

State of Colorado
Oil and Gas Conservation Commission

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Report taken by:
PETER GINTAUTAS

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.

Refer to Rules 340, 905, 906, 907, 908, 909, and 910

OPERATOR INFORMATION

Name of Operator: <u>CRESTONE PEAK RESOURCES OPERATING LLC</u>	Operator No: <u>10633</u>	Phone Numbers
Address: <u>1801 CALIFORNIA STREET #2500</u>		Phone: <u>(303) 774-3985</u>
City: <u>DENVER</u> State: <u>CO</u> Zip: <u>80202</u>		Mobile: <u>(720) 236-5525</u>
Contact Person: <u>David Tewkesbury</u>	Email: <u>David.Tewkesbury@CrestonePR.com</u>	

PROJECT, PURPOSE & SITE INFORMATION

PROJECT INFORMATION

Remediation Project #: 17330 Initial Form 27 Document #: 402635948

PURPOSE INFORMATION

- | | |
|--|--|
| <input type="checkbox"/> 901.e. Sensitive Area Determination | <input type="checkbox"/> 909.c.(5), Rule 910.b.(4): Remediation of impacted ground water |
| <input type="checkbox"/> 909.c.(1), Rule 905: Pit or PW vessel closure | <input type="checkbox"/> Rule 909.e.(2)A.: Notice completion of remediation in accordance with Rule 909.b. |
| <input checked="" type="checkbox"/> 909.c.(2), Rule 906: Spill/Release Remediation | <input type="checkbox"/> Rule 909.e.(2)B.: Closure of remediation project |
| <input type="checkbox"/> 909.c.(3), Rule 907.e.: Land treatment of oily waste | <input type="checkbox"/> Rule 906.c.: Director request |
| <input type="checkbox"/> 909.c.(4), Rule 908.g.: Centralized E&P Waste Management Facility closure | <input type="checkbox"/> Other _____ |

SITE INFORMATION

Y Multiple Facilities (in accordance with Rule 909.c.)

Facility Type: <u>LOCATION</u>	Facility ID: <u>336477</u>	API #: _____	County Name: <u>WELD</u>
Facility Name: <u>DIER-62N67W 8NWSW</u>	Latitude: <u>40.149717</u>	Longitude: <u>-104.921124</u>	
	** correct Lat/Long if needed: Latitude: <u>40.149532</u>	Longitude: <u>-104.920377</u>	
QtrQtr: <u>SWSW</u> Sec: <u>8</u> Twp: <u>2N</u> Range: <u>67W</u> Meridian: <u>6</u>	Sensitive Area? <u>Yes</u>		
Facility Type: <u>SPILL OR RELEASE</u>	Facility ID: <u>479631</u>	API #: _____	County Name: _____
Facility Name: _____	Latitude: _____	Longitude: _____	
	** correct Lat/Long if needed: Latitude: <u>40.149532</u>	Longitude: <u>-104.920377</u>	
QtrQtr: <u>SWSW</u> Sec: <u>8</u> Twp: <u>2N</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 Idle field
 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? Yes

Other Potential Receptors within 1/4 mile

Residential areas and occupied structures

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	To be determined	Investigation pending

INITIAL ACTION SUMMARY

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

This form has been prepared to request approval to remove the partially buried produced water vessel associated with this location in order to conduct remediation investigation related to Spill/Release Point ID 479631. On March 21, 2021, 13 barrels of produced water were released from the produced water vessel inside unlined secondary containment. To characterize the release and to determine the extent of potential impacts, the produced water vessel will be removed and soil samples will be collected. Crestone proposes to collect at least five soil samples: one sample from each sidewall and a base sample. Soil samples will be field-screened using a photoionization detector (PID). The soil sample which displays the highest degree of impacts as determined by field-screening, visual observations of staining, and hydrocarbon odor will be submitted for the full Table 915-1 analyte list minus Soil Suitability for Reclamation constituents. Subsequent soil samples will be analyzed for any constituents of concern which exceed Table 915-1 allowable limits in the most impacted sample and that cannot be cleared by background levels. If the most impacted sample does not exceed for any constituents of concern, the subsequent samples will be analyzed for TPH (DRO, GRO, and ORO) and BTEX. The facility is not being decommissioned or scheduled for reclamation at this time; therefore, samples will not be analyzed for Table 915-1 inorganic constituents to determine soil suitability for reclamation (pH, EC, SAR, and boron) at this time. Background samples may be collected during site investigation to characterize background levels of inorganic constituents in native soils.

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):

Crestone proposes to delineate identified pH impacts using a hydro vacuum truck to advance approximately three potholes at the site. One pothole will be advanced in the location of SSB01@6 to vertically delineate soil pH impacts. Two potholes will be advanced south of SSS01@4.5 to horizontally delineate pH impacts. Additional soil borings may be completed if field observations indicate additional delineation is needed. See the attached map for proposed sample locations.

Proposed Groundwater Sampling

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

If groundwater is encountered during potholing activities, or if soil pH impacts are suspected to threaten groundwater quality, a groundwater sample will be collected and analyzed for pH. One or more background groundwater samples may be collected as part of site investigation.

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 10
Number of soil samples exceeding 910-1 2
Was the areal and vertical extent of soil contamination delineated? No
Approximate areal extent (square feet) 50

NA / ND

ND Highest concentration of TPH (mg/kg) _____
-- Highest concentration of SAR 0.334
BTEX > 910-1 No
Vertical Extent > 910-1 (in feet) 6

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 910-1 _____

_____ Highest concentration of Benzene (µg/l) _____
_____ Highest concentration of Toluene (µg/l) _____
_____ Highest concentration of Ethylbenzene (µg/l) _____
_____ Highest concentration of Xylene (µg/l) _____
_____ Highest concentration of Methane (mg/l) _____

Surface Water

0 Number of surface water samples collected
_____ Number of surface water samples exceeding 910-1
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?

