

State of Colorado Oil and Gas Conservation Commission

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Report taken by:

CHRIS CANFIELD

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: 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
No	GROUNDWATER	No impacts	Laboratory analysis
Yes	SOILS	6' x 38' x 35' bgs	Laboratory analysis

INITIAL ACTION SUMMARY

Description of initial action or emergency response measures take 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. The North and Eastern extents of the Excavation were sloped more extensively to allow for excavation equipment to enter and exit the excavation safely. Once excavation became unsafe to continue to pursue, the excavation was backfilled. Soil borings advanced June 25 were used to estimate the horizontal extent of soil impacts to direct excavation efforts and were used to collect background data. Soil borings advanced July 21 were used to characterize the base and sidewalls of the Western portion of the excavation which could not be safely reached to collect samples while the excavation was open.

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 46
Number of soil samples exceeding 915-1 1
Was the areal and vertical extent of soil contamination delineated? Yes
Approximate areal extent (square feet) 2280

NA / ND

-- Highest concentration of TPH (mg/kg) 680
-- Highest concentration of SAR 2.92
BTEX > 915-1 Yes
Vertical Extent > 915-1 (in feet) 20

Groundwater

Number of groundwater samples collected 7
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

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) _____

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.

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 inorganics constituents of concern. Laboratory results for soil samples BKG01@25 and BH01@22 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?

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.

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.

REMEDICATION 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.

Proof of soil clearance could not be collected from the open excavation due to safety concerns associated with soil type, saturated conditions, and reach limits of excavation equipment. The vertical and horizontal extents of impacts were characterized by soil borings on July 21, 2021 once the area was backfilled. Results from all site investigation are attached. Impacted and potentially impacted soils were not stockpiled on site; therefore, no stockpile footprint samples were collected.

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 open excavation (GW01), and one groundwater sample (BH06) was collected from a boring advanced within the former excavation footprint. Both samples were analyzed for Table 915-1 constituents of concern and were within allowable limits for all constituents of concern with the exception of GW01 exceeding allowable limits for sulfate ions. Because GW01 was collected from an open excavation, it is believed the sulfate exceedance which was not replicated in BH06 is attributed to stormwater runoff. No additional groundwater sampling 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 Closure Request

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? Yes _____

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? Yes _____

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.

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. 09/15/2021

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. 07/21/2021

REMEDIAL ACTION DATES

Proposed start date of Remediation. 06/14/2021

Proposed date of completion of Remediation. 07/14/2021

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 request closure of Remediation Project Number 19222 associated with Spill/Release Point ID 480166. Please find site investigation information including site map, laboratory results summary tables, and lab reports 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: 08/24/2021

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: 08/26/2021

Remediation Project Number: 19222

Condition of Approval**COA Type****Description**

	Based on the information presented, it appears that no further action is necessary at this time and the COGCC approves the closure request. However, should future conditions at the site indicate contaminant concentrations in soils exceeding COGCC standards or if groundwater is found to be impacted, then further investigation and/or remediation activities may be required.
	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.
2 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**

402779257	FORM 27-SUPPLEMENTAL-SUBMITTED
402790462	REMEDIATION PROGRESS REPORT

Total Attach: 2 Files

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

		Stamp Upon Approval
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Total: 0 comment(s)