

State of Colorado  
Energy & Carbon Management Commission

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Report taken by:  
Chris Sanchez

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 ECMC 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: CITATION OIL & GAS CORP	Operator No: 17180	Phone Numbers Phone: (218) 891-1550 Mobile: (713) 702-7534
Address: 14077 CUTTEN RD		
City: HOUSTON	State: TX	Zip: 77069
Contact Person: Bob Redweik	Email: bredweik@cogc.com	

PROJECT, PURPOSE & SITE INFORMATION

PROJECT INFORMATION

Remediation Project #: 32621 Initial Form 27 Document #: 403575333

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: LOCATION	Facility ID: 321676	API #: _____	County Name: CHEYENNE
Facility Name: ARAPAHOE UNIT-614S42W 28NENE	Latitude: 38.811505	Longitude: -102.111605	
** correct Lat/Long if needed: Latitude: _____		Longitude: _____	
QtrQtr: NENE	Sec: 28	Twp: 14S	Range: 42W Meridian: 6 Sensitive Area? Yes

Facility Type: TANK BATTERY	Facility ID: 480502	API #: _____	County Name: CHEYENNE
Facility Name: Arapahoe Unit Tank Battery Sec. 28	Latitude: 38.812989	Longitude: -102.113057	
** correct Lat/Long if needed: Latitude: _____		Longitude: _____	
QtrQtr: NENE	Sec: 28	Twp: 14S	Range: 42W Meridian: 6 Sensitive Area? No

## **SITE CONDITIONS**

General soil type - USCS Classifications SM

Most Sensitive Adjacent Land Use Agriculture

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**

Surface water is present in the form of a freshwater emergent wetland 0.44 miles E of the location and the Ladder Creek classified as a riverine habitat approximately 0.73 mi W of the site. There are 7 water wells within a mile radius of the site and the closest is a commercial well located 0.68 miles NE of the site. The closest livestock and occupied buildings are located 0.86 miles WNW of the site. There are no CPW HPHs, within a 1-mile radius of the site.

# SITE INVESTIGATION PLAN

## TYPE OF WASTE:

- |  |  |  |
|--|--|--|
| <input checked="" type="checkbox"/> E&P Waste      | <input type="checkbox"/> Other E&P Waste             | <input type="checkbox"/> Non-E&P Waste |
| <input checked="" type="checkbox"/> Produced Water | <input type="checkbox"/> Workover Fluids             | _____                                  |
| <input type="checkbox"/> Oil                       | <input type="checkbox"/> Tank Bottoms                |  |
| <input type="checkbox"/> Condensate                | <input type="checkbox"/> Pigging Waste               |  |
| <input type="checkbox"/> Drilling Fluids           | <input type="checkbox"/> Rig Wash                    |  |
| <input type="checkbox"/> Drill Cuttings            | <input type="checkbox"/> Spent Filters               |  |
|  | <input type="checkbox"/> Pit Bottoms                 |  |
|  | <input type="checkbox"/> Other (as described by EPA) | _____                                  |

## DESCRIPTION OF IMPACT

Impacted?	Impacted Media	Extent of Impact	How Determined
Yes	SOILS	Undetermined	Soil Sampling

## INITIAL ACTION SUMMARY

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

During a severe thunderstorm on the evening of 6/4/23, lightning struck the fiberglass produced water tank and caused its catastrophic failure. Production to the facility was immediately shut-down. Upon initial inspection, the contents of the tank appear to have remained within the secondary containment dikes.

## 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 ):

On August 11, 2023, two (2) soil samples (SS01 & SS02) were collected from the surface of the former produced water vessel containment area at a depth of 0-6 inches below ground surface. The samples were submitted for laboratory analysis of the full COGCC Table 915-1 suite. SS01 exhibited TPH and Boron concentrations above regulatory limits, and both samples exhibited SAR levels above regulatory limits. Both samples also exhibited Arsenic levels above standards; however, a background soil sample (BKG01) was collected upgradient and off location and demonstrated that elevated Arsenic levels are naturally occurring in the area. Soil sampling locations are displayed on the attached soil sample location map, and analytical results are presented in the attached analytical tables and laboratory reports.

### 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 ):

Following excavation activities, additional confirmation soil sampling shall be conducted per COGCC Table 915-1 requirements.

# SITE INVESTIGATION REPORT

## SAMPLE SUMMARY

<b>Soil</b>	<b>NA / ND</b>
Number of soil samples collected <u>12</u>	-- Highest concentration of TPH (mg/kg) <u>1360</u>
Number of soil samples exceeding 915-1 <u>2</u>	-- Highest concentration of SAR <u>61.4</u>

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

BTEX > 915-1 No

Approximate areal extent (square feet) 530

Vertical Extent > 915-1 (in feet) 1

**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**

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?

One background sample (BKG01) was collected upgradient and off location and demonstrated that elevated Arsenic levels are naturally occurring in the area. Soil sampling locations are displayed on the attached soil sample location map, and analytical results are presented in the attached analytical tables and laboratory reports.

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?

