

# State of Colorado Oil and Gas Conservation Commission

1120 Lincoln Street, Suite 801, Denver, Colorado 80203  
Phone: (303) 894-2100 Fax: (303) 894-2109



Document Number:

403215682

Receive Date:

01/03/2023

Report taken by:

John Heil

## 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>ANSCHUTZ EXPLORATION CORP</u>	Operator No: <u>3104</u>	<b>Phone Numbers</b>
Address: <u>555 17TH ST STE 2400</u>		Phone: <u>(303) 299-1599</u>
City: <u>DENVER</u>	State: <u>CO</u>	Zip: <u>80202</u>
Contact Person: <u>Schuyler Hamilton</u>	Email: <u>schuyler.hamilton@aec-denver.com</u>	Mobile: <u>(720) 925-1820</u>

### PROJECT, PURPOSE & SITE INFORMATION

#### PROJECT INFORMATION

Remediation Project #: 23348 Initial Form 27 Document #: 403056825

#### 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

☐ Yes ☐ Multiple Facilities

Facility Type: <u>LOCATION</u>	Facility ID: <u>315979</u>	API #: _____	County Name: <u>RIO BLANCO</u>
Facility Name: <u>PRF-63N97W 21NESE</u>		Latitude: <u>40.212478</u>	Longitude: <u>-108.276409</u>
		** correct Lat/Long if needed: Latitude: _____	Longitude: _____
QtrQtr: <u>NESE</u>	Sec: <u>21</u>	Twp: <u>3N</u>	Range: <u>97W</u>
		Meridian: <u>6</u>	Sensitive Area? <u>Yes</u>
Facility Type: <u>SPILL OR RELEASE</u>	Facility ID: <u>481972</u>	API #: _____	County Name: <u>RIO BLANCO</u>
Facility Name: <u>PRF C-1W</u>		Latitude: <u>40.212620</u>	Longitude: <u>-108.276390</u>
		** correct Lat/Long if needed: Latitude: <u>40.212630</u>	Longitude: <u>-108.276100</u>
QtrQtr: <u>NESE</u>	Sec: <u>21</u>	Twp: <u>3N</u>	Range: <u>97W</u>
		Meridian: <u>6</u>	Sensitive Area? <u>Yes</u>

## **SITE CONDITIONS**

General soil type - USCS Classifications ML

Most Sensitive Adjacent Land Use 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**

NA

## 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	To be determined	Laboratory analysis of soil 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.

On March 27, 2022, an unknown volume of produced water overflowed from a tank and was spilled inside secondary containment. Please reference Form 27 Document 403068552 for initial response and spill characterization details.

On July 25, 2022, 10 soil borings were advanced using a direct push drill rig to continue characterization and delineation of identified impacts to soil. Based on a review of laboratory results and spatial data, Total Petroleum Hydrocarbons (TPH), Soil Suitability for Reclamation (SSR) constituents and arsenic exceeding COGCC Table 915-1 Residential Soil Screening Levels remain undelineated at the Location. Assessment activities and results are detailed in the attached Report of Work Completed (ROWC).

### 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 ):

Additional soil samples will be collected as needed to further delineate the vertical and horizontal extents of soil impacts . Additional background soil samples may be collected to characterize native concentrations of various inorganic constituents of concern. Supplemental form will be submitted documenting proposed locations of additional sampling.

#### 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

NA / ND

Number of soil samples collected      31

--      Highest concentration of TPH (mg/kg)      4414

Number of soil samples exceeding 915-1 31

-- Highest concentration of SAR 70.2

Was the areal and vertical extent of soil contamination delineated? No

BTEX > 915-1 No

Approximate areal extent (square feet) 5000

Vertical Extent > 915-1 (in feet) 12

#### Groundwater

Number of groundwater samples collected 0

Highest concentration of Benzene (µg/l)

Was extent of groundwater contaminated delineated? No

Highest concentration of Toluene (µg/l)

Depth to groundwater (below ground surface, in feet)

Highest concentration of Ethylbenzene (µg/l)

Number of groundwater monitoring wells installed

Highest concentration of Xylene (µg/l)

Number of groundwater samples exceeding 915-1

Highest concentration of Methane (mg/l)

#### Surface Water

1 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.

