

# State of Colorado Oil and Gas Conservation Commission

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Document Number:

402738101

Receive Date:

07/20/2021

Report taken by:

CHRIS CANFIELD

## Site Investigation and Remediation Workplan (Initial 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: CRESTONE PEAK RESOURCES OPERATING LLC	Operator No: 10633	Phone Numbers Phone: (303) 7744017 Mobile: (720) 9251820
Address: 1801 CALIFORNIA STREET #2500		
City: DENVER State: CO Zip: 80202		
Contact Person: Schuyler Hamilton Email: Schuyler.Hamilton@CrestonePR.com		

### PROJECT, PURPOSE & SITE INFORMATION

#### PROJECT INFORMATION

Remediation Project #: 19222 Initial Form 27 Document #: 402738101

#### 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: 335772	API #: _____	County Name: WELD
Facility Name: SAM-61N66W 25NESW	Latitude: 40.019139	Longitude: -104.729227	
** correct Lat/Long if needed: Latitude: _____		Longitude: _____	
QtrQtr: NESW	Sec: 25	Twp: 1N	Range: 66W Meridian: 6 Sensitive Area? Yes

  

Facility Type: SPILL OR RELEASE	Facility ID: 480166	API #: _____	County Name: WELD
Facility Name: Sam Historical Spill	Latitude: 40.018692	Longitude: -104.729563	
** correct Lat/Long if needed: Latitude: _____		Longitude: _____	
QtrQtr: NESW	Sec: 25	Twp: 1N	Range: 66W Meridian: 6 Sensitive Area? Yes

## **SITE CONDITIONS**

General soil type - USCS Classifications SM

Most Sensitive Adjacent Land Use Cropland

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? Yes

### **Other Potential Receptors within 1/4 mile**

Two wells are represented within 1/4 mile of Facility ID 335772; however, there is no documentation archived with the Division of Water Resources to demonstrate the wells were ever constructed. Only Notices of Intent are available in both cases. No other potential receptors other than groundwater and surface water were identified 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	Pending investigation	Laboratory analysis
Yes	SOILS	Pending investigation	Laboratory analysis

### INITIAL ACTION SUMMARY

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

Historical soil contamination was discovered, but the cause of the release and the material released are unknown. The release was reported to the COGCC on June 9, 2021 via F19i (document #402710979) to generate Spill/Release Point ID 480166. Soil impacts were pursued by excavation until groundwater saturation and proximity to surface water restricted further excavation efforts. Soil borings were used to partially delineate the horizontal extent of soil impacts on June 25.

### 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 ):

To date, all submitted soil samples have been analyzed for all Table 915-1 constituents. Crestone Peak Resources (Crestone) proposes to remove Table 915-1 inorganic constituents of concern from the analyte list. If approved, future soil samples will be submitted for analysis of Table 915-1 organic constituents of concern. Soil samples will be collected and analyzed for approved constituents of concern until the horizontal and vertical extents are defined.

#### Proposed Groundwater Sampling

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

BKG01\_GW was collected 6/25 and submitted for Table 915-1 inorganic constituents of concern to determine native concentrations of total dissolved solids, chlorides, and sulfates. GW01 was collected on 7/1 and submitted for Table 915-1 constituents of concern. Lab analysis of GW01 indicates all organic constituents were below lab detection limits. Total dissolved solids and chloride ions were detected within allowable limits, and sulfate ions exceeded allowable limits.

Because no organic constituents of concern were detected in GW01, Crestone proposes to analyze future groundwater samples for Table 915-1 inorganic constituents of concern.

#### 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 30

Number of soil samples exceeding 915-1 1

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

Approximate areal extent (square feet) 1800

**Groundwater**

Number of groundwater samples collected 2

Was extent of groundwater contaminated delineated? No

Depth to groundwater (below ground surface, in feet) 20'

Number of groundwater monitoring wells installed 0

Number of groundwater samples exceeding 915-1 1

**Surface Water**

0 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.

**NA / ND**

-- Highest concentration of TPH (mg/kg) 680

-- Highest concentration of SAR 2.92

BTEX &gt; 915-1 Yes

Vertical Extent &gt; 915-1 (in feet) 20

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)

NA Highest concentration of Methane (mg/l)

**OTHER INVESTIGATION INFORMATION**☐ Were impacts to adjacent property or offsite impacts identified?☒ Were background samples collected as part of this site investigation?

