_\_\_\_\_ If Yes: Estimated Volume (Cubic Yards) \_\_\_\_\_  
\_\_\_\_\_ Name of Licensed Disposal Facility or COGCC Facility ID # \_\_\_\_\_  
\_\_\_\_\_ Excavate and onsite remediation  
\_\_\_\_\_ Land Treatment  
\_\_\_\_\_ Bioremediation (or enhanced bioremediation)  
\_\_\_\_\_ Chemical oxidation  
\_\_\_\_\_ Other \_\_\_\_\_

### **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

**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

### WASTE DISPOSAL INFORMATION

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

Describe beneficial use, if any, of E&P Waste derived from this remediation project:

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

E&P waste (solid) description

COGCC Disposal Facility ID #, if applicable:

Non-COGCC Disposal Facility:

Volume of E&P Waste (liquid) in barrels

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?

Does the previous reply indicate consideration of background concentrations?

Does Groundwater meet Table 915-1 standards?

Is additional groundwater monitoring to be conducted?

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.

The Nordman Trust (OWP) #42-20X well pad will be reclaimed at a later date, once flowlines have been decommissioned. Reclamation will consist of scarifying the surface and re-seeding the location with a native seed mix or suitable seed mix approved by the surface owner.

Is the described reclamation complete? \_\_\_\_\_

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. \_\_\_\_\_

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. \_\_\_\_\_

Actual Spill or Release date, or date of discovery. \_\_\_\_\_

## SITE INVESTIGATION DATES

Date of Initial Actions described in Site Investigation Plan (start date). 11/16/2021

Proposed site investigation commencement. \_\_\_\_\_

Proposed completion of site investigation. \_\_\_\_\_

## REMEDIAL ACTION DATES

Proposed start date of Remediation. \_\_\_\_\_

Proposed date of completion of Remediation. \_\_\_\_\_

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**

Fremont Environmental collected soil samples from an excavation around the Nordman Trust 42-20X wellhead on 12/17/2021 during wellhead closure to control a casing gas leak. Impacted soils encountered in the west side wall at 6 ft bgs will be removed for off-site disposal concurrently with the abandonment of flowlines and facility equipment.

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

Signed: James Hix

Title: OWP EPS

Submit Date: 01/24/2022

Email: james.hix@state.co.us

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: 20822

**Condition of Approval****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**

402935495	REMEDIATION PROGRESS REPORT
402935497	ANALYTICAL RESULTS

Total Attach: 2 Files

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

		Stamp Upon Approval
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Total: 0 comment(s)