

State of Colorado  
Oil and Gas Conservation Commission

1120 Lincoln Street, Suite 801, Denver, Colorado 80203  
Phone: (303) 894-2100 Fax: (303) 894-2109



Document Number:  
402139295  
Receive Date:  
08/12/2019

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>	<b>Phone Numbers</b>
Address: <u>1801 CALIFORNIA STREET #2500</u>	Phone: <u>(303) 7743985</u>	
City: <u>DENVER</u> State: <u>CO</u> Zip: <u>80202</u>	Mobile: <u>(720) 2365525</u>	
Contact Person: <u>David Tewkesbury</u>	Email: <u>David.Tewkesbury@CrestonePR.com</u>	

PROJECT, PURPOSE & SITE INFORMATION

PROJECT INFORMATION

Remediation Project #: 13765 Initial Form 27 Document #: 402087748

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 checked="" 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 checked="" type="checkbox"/> Other <u>Facility decommissioning in support of final reclamation.</u> |

SITE INFORMATION

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

Facility Type: <u>LOCATION</u>	Facility ID: <u>330869</u>	API #: _____	County Name: <u>WELD</u>
Facility Name: <u>ECHEVERRIA-62N67W 2SWSW</u>	Latitude: <u>40.160987</u>	Longitude: <u>-104.865603</u>	
	** correct Lat/Long if needed: Latitude: <u>40.162418</u>	Longitude: <u>-104.863668</u>	
QtrQtr: <u>SWSW</u>	Sec: <u>2</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 SM Most Sensitive Adjacent Land Use Cropland  
 Is domestic water well within 1/4 mile? Yes 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

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 checked="" 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
No	GROUNDWATER	Defined by sample "Echeverria"	Laboratory analysis
Yes	SOILS	53' x 68' x 12'	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.

This form has been prepared to support removal of the partially-buried produced-water vessel associated with this location. In accordance with COGCC Rule 905.b, soil samples, and groundwater samples if present, will be collected during closure of the buried or partially-buried produced water vessels to assure compliance with COGCC Table 910-1 allowable limits. The initial investigation will be conducted using excavation equipment. Field screening of disturbed soils will be conducted during equipment removal and samples will be collected for laboratory analysis if any indications of impacts are identified. Identified impacts will be reported as required for each discovery, and a Form 19 will be submitted.

## 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 ):

If no suspected release is identified, one discrete grab soil sample will be collected from directly beneath the produced-water vessel upon removal and submitted for laboratory analysis of organic constituents (TPH and BTEX) and inorganics (SAR, EC and pH). If a release is discovered and confirmed through soil screening and/or laboratory analysis, and/or groundwater is encountered during removal activities, additional excavations may be conducted to further delineate horizontally and vertically. If the extent of impacts is reached and/or remaining impact analytical results are needed for future remediation activities, discrete soil samples will be collected from the sidewalls and base (if groundwater is not present) and analyzed for organic (TPH and BTEX) and inorganic (SAR, EC and pH) constituents.

### Proposed Groundwater Sampling

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

If groundwater is encountered during excavation activities, one sample will be collected and analyzed for BTEX.

### 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 21  
Number of soil samples exceeding 910-1 1  
Was the areal and vertical extent of soil contamination delineated? Yes  
Approximate areal extent (square feet) 3604

### NA / ND

--        Highest concentration of TPH (mg/kg) 1820  
ND        Highest concentration of SAR         
BTEX > 910-1 No  
Vertical Extent > 910-1 (in feet) 2

### Groundwater

Number of groundwater samples collected 1  
Was extent of groundwater contaminated delineated? Yes  
Depth to groundwater (below ground surface, in feet) 10'  
Number of groundwater monitoring wells installed 0  
Number of groundwater samples exceeding 910-1 0

--        Highest concentration of Benzene (µg/l) 3  
--        Highest concentration of Toluene (µg/l) 21  
--        Highest concentration of Ethylbenzene (µg/l) 3  
--        Highest concentration of Xylene (µg/l) 279  
NA        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?

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.