Investigation will proceed during excavation to delineate the horizontal and vertical extent of impacts by soil screening with a PID and collection of confirmation soil samples within the spill boundary.

**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.

Source material shall be excavated and transported to a certified waste 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.

Excavation and confirmation soil sampling activities shall be completed as soon as contractors are available and weather permits in 1Q2025.

**Soil Remediation Summary**

In Situ

Ex Situ

\_\_\_\_\_ Bioremediation ( or enhanced bioremediation )

\_\_\_\_\_ Excavate and offsite disposal

\_\_\_\_\_ Chemical oxidation

\_\_\_\_\_ If Yes: Estimated Volume (Cubic Yards) \_\_\_\_\_

\_\_\_\_\_ Air sparge / Soil vapor extraction

\_\_\_\_\_ Name of Licensed Disposal Facility or ECMC Facility ID # \_\_\_\_\_

\_\_\_\_\_ Natural Attenuation

\_\_\_\_\_ Excavate and onsite remediation

\_\_\_\_\_ Other \_\_\_\_\_

\_\_\_\_\_ 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.



Is additional groundwater monitoring to be conducted? \_\_\_\_\_

Operator shall comply with the ECMC 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.

A reclamation plan will be prepared pending the outcome of the site investigation.

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. 06/04/2023

### SITE INVESTIGATION DATES

Date of Initial Actions described in Site Investigation Plan (start date). 08/11/2023

Proposed site investigation commencement. 01/06/2025

Proposed completion of site investigation. 02/20/2025

### REMEDIAL ACTION DATES

Proposed start date of Remediation. 01/20/2025

Proposed date of completion of Remediation. 03/17/2025

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:

Citation is currently obtaining additional excavation contractors to increase remediation efforts as current resources are inadequate to make sufficient progress on remediation sites.

## OPERATOR COMMENT

This form serves as the 1Q2025 update for this location. Soil material planned for berm construction was sampled to determine if it could be reused onsite for future secondary containment. A total of 4 samples were collected 6 inches below the pile surface and submitted to a laboratory for Table 915-1 analyses. Separate soil samples from the same locations were screened with a PID, resulting in VOC concentrations below 1.3 PPM in all samples. Analytical results indicate SAR, EC, & pH impacts exist within the pile above Table 915-1 regulatory limits. Arsenic concentrations were also above regulatory limits but are consistent with naturally occurring concentration within the adjacent area. Therefore, soil will be hauled from the location for disposal. A waste characterization was established with the Kit Carson County Landfill on 11/4/2024. Waste will be removed upon contractor availability in 1Q2025, weather permitting.

Further delineation of the spill area boundary, within the ruptured tank secondary containment, was completed on 1/6/2025. A total of 5 soil samples were collected at a depth of 2 feet below ground surface. Sample points were located at each corner of the former containment area and 1 in the containment center. Samples were submitted to a laboratory for Table 915-1 analyses on 1/10/2025. Delineation samples will help determine the vertical extent of remaining SAR, EC & pH impacts and guide further excavation. Site remediation will commence upon contractor availability in 1Q2025.

Citation will continue to delineate the horizontal and vertical extent of impacts through excavation, soil screening with a PID, and collection of confirmation soil samples. Confirmation samples will be collected to adequately demonstrate removal of impacts and analyzed for Table 915-1 constituents. Citation will submit a Form 27 supplemental report including the following supportive documentation: figure displaying impacted area/depth and sample locations; summary of field observations, soil screening, and laboratory analytical results; waste disposal documentation in 2Q2025.

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

Signed: Joel Mason

Title: Agent

Submit Date: 01/20/2025

Email: joel.mason@absarokasolutions.com

Based on the information provided herein, this Application for Site Investigation and Remediation Workplan complies with ECMC Rules and applicable orders and is hereby approved.

ECMC Approved: Chris Sanchez

Date: 04/04/2025

Remediation Project Number: 32621

### COA Type

### Description

	COC for Samples collected on 11/26/2024 indicate samples to be analyzed for Full Table 915. The attached lab report only provides Data for TPH, BTEX, Inorganics and Metals. Operator shall provide data for Full Table 915-1 contaminants of concern in the next supplemental Form filing.
	Operator shall define the vertical and lateral extent of impacts to soil. Additional sampling is required to fully delineate the vertical and lateral impacts to soil  Operator shall collect confirmation soil samples for Full Table 915-1 Contaminants of Concern
	Operator shall continue quarterly reporting until the site investigation is complete and Full Table 915-1 standards are met within the remediation area
	On the next Supplemental Form 27 filing, the Operator shall provide all recent and historical analytical data in a table format.
4 COAs	

### ATTACHMENT 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

403969911	FORM 27-SUPPLEMENTAL-SUBMITTED
404062510	ANALYTICAL RESULTS
404062511	ANALYTICAL RESULTS
404062512	SOIL SAMPLE LOCATION MAP

Total Attach: 4 Files

### General Comments

<u>User Group</u>	<u>Comment</u>	<u>Comment Date</u>
		Stamp Upon Approval

Total: 0 comment(s)