### OTHER INVESTIGATION INFORMATION

☐ Were impacts to adjacent property or offsite impacts identified?

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

On September 28, 2022, five soil samples were collected from nearby, native, non-impacted soil. See the attached ROWC for analytical results.

☐ 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 soil sampling and delineation in accordance with Rule 913.b.(2). Delineation will be completed in the spring of 2023 when weather conditions are suitable for conducting further delineation under secondary containment and the location. A quarter 1, 2023 summary report will be submitted prior to delineation. Upon completing delineation, in-situ and ex-situ remediation strategies will be evaluated and proposed in the subsequent form 27.

### 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.

Remediation strategies will be evaluated following delineation of identified impacts. The selected remedial approach will be presented in a Supplemental eForm 27.

#### REMEDIAL 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.

Initial site investigation efforts were completed on May 10, 2022. Eight soil samples were collected at the Location from the point of release (POR) and from visibly saturated areas of the pad surface. Analytical results of soil samples indicated exceedances of COGCC Table 915-1 Residential Screening Levels for total petroleum hydrocarbons (TPH), pH, sodium adsorption ratio (SAR), and arsenic. On July 25, 2022, drilling activities were conducted to delineate the extents of confirmed soil impacts. A total of 18 soil samples were collected from ten soil borings advanced using a direct push drill rig. Collected samples were packed on ice and delivered to a laboratory for analysis of the approved reduced suite of TPH, pH, SAR, and arsenic. Laboratory results of the borehole samples indicate compliance with COGCC Table 915-1 Residential Soil Screening Levels except for SAR, pH, and arsenic.

On September 28, 2022, additional investigation was performed to delineate the extent of soil impacts within secondary containment. A total of five soil samples were collected from three soil borings which were advanced with a hand auger to delineate the vertical extent of soil impacts beneath secondary containment. Laboratory results of the pothole samples exceed COGCC Table 915-1 Residential Soil Screening Levels for TPH, SAR, pH, and arsenic. Laboratory results of background samples collected on September 28, 2022, exceed COGCC Table 915-1 Residential Soil Screening Levels for pH and arsenic. See the attached ROWC for details regarding proposed additional site investigation.

#### Soil Remediation Summary

**In Situ**

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

**Ex Situ**

\_\_\_\_\_ 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 Q4 2022 Status Update

### 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.

As discussed in COGCC operator meetings, further instructions are forthcoming on how to address this form change without characterization being completed. Anticipated cost for delineation with an environmental drilling rig are entered below.

Operator anticipates the remaining cost for this project to be: \$ 23000

### 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.

Any disturbance of the pad surface will be returned to the active working surface of the location for continued operation. When the site is decommissioned at a later date, it will be reclaimed in accordance with 1000 Series regulations.

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. \_\_\_\_\_

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. 03/27/2022

### **SITE INVESTIGATION DATES**

Date of Initial Actions described in Site Investigation Plan (start date). 03/27/2022

Proposed site investigation commencement. 05/10/2022

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**

This form has been submitted to provide the COGCC with updated site investigation information. Please find site investigation information details in the attached ROWC. Additional delineation was conducted under secondary containment via hand auger. Condition of approval on document number 403167710 have been completed. Initial form 27 for Pit Closure has been submitted under document # 403265956.

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

Signed: Schuyler Hamilton

Title: Env Compliance Specialist

Submit Date: 01/03/2023

Email: schuyler.hamilton@aec-denver.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: John Heil

Date: 01/17/2023

Remediation Project Number: 23348

**COA Type****Description**

	Operator shall determine the vertical extent of impacts beneath the secondary containment structure.
1 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**

403215682	FORM 27-SUPPLEMENTAL-SUBMITTED
403277566	REMEDATION PROGRESS REPORT

Total Attach: 2 Files

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

		Stamp Upon Approval
--	--	---------------------

Total: 0 comment(s)