

State of Colorado  
Oil and Gas Conservation Commission

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Report taken by:  
Laurel Anderson

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>CRESTONE PEAK RESOURCES OPERATING LLC</u>	Operator No: <u>10633</u>	Phone Numbers Phone: <u>(303) 2947864</u> Mobile: <u>( )</u>
Address: <u>1801 CALIFORNIA STREET #2500</u>		
City: <u>DENVER</u>	State: <u>CO</u>	Zip: <u>80202</u>
Contact Person: <u>Jacob Evans</u>	Email: <u>jevans@civiresources.com</u>	

PROJECT, PURPOSE & SITE INFORMATION

PROJECT INFORMATION

Remediation Project #: 13328 Initial Form 27 Document #: 402015002

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>459289</u>	API #: _____	County Name: <u>WELD</u>
Facility Name: <u>Grenemeyer-Wagner 1</u>	Latitude: <u>40.007916</u>	Longitude: <u>-104.875607</u>	
** correct Lat/Long if needed: Latitude: <u>40.007764</u>		Longitude: <u>-104.875555</u>	
QtrQtr: <u>SWNE</u>	Sec: <u>34</u>	Twp: <u>1N</u>	Range: <u>67W</u> Meridian: <u>6</u> Sensitive Area? <u>Yes</u>

Facility Type: <u>SPILL OR RELEASE</u>	Facility ID: <u>464355</u>	API #: _____	County Name: <u>WELD</u>
Facility Name: <u>Grenemeyer Wagner 1</u>	Latitude: <u>40.007764</u>	Longitude: <u>-104.875555</u>	
** correct Lat/Long if needed: Latitude: _____		Longitude: _____	
QtrQtr: <u>SWNE</u>	Sec: <u>34</u>	Twp: <u>1N</u>	Range: <u>67W</u> Meridian: <u>6</u> Sensitive Area? <u>Yes</u>

**SITE CONDITIONS**

General soil type - USCS Classifications SC

Most Sensitive Adjacent Land Use Cropland

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? Yes

**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	GROUNDWATER	TBD	Laboratory Analytical
Yes	SOILS	TBD	Laboratory Analytical

## 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 May 6, 2019 a soil boring (SB-01) was advanced in the former location of the partially buried produced water vessel to investigate potential hydrocarbon impacts. Soil and groundwater samples were collected from the boring and submitted for analysis of Table 910-1 constituents of concern; the soil sample exceeded Table 910-1 allowable limits for TPH (total petroleum hydrocarbons) and benzene, and the groundwater sample exceeded Table 910-1 allowable limits for benzene and xylenes. Fourteen additional soil borings have since been advanced and completed as monitoring wells to investigate the extent of soil and groundwater impacts. Soil samples were collected from each boring and submitted for Table 910-1 constituents of concern; soil impacts have not been delineated vertically or horizontally at this time. Organic groundwater impacts were delineated by monitoring well installation in 3rd quarter 2020, and groundwater analytical data has been within allowable limits for organic constituents of concern since Q1 2021. See Table 2 for a summary of groundwater analytical data. To address dissolved phase hydrocarbon impacts at the site, COGAC has been injected into the subsurface.

## 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 borings will be completed as needed to delineate soil impacts. Soils will be logged, field screened, and submitted for analysis of all Table 915-1 constituents of concern. One or more background samples may be collected to establish native levels of inorganic constituents of concern. A reduced analyte list may be requested in the future.

### Proposed Groundwater Sampling

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

Groundwater samples were collected as part of site investigation activities.

### 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 37  
Number of soil samples exceeding 915-1 9  
Was the areal and vertical extent of soil contamination delineated? No  
Approximate areal extent (square feet) 1000

**NA / ND**

-- Highest concentration of TPH (mg/kg) 1996  
-- Highest concentration of SAR 7.04  
BTEX > 915-1 Yes  
Vertical Extent > 915-1 (in feet) 30

**Groundwater**

Number of groundwater samples collected 156  
Was extent of groundwater contaminated delineated? Yes  
Depth to groundwater (below ground surface, in feet) 29  
Number of groundwater monitoring wells installed 15  
Number of groundwater samples exceeding 915-1 48

-- Highest concentration of Benzene (µg/l) 1150  
-- Highest concentration of Toluene (µg/l) 1.98  
-- Highest concentration of Ethylbenzene (µg/l) 118  
-- Highest concentration of Xylene (µg/l) 1950  
NA 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?  
Background samples were collected for analysis of Table 915-1 metals.  
 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.

A soil boring assessment was be completed to determine if soil concentrations remain above COGCC Table 915-1 standards. Soil samples were collected for laboratory analysis of Table 915-1 TPH C6-36, organics, metals, EC, SAR, pH, and boron.

**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.

Fifteen groundwater monitoring wells were installed and will be sampled on a quarterly basis to monitor natural attenuation. Due to the soil boring results Crestone will continue to sample for organic constituents in groundwater. Contingent on source remediation and quarterly groundwater results an anticipated date to achieve a no further action would be December 31, 2024.

**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

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**

No Bioremediation ( or enhanced bioremediation )

Yes Chemical oxidation

No Air sparge / Soil vapor extraction

Yes Natural Attenuation

Yes Other COGAC \_\_\_\_\_

### **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.

Fifteen monitoring wells were installed and will be sampled on a quarterly basis. Groundwater analytical has been compliant for four consecutive quarters for Table 915-1 organic compounds in groundwater. An amended groundwater analysis plan to include TDS, sulfates, and chlorides is proposed.

# 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.

The General Liability coverage within the Civitas Resources insurance program includes coverage for bodily injury, property damage, and pollution clean-up costs arising from qualifying pollution events of a sudden and accidental nature subject to a \$1,000,000 per occurrence limit and \$2,000,000 aggregate limit. The Civitas Resources insurance program includes Excess Liability coverage of \$110,000,000 per occurrence and in the aggregate which sits over the sudden and accidental pollution within the General Liability coverage. It is the opinion of Civitas Resources that this total tower of limit is adequate to address the costs of remediation associated with any qualifying pollution event.

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

## WASTE DISPOSAL INFORMATION

Was E&P waste generated as part of this remediation? No

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? No

Does the previous reply indicate consideration of background concentrations? \_\_\_\_\_

Does Groundwater meet Table 915-1 standards? Yes

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.

Reclamation activities will be completed in accordance with 1000 Series Rules, in collaboration with the landowner, and reported in a Form 4 (Sundry Notice) with proper documentation to demonstrate compliance with requirements for final reclamation

Is the described reclamation complete? Yes

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. 04/29/2019

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. 05/10/2019

Actual Spill or Release date, or date of discovery. 05/10/2019

### SITE INVESTIGATION DATES

Date of Initial Actions described in Site Investigation Plan (start date). 04/29/2019

Proposed site investigation commencement. 04/29/2019

Proposed completion of site investigation. 04/29/2019

### REMEDIAL ACTION DATES

Proposed start date of Remediation. 04/29/2019

Proposed date of completion of Remediation. 12/31/2024

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**

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

Signed: Jacob Evans

Title: Environmental Advisor

Submit Date: 02/09/2023

Email: jevans@civiresources.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: Laurel Anderson

Date: 04/14/2023

Remediation Project Number: 13328

**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**

403316654	FORM 27-SUPPLEMENTAL-SUBMITTED
403316671	MONITORING REPORT

Total Attach: 2 Files

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

		Stamp Upon Approval
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Total: 0 comment(s)