

State of Colorado  
Oil and Gas Conservation Commission

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Report taken by:  
Krystal Heibel

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: CITATION OIL & GAS CORP	Operator No: 17180	Phone Numbers Phone: (281) 891-1500 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 #: 24026 Initial Form 27 Document #: 402820669

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

No Multiple Facilities

Facility Type: SPILL OR RELEASE	Facility ID: 480165	API #: _____	County Name: LOGAN
Facility Name: Dubois Tank Battery	Latitude: 40.774699	Longitude: -103.221102	
** correct Lat/Long if needed: Latitude: _____		Longitude: _____	
QtrQtr: NENW	Sec: 7	Twp: 9N	Range: 52W Meridian: 6 Sensitive Area? Yes

SITE CONDITIONS

General soil type - USCS Classifications SC Most Sensitive Adjacent Land Use Livestock Grazing  
Is domestic water well within 1/4 mile? Yes 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	To be determined	N/A

**INITIAL ACTION SUMMARY**

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

Citation removed all fluid and visually impacted soils from the spill location between 6/11/21 and 6/21/21. Absaroka sampled release on 6/23/21. The soil sampling activity and results are reported in Form 19 document number 402785100.

**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 ):

Citation has completed soil sampling across the site, including former pit locations to the southeast of the site as the facility was decommissioned entirely. Samples were collected from all locations where equipment was situated, as well as beneath the cattle guard in the southwest corner of the facility. 13 soil sample locations were chosen based on former equipment onsite. Investigation samples were analyzed in accordance with Table 915-1. Soil samples were also collected from two upgradient/cross-gradient locations to establish background conditions with respect to EC, SAR, pH, boron and metals.

**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 13  
Number of soil samples exceeding 915-1 13  
Was the areal and vertical extent of soil contamination delineated? No  
Approximate areal extent (square feet) 5000

**NA / ND**

ND Highest concentration of TPH (mg/kg) \_\_\_\_\_  
-- Highest concentration of SAR 78.1  
BTEX > 915-1 No  
Vertical Extent > 915-1 (in feet) 2

**Groundwater**

Number of groundwater samples collected 0  
Was extent of groundwater contaminated delineated? No  
Depth to groundwater (below ground surface, in feet) \_\_\_\_\_  
Number of groundwater monitoring wells installed \_\_\_\_\_  
Number of groundwater samples exceeding 915-1 \_\_\_\_\_

ND Highest concentration of Benzene (µg/l) \_\_\_\_\_  
ND Highest concentration of Toluene (µg/l) \_\_\_\_\_  
ND Highest concentration of Ethylbenzene (µg/l) \_\_\_\_\_  
ND Highest concentration of Xylene (µg/l) \_\_\_\_\_  
ND 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?

Two background sample were collected from adjacent, upgradient, unaffected areas east and west of the site, and analyzed for EC, SAR, pH, boron, and metals

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

Volume of solid waste (cubic yards) 310 Volume of liquid waste (barrels) 399

Is further site investigation required?

Additional sampling to evaluate soil suitability conditions and potential in-situ remediation applicability to address the boron and SAR exceedances are being evaluated.

**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.

Following completion of the complete site investigation and delineation, Citation will remove any additional sources of contaminants not previously removed as part of the facility decommissioning.

**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.

Citation will develop and implement a site-specific remediation strategy. This strategy will include excavation and disposal of highly impacted materials within the near surface soils, and possible treatment and/or burial at depth (below growing horizon/root zone) to address the SAR and boron exceedances in the former pit area(s). Non-hydrocarbon impacts such as EC, SAR or metals may be left in place following additional excavation & sampling if they do not occur in conjunction with hydrocarbons and they are below the root zone, and hence would not affect reclamation potential.

**Soil Remediation Summary**

In Situ

Ex Situ

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

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

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

If Yes: Estimated Volume (Cubic Yards) 2000

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

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

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

\_\_\_\_\_ 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 \_\_\_\_\_

## 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.

Citation carries general liability insurance of \$2,000,000, with excess liability insurance of \$35,000,000. Citation also carries pollution/waste liability insurance of \$20,000,000, and environmental related liability insurance of \$3,000,000 for all active wells and \$1,000,000 for all plugged and abandoned wells. Citation maintains \$1,135,000 in surety bonds with the COGCC. There is no site-specific financial assurance associated with this remediation project. Citation does not intend to file an insurance claim for this remediation project.

