

State of Colorado
Energy & Carbon Management Commission1120 Lincoln Street, Suite 801, Denver, Colorado 80203
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Report taken by:

Laurel Anderson

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 ECMC 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
Address: 555 17TH STREET SUITE 3700		Phone: (303) 8293811
City: DENVER State: CO Zip: 80202		Mobile: (303) 8293811
Contact Person: Jacob Evans	Email: jevans@civiresources.com	

PROJECT, PURPOSE & SITE INFORMATION

PROJECT INFORMATION

Remediation Project #: 21576 Initial Form 27 Document #: 402927140

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: 331492	API #: _____	County Name: WELD
Facility Name: Ione 2N66W/8NWNE Battery	Latitude: 40.158620	Longitude: -104.799520	
** correct Lat/Long if needed: Latitude: 40.159264		Longitude: -104.799812	
QtrQtr: NWNE	Sec: 8	Twp: 2N	Range: 66W Meridian: 6 Sensitive Area? No

Facility Type: SPILL OR RELEASE	Facility ID: 481376	API #: _____	County Name: WELD
Facility Name: Ione 2N66W/8NWNE	Latitude: 40.159264	Longitude: -104.799812	
** correct Lat/Long if needed: Latitude: _____		Longitude: _____	
QtrQtr: NWNE	Sec: 8	Twp: 2N	Range: 66W Meridian: 6 Sensitive Area? Yes

Facility Type: SPILL OR RELEASE	Facility ID: 481393	API #:	County Name: WELD
Facility Name: lone 8HZ	Latitude: 40.159143	Longitude: -104.799232	
** correct Lat/Long if needed: Latitude:		Longitude:	
QtrQtr: NWNE	Sec: 8	Twp: 2N	Range: 66W
Meridian: 6	Sensitive Area?		Yes

SITE CONDITIONS

General soil type - USCS Classifications SP

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? No

Other Potential Receptors within 1/4 mile

None observed.

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	NA	Laboratory Analytical
Yes	SOILS	140' X 40' X 10'-17' bgs	Laboratory Analytical

INITIAL ACTION SUMMARY

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

Spill#481393: On the morning of January 11, 2022, during hot oiling operations on the oil dump line, the line failed resulting in a release in the separator housing within unlined secondary containment. The release caused a fire and in response, incident command was set up and the separator was isolated from the shut-in facility. The fire was naturally extinguished. Further investigation will be conducted to verify the integrity of the line. The impacted soil will be removed and hauled to a COGCC approved disposal facility. A waste characterization sample from the source area will be collected and submitted for analysis of COGCC Table 915-1 constituents. If impacts are confirmed beneath the separator housing, confirmation soil samples will be collected and submitted for the Table 915-1 constituents present in the waste characterization sample.

Spill#481376: During operations, a dumpline became plugged with paraffin and began to transfer all fluids to the pit. Automation on the produced water vessel failed and caused an overflow of the vessel. The site has been shut-in until repairs and cleanup can occur. The release was contained to the pad surface. The impacted soil will be removed and hauled to a COGCC approved disposal facility. Confirmation soil samples will be collected and submitted for laboratory analysis of BTEX, 1,2,4 and 1,3,5 Trimethylbenzene, naphthalene, TPH (C6-C36), pH, EC, SAR, and boron. Additionally, a waste characterization sample from the source area will be collected and submitted for analysis of COGCC Table 915-1 constituents. Background samples for inorganics and metals will be collected and submitted for laboratory analysis as needed.

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):

Thirty-six (36) grab soil samples were collected for analysis of Table 915-1 metals, organics, TPH C6-36, pH, SAR, EC, and boron. Additionally, four (4) soil bores were sampled for BTEX, TPH C6-36, 1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene, and naphthalene.

Proposed Groundwater Sampling

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

Monitoring wells will be installed to determine if a pathway to groundwater from residual impacts left in situ occurred.

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 40

Number of soil samples exceeding 915-1 40

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

Approximate areal extent (square feet) 3800

NA / ND

-- Highest concentration of TPH (mg/kg) 320

-- Highest concentration of SAR 13.5

BTEX > 915-1 Yes

Vertical Extent > 915-1 (in feet) 17

Groundwater

Number of groundwater samples collected 13

Was extent of groundwater contaminated delineated? Yes

Depth to groundwater (below ground surface, in feet) 5

Number of groundwater monitoring wells installed 13

Number of groundwater samples exceeding 915-1 0

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

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?

Two background samples were collected for analysis of Table 915-1 metals, EC, SAR, pH, and boron.

☐ 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? Yes

SOURCE REMOVAL SUMMARY

Describe how source is to be removed.

The source was removed through excavation of impacted soil above ECMC Table 915-1 standards. Residual pH, boron, barium, cadmium, lead, nickel, selenium, 1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene, benzene, toluene, naphthalene, and 1&2 methylnaphthalene remain in situ above ECMC Table 915-1 standards. Table 915-1 groundwater soil screening protection levels will be utilized.

REMEDATION 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.

Fourteen monitoring wells were installed to determine if impacted groundwater is present at the site. Groundwater will be sampled on a quarterly basis and the data will be evaluated to determine background concentrations of dissolved metals and inorganic parameters. All groundwater is below ECMC Table 915-1 organic parameters. An additional site assessment will be conducted to collect confirmation soil samples on the floor and sidewalls of the previous excavation. All impacts above ECMC standards will be vertically and laterally defined. Additional background samples will be collected off the oil and gas location from homogenous soil horizons and/or corresponding excavation/site assessment soil sample depths. The estimated timeframe to achieve a no further action will be December 31, 2025.

Soil Remediation Summary

☐ In Situ