Five background soil samples were collected from native undisturbed soil near the site to characterize background levels of arsenic, selenium, and pH. Laboratory results of background samples indicate arsenic concentrations ranging from 1.02 milligrams per kilogram (mg/kg) to 2.57 mg/kg, selenium concentrations ranging from below the laboratory detection limit to 0.435 mg/kg, and pH values ranging from 6.53 to 7.38. A map depicting background sample locations, laboratory reports, and a laboratory results summary table are attached.

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?

pH impacts will be delineated vertically and horizontally with borings.

REMEDIAL ACTION PLAN

Does this Supplemental Form 27A include changes to a previously approved Remedial Action Plan? Yes _____

SOURCE REMOVAL SUMMARY

Describe how source is to be removed.

Following vertical and horizontal delineation of pH impacts, additional remediation activities will be proposed in a Subsequent eForm 27. Prior to sampling, approximately 32 cubic yards of soil were removed via vacuum truck. No organic impacts to soil were identified during remedial investigation. pH impacts will be delineated vertically and horizontally but will be left in place and managed with reclamation. A reclamation plan will be proposed in a Supplemental Form 27.

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.

In response to the release, Crestone conducted initial excavation activities to identify and expose the point of release and to remove potentially impacted soil from the release area. The water line elbow adjacent to the produced water vessel was identified as the source of the release. For this reason, the produced water vessel remained in place. The remedial excavation was advanced to 6 feet below ground surface (bgs). On 4/5/2021, soil samples were collected from the base and sidewalls of the excavation. No staining or odor were identified in the excavation. Soil samples were field screened and the sample displaying the highest potential for impacts based on PID results (SSS01@4.5) was submitted for analysis of all COGCC Table 915-1 soil constituents of concern. The remaining four samples collected from the excavation were submitted for TPH, BTEX, and pH analysis. Laboratory results of initial excavation samples indicate that analytes are complaint with COGCC Table 915-1 or below background concentrations observed at the location with the exception of pH. Soil samples collected from the base (SSB01@6) and south sidewall (SSS01@4.5) of the excavation exceed the COGCC Table 915-1 allowable level for pH with values of 9.2 and 8.52, respectively.

Soil Remediation Summary

In Situ

- _____ Bioremediation (or enhanced bioremediation)
- _____ Chemical oxidation
- _____ Air sparge / Soil vapor extraction
- _____ Natural Attenuation
- _____ Other _____

Ex Situ

- _____ Excavate and offsite disposal
- _____ If Yes: Estimated Volume (Cubic Yards) _____
- _____ 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.

REMEDATION PROGRESS UPDATE

PERIODIC REPORTING

Frequency: Quarterly Semi-Annually Annually Other _____

Report Type: Groundwater Monitoring Land Treatment Progress Report O&M Report

Other _____

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: _____

REMEDATION COMPLETION REPORT

REMEDATION COMPLETION SUMMARY

Is this a Final Closure Request for this Remediation Project? No _____

Do all soils meet Table 910-1 standards? _____

Does the previous reply indicate consideration of background concentrations? _____

Are the only residual soil impacts pH, SAR, or EC at depths greater than 3 feet below ground surface? _____

Does Groundwater meet Table 910-1 standards? _____

Is additional groundwater monitoring to be conducted? _____

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.

This facility remains in production; reclamation is not scheduled at this time. When the facility is decommissioned at a later date, reclamation activities will be completed in accordance with 1000 Series Rules.

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 approve the seed mix? _____

If NO, does the seed mix comply with local soil conservation district recommendations? _____

IMPLEMENTATION SCHEDULE

PRIOR DATES

Date of Surface Owner notification/consultation, if required. 03/22/2021

Actual Spill or Release date, if known. 03/21/2021

SITE INVESTIGATION DATES

Date of Initial Actions described in Site Investigation Plan (start date). 03/24/2021

Date of commencement of Site Investigation. 04/05/2021

Date of completion of Site Investigation. _____

REMEDIAL ACTION DATES

Date of commencement of Remediation. 04/02/2021

Date of completion of Remediation. 04/05/2021

SITE RECLAMATION DATES

Date of commencement of Reclamation. _____

Date of completion of Reclamation. _____

OPERATOR COMMENT

This Form 27 (Site Investigation and Remediation Workplan) is being submitted to document remediation investigation results completed to date and to propose additional site investigation.
The results of the proposed investigation will be presented in a Supplemental eForm 27.

Previous site investigation took place on 4/5/2021. The additional actions proposed in this form are planned for the week of 5/3/2021. The exact sampling date will be determined based on weather, site conditions, stormwater and sediment tracking concerns, and contractor availability. If further actions are needed, they will be planned for the week of 5/17/2021.

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

Signed: ` David Tewkesbury _____

Title: Environmental Specialist _____

Submit Date: ` 04/29/2021 _____

Email: David.Tewkesbury@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: PETER GINTAUTAS _____

Date: 05/03/2021 _____

Remediation Project Number: 17330 _____

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

<u>COA Type</u>	<u>Description</u>
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**

402665268	FORM 27-SUPPLEMENTAL-SUBMITTED
402666917	MAP
402666922	ANALYTICAL RESULTS
402667087	SOIL SAMPLE LOCATION MAP
402667098	SITE MAP
402673303	ANALYTICAL RESULTS

Total Attach: 6 Files

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

Environmental	attach lab reports and not just summary of results Provide an implementation schedule for work to be attempted in the next quarter as required by rule 913.d	04/28/2021
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Total: 1 comment(s)