Operator anticipates the remaining cost for this project to be: \$ 50000

## 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:

All E&P waste generated thusfar has been disposed at Pawnee Waste, LLC. Additional removal and disposal activities will continue. 310 cubic yards of soil have been removed for disposal.

Volume of E&P Waste (solid) in cubic yards 310

E&P waste (solid) description Soil impacted by crude oil and produced water

COGCC Disposal Facility ID #, if applicable: \_\_\_\_\_

Non-COGCC Disposal Facility: Pawnee Waste, LLC

Volume of E&P Waste (liquid) in barrels 399

E&P waste (liquid) description Produced water and crude oil

COGCC Disposal Facility ID #, if applicable: \_\_\_\_\_

Non-COGCC Disposal Facility: Pawnee Waste, LLC

## 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 area will be countoured to match the topographic landscape. The Site will then be seeded with a landowner-approved seedmix.

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). 07/25/2022

Proposed site investigation commencement. 09/23/2022

Proposed completion of site investigation. 09/23/2022

### REMEDIAL ACTION DATES

Proposed start date of Remediation. 12/27/2022

Proposed date of completion of Remediation. 03/31/2023

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

No hydrocarbon impacts were found at the Dubois Tank Battery location. Inorganic concentrations exceeded Table 915-1 and these locations need to be evaluated further for additional soil suitability constituents to determine a possible in-situ remediation application for the former pit area, per the Director's approval. Impacted soils remaining onsite will be excavated at the tank battery location followed by soil confirmation sampling during the first quarter of 2023. A Form 27 Supplemental will be completed during the first quarter of 2023 documenting site work and analytical data.

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

Signed: Ben Shoup

Title: Agent

Submit Date: 12/21/2022

Email: ben.shoup@absarokasolutions.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: Krystal Heibel

Date: 04/05/2023

Remediation Project Number: 24026

## COA Type

## Description

	Provide updates for remediation project #3806 (2006) and spill/release ID #450998 (2017) that occurred at this facility.
	Soil confirmation sample data indicate that pH and SAR at the site exceeds the Table 915-1 soil suitability levels for reclamation. If the Operator proposes to leave material with elevated levels of pH and SAR in situ, the Operator will provide a detailed Reclamation plan that includes, but is not limited to, soil analysis from adjacent undisturbed lands, revegetation techniques, site stabilization, and details of seeded species. Operator will submit the Reclamation plan on a Form 27 Supplemental Report for Director review.
	Soil analytics table shows EC, SAR, pH, boron, and arsenic exceedances. The operator shall perform sampling and analysis to fully delineate the lateral and vertical extent of those impacts.
	The surface area disturbed by the remediation activity shall be reclaimed in accordance with the 1000 Series Reclamation Rules. 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.
	Operator will continue quarterly reporting until the site investigation is complete and the implementation schedule can be updated. COGCC selected Quarterly under Remediation Progress Update.
	Operator shall provide a comprehensive list of all potential receptors within ¼ mile on the subsequent Supplemental Form 27.
6 COAs	

## 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

403218304	FORM 27-SUPPLEMENTAL-SUBMITTED
403218392	AERIAL IMAGE
403218393	SOIL SAMPLE LOCATION MAP
403218394	OTHER
403218399	ANALYTICAL RESULTS
403218405	PHOTO DOCUMENTATION
403218440	OTHER

Total Attach: 8 Files

### General Comments

<u>User Group</u>	<u>Comment</u>	<u>Comment Date</u>
Environmental	Remediation # 24026 is for a spill that occurred June 2021; Remediation # 3806 is for a spill that occurred Nov 2006 where E&P waste overcame the berm. Spill # 450998 is a spill that occurred March 2017 from external corrosion in a water injection line.	04/04/2023
Environmental	Location lies within the following mapped High Priority Habitat(s): Mule Deer Severe Winter Range	04/04/2023

Total: 2 comment(s)