Once a release was discovered during the closure of the produced-water vessel, additional excavations were conducted, and impacted soil was treated using hydrogen peroxide treatment (also known as soil shredding). Additionally, 843 barrels of groundwater were removed and transported to a disposal facility. Transport and disposal records will be kept on file under usual and customary practice and are available upon request. Approximately 1300 cubic yards of soil were removed from the excavation and subsequently treated on site. Soil and water samples were collected and analyzed for organic (TPH and BTEX) and inorganic constituents (SAR, EC and pH) until the horizontal and vertical extents of the excavation were within COGCC Table 910-1 allowable limits.

## REMIEDIATION 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.

These source removal and remediation activities are linked a previously reported release (Spill/Release ID 9252).

## Soil Remediation Summary

In Situ

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

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

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

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

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

Ex Situ

No \_\_\_\_\_ Excavate and offsite disposal

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

Name of Licensed Disposal Facility or COGCC Facility ID # \_\_\_\_\_

Yes \_\_\_\_\_ Excavate and onsite remediation

No \_\_\_\_\_ Land Treatment

No \_\_\_\_\_ Bioremediation (or enhanced bioremediation)

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

Yes \_\_\_\_\_ Other \_\_\_\_\_ Soil treatment \_\_\_\_\_

## Groundwater Remediation Summary

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

Yes \_\_\_\_\_ 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.

Groundwater impacts on site are likely associated with a previously reported release (Spill/Release ID 9252) and will continue to be monitored on a quarterly basis until four consecutive quarters of clearance are reached.

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

## REMEDIATION COMPLETION REPORT

### REMEDIATION COMPLETION SUMMARY

Is this a Final Closure Request for this Remediation Project? Yes \_\_\_\_\_

Do all soils meet Table 910-1 standards? Yes \_\_\_\_\_

Does the previous reply indicate consideration of background concentrations? No \_\_\_\_\_

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? Yes \_\_\_\_\_

Is additional groundwater monitoring to be conducted? Yes \_\_\_\_\_

## 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? 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. \_\_\_\_\_

Actual Spill or Release date, if known. \_\_\_\_\_

### **SITE INVESTIGATION DATES**

Date of Initial Actions described in Site Investigation Plan (start date). 06/25/2019

Date of commencement of Site Investigation. 06/26/2019

Date of completion of Site Investigation. 07/26/2019

### **REMEDIAL ACTION DATES**

Date of commencement of Remediation. 07/08/2019

Date of completion of Remediation. 07/26/2019

### **SITE RECLAMATION DATES**

Date of commencement of Reclamation. \_\_\_\_\_

Date of completion of Reclamation. \_\_\_\_\_

**OPERATOR COMMENT**

This form has been prepared to document successful closure of the partially-buried produced-water vessel at this location. Please find attached a summary of the 2019 remediation activities and findings, including lab results. Quarterly groundwater remediation summaries associated with Spill/Release ID 9252 will be provided separately.

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

Signed: Maggie Graham \_\_\_\_\_

Title: Senior Project Manager \_\_\_\_\_

Submit Date: 08/12/2019 \_\_\_\_\_

Email: Maggie.Graham@apexcos.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: 08/13/2019 \_\_\_\_\_

Remediation Project Number: 13765 \_\_\_\_\_

**COA Type****Description**

	Based on review of the information submitted in project 9252 which is ongoing at this time at this site, it is concluded that the proposed investigation activities and proposed remedial actions in the approved site investigation and remediation plan will be adequate to remediate impacted groundwater at the site of the spill. However, should future conditions at the site indicate contaminant concentrations in soils exceeding COGCC standards or if ground water is found to be significantly impacted, further investigation and/or remediation activities may be required at the site.
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**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**

402139295	FORM 27-SUPPLEMENTAL-SUBMITTED
402141504	SITE INVESTIGATION REPORT
402141688	REMEDIATION PROGRESS REPORT

Total Attach: 3 Files

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

Environmental	trouble with attachment as doc 402141499	08/12/2019
Environmental	changed to spill 1814971 (doc #) and subsequent REM 9252 in submit comments and in remediation summary	08/12/2019

Total: 2 comment(s)