Background soil samples and a groundwater sample were collected and analyzed for Table 915-1 constituents of concern. Laboratory results for soil samples BKG01 @25 and BH01 @25 indicate arsenic, barium, and selenium values in exceedance of Table 915-1 allowable limits in native soil. Soil sample BKG01 @23-26 indicates pH in exceedance of Table 915-1 allowable limits in native soil. Crestone requests consideration of Footnote 11 from Table 915-1 to raise the allowable limits of arsenic, barium, and selenium to 6.52, 417.5, and 1.311 mg/kg, respectively. Crestone also requests consideration that native pH values are elevated at this site. The highest pH value recorded from delineation efforts (8.51) is only 1.01 times higher than native levels (8.39).

Results for groundwater sample GW01 indicate native levels of total dissolved solids, chloride, and sulfate at 667, 221, and 272 mg/L respectively.

☐ 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?

The remedial excavation became unsafe to continue and was therefore backfilled to prevent damage to property and/or injury. The Western portion of the excavation will be characterized with soil borings. Approximately four soil borings will be installed to 35' bgs to characterize the Western portion of the previous excavation to determine the horizontal extents of soil impacts. One soil boring will be installed to approximately 40' bgs to delineate the vertical extents of soil impacts. Soil samples will be collected from intervals of concern, field-screened, and submitted for laboratory analysis. Samples will not be collected from backfill material. Grab groundwater samples will be collected from the soil borings.

**REMEDIAL ACTION PLAN****SOURCE REMOVAL SUMMARY**

Describe how source is to be removed.

Impacted soil may be removed and transported for offsite disposal at an approved facility. Groundwater removed from the excavation to facilitate soil removal efforts will be transported for offsite disposal at an approved facility. Transport and disposal records will be kept on file under usual and customary practice and are available upon request.

**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.

Soil impacts were identified by field-screening and laboratory analysis and removed using conventional excavation techniques. Due to the proximity of surface water to the West, soil borings were installed on June 25, 2021 to partially delineate the horizontal extent of soil impacts and to verify that the historical release did not impact surface water. Proof of soil clearance could not be achieved with excavation due to soil type, saturated conditions, and reach limits of excavation equipment. The vertical and horizontal extents of impacts will be delineated with soil borings once the area has been backfilled.

Stockpiles C01 through C06 were composed of clean overburden material and were composite sampled for clearance. Impacted and potentially impacted soils were not stockpiled on site.

## **Soil Remediation Summary**

☐ In Situ

☒ Ex Situ

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

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

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

\_\_\_\_\_ If Yes: Estimated Volume (Cubic Yards) \_\_\_\_\_ 4000

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

\_\_\_\_\_ Name of Licensed Disposal Facility or COGCC 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.

One groundwater sample was collected from the excavation (GW01). This sample was analyzed for Table 915-1 constituents of concern. All organic constituents were below lab detection limits. Total dissolved solid and chloride results fell within Table 915-1 allowable limits; however, sulfate exceeded Table 915-1 allowable limits. Additional groundwater samples will be collected during soil boring efforts.

## 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 Excavation update

### 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: \_\_\_\_\_

## 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 site will be reclaimed in accordance with COGCC 1000 Series rules and regulations after remediation investigation efforts are completed.

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. 06/08/2021

Actual Spill or Release date, or date of discovery. 06/08/2021

### SITE INVESTIGATION DATES

Date of Initial Actions described in Site Investigation Plan (start date). 06/14/2021

Proposed site investigation commencement. 06/22/2021

Proposed completion of site investigation.

### REMEDIAL ACTION DATES

Proposed start date of Remediation. 06/14/2021

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 open a Remediation Project Number for Spill/Release Point ID 480166, to update the COGCC on investigation efforts to date, and to propose a reduced analyte list for future soil samples. Please find site investigation details attached.

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

Signed: Schuyler Hamilton

Title: EHS Field Technician

Submit Date: 07/20/2021

Email: Schuyler.Hamilton@CrestonePR.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: CHRIS CANFIELD

Date: 07/23/2021

Remediation Project Number: 19222

### 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

402738101	FORM 27-INITIAL-SUBMITTED
402754531	REMEDATION PROGRESS REPORT

Total Attach: 2 Files

### General Comments

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

Total: 0 comment(s)