

State of Colorado
Oil and Gas Conservation Commission

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Document Number:

402897323

Receive Date:

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.

Report taken by:

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>	City: <u>DENVER</u> State: <u>CO</u> Zip: <u>80202</u>	Phone: <u>(303) 7744017</u>
Contact Person: <u>Schuyler Hamilton</u>	Email: <u>SHamilton@CiviResources.com</u>	Mobile: <u>(720) 9251820</u>

PROJECT, PURPOSE & SITE INFORMATION

PROJECT INFORMATION

Remediation Project #: 12501 Initial Form 27 Document #: 401933790

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>434314</u>	API #: _____	County Name: <u>WELD</u>
Facility Name: <u>Grant Hurt 14H-G268</u>	Latitude: <u>40.139280</u>	Longitude: <u>-104.966590</u>	
** correct Lat/Long if needed: Latitude: _____		Longitude: _____	
QtrQtr: <u>SWNE</u>	Sec: <u>14</u>	Twp: <u>2N</u>	Range: <u>68W</u> Meridian: <u>6</u> Sensitive Area? <u>Yes</u>

Facility Type: <u>SPILL OR RELEASE</u>	Facility ID: <u>454704</u>	API #: _____	County Name: <u>WELD</u>
Facility Name: <u>Grant Hurt 14H-G268</u>	Latitude: <u>40.139280</u>	Longitude: <u>-104.966590</u>	
** correct Lat/Long if needed: Latitude: _____		Longitude: _____	
QtrQtr: <u>SWNE</u>	Sec: <u>14</u>	Twp: <u>2n</u>	Range: <u>68w</u> Meridian: <u>6</u> Sensitive Area? <u>Yes</u>

SITE CONDITIONS

General soil type - USCS Classifications SP

Most Sensitive Adjacent Land Use agriculture

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

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 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
Yes	GROUNDWATER	To be determined	Groundwater Monitoring Wells
Yes	SOILS	15' x 10' x 14' bgs	Excavation and Soil Borings

INITIAL ACTION SUMMARY

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

In March 2018, a hammer union was found leaking on a produced oil line. This leak resulted in a release of 75 barrels of condensate onto the pad surface. A hydrovac was immediately used to remove all visual soil impacts. On March 30, 2018, two 10-foot long, 4-inch diameter horizontal screens were installed into the excavated area which measured approximately 15 feet by 10 feet. The horizontal screens were covered with pea gravel and approximately 2,000 pounds of granular activated carbon. The excavated area was then backfilled. On January 2, 2019, five soil borings were advanced around the previous excavation boundary to confirm that excavation efforts removed all impacted soil. Soil samples were collected from each soil boring and submitted for analysis of TPH and BTEX. All soil samples were within Table 910-1 allowable limits. Four of the soil borings were completed as temporary groundwater monitoring wells which were sampled and analyzed for BTEX. Groundwater analytical data was within Table 910-1 allowable limits for all samples. The four monitoring wells were subsequently abandoned in March 2019. From June 17, 2020 to December 16, 2020 eight groundwater monitoring wells were installed in the spill area. Soil from each boring was field-screened using a photoionization detector (PID). Soil samples with the highest PID reading and soil samples from the terminus of each boring were collected and submitted for laboratory analysis of TPH and BTEX. All soil samples were within Table 910-1 allowable limits. Soil impacts have been delineated and were remediated in 2018 in accordance with Table 910-1 allowable limits. To date, groundwater impacts have not been delineated in accordance with Table 915-1 allowable limits. Crestone proposes to install additional monitoring wells to delineate groundwater impacts. See Remediation Summary for proposed additional site investigation details.

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):

Soil samples were previously collected to verify remediation of impacted soil. Soil samples may or may not be collected during additional monitoring well installation. If soil samples are collected, they will be submitted for analysis of Table 915-1 organic constituents based on knowledge that the released material was exclusively hydrocarbon fluids.

Proposed Groundwater Sampling

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

Based on dissolved phase petroleum hydrocarbon impacts beneath the site, groundwater monitoring will be conducted on a quarterly basis. Crestone requests that future groundwater samples be analyzed for a reduced suite of Table 915-1 organic constituents of concern based on knowledge that the released material was exclusively hydrocarbon fluids. Monitoring wells will be sampled on a quarterly basis until results are within COGCC Table 915-1 allowable limits for analyzed constituents of concern for four consecutive quarters.

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):

Additional groundwater monitoring wells will be installed to delineate groundwater impacts to the west. Proposed well locations were provided in the prior F27s (document number 402728329). Soil borings will be completed, and soil from these borings will be logged and field-screened.

SITE INVESTIGATION REPORT

SAMPLE SUMMARY

Soil

Number of soil samples collected 17

Number of soil samples exceeding 915-1 0

Was the areal and vertical extent of soil contamination delineated? Yes

Approximate areal extent (square feet) 200

NA / ND

-- Highest concentration of TPH (mg/kg) 390

NA Highest concentration of SAR

BTEX > 915-1 No

Vertical Extent > 915-1 (in feet) 0

Groundwater

Number of groundwater samples collected 51

Was extent of groundwater contaminated delineated? No

Depth to groundwater (below ground surface, in feet) 13'

Number of groundwater monitoring wells installed 8

Number of groundwater samples exceeding 915-1 13

-- Highest concentration of Benzene (µg/l) 490

-- Highest concentration of Toluene (µg/l) 32

-- Highest concentration of Ethylbenzene (µg/l) 5.3

-- Highest concentration of Xylene (µg/l) 9.2

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?

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?

Additional groundwater monitoring wells will be installed to delineate groundwater impacts. Proposed well locations were provided in the prior F27s (document number 402728329). Groundwater samples will continue to be collected from installed monitoring wells on a quarterly basis and submitted for analysis of Table 915-1 organic constituents of concern. Groundwater monitoring will continue until results are within Table 915-1 allowable limits for four consecutive quarters.

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.

A hydrovac was used to remove all visual impacts. Soil borings were installed and soil samples were collected to verify that all impacted soil was removed. Transport and disposal records will be kept on file under usual and customary practices 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.

See Initial Action Summary for a review of site investigation history. 4th quarter 2021 groundwater samples were collected October 7. TMW-5 and TMW-7 exceeded Table 915-1 allowable limits for benzene at 9.3 and 340 µg/L, respectively. See Figure 3 for a groundwater contour map and Table 2 for groundwater analytical results. As of 4th quarter 2021, groundwater impacts have not been delineated to the west. Approximately three additional groundwater monitoring wells will be installed to delineate the extent of impacts. Monitoring well installation was originally scheduled for July 2021. Due to safety concerns pertaining to hazardous atmospheric conditions at the top of the existing well casings and subcontractor availability, additional drilling has been tentatively rescheduled for January 2022.

Soil Remediation Summary

In Situ

Ex Situ

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

- _____ 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)
- Yes _____ Chemical oxidation
- _____ 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.

Based on dissolved phase petroleum hydrocarbon impacts beneath the site, groundwater monitoring will be conducted on a quarterly basis. Crestone requests that groundwater samples be analyzed for a reduced suite of Table 915-1 organic constituents of concern because the material released was exclusively hydrocarbon fluids. Monitoring wells will be sampled on a quarterly basis until results are within COGCC Table 915-1 allowable limits for analyzed constituents of concern for four consecutive quarters. Additional groundwater monitoring wells will be installed as needed to delineate groundwater impacts.

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 _____

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? 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? _____

Does the previous reply indicate consideration of background concentrations? _____

Does Groundwater meet Table 915-1 standards? _____

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 will be completed with regard to the landowner agreement and in accordance with COGCC 1000 series rules. This facility is still active and is not scheduled for reclamation at this time.

Is the described reclamation complete? _____

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. 03/29/2018

Actual Spill or Release date, or date of discovery. 03/28/2018

SITE INVESTIGATION DATES

Date of Initial Actions described in Site Investigation Plan (start date). 03/28/2018

Proposed site investigation commencement. 03/28/2018

Proposed completion of site investigation. _____

REMEDIAL ACTION DATES

Proposed start date of Remediation. 03/30/2018

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:

Due to safety concerns pertaining to hazardous atmospheric conditions at the top of the existing well casings and subcontractor availability, additional drilling has been tentatively rescheduled for January 2022 to allow for additional safety planning.

OPERATOR COMMENT

This form has been submitted to provide 4th quarter groundwater data to the COGCC and to reschedule proposed additional site investigation. Please find site investigation information including topographic map, site map, groundwater contour map, analytical data tables, and laboratory reports attached.

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

Signed: Chris Rice

Title: Environmental Technician

Submit Date:

Email: CRice@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:

Date:

Remediation Project Number: 12501

COA Type

Description

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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

402913951	MONITORING REPORT
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Total Attach: 1 Files

General Comments

User Group

Comment

Comment Date

		Stamp Upon Approval
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Total: 0 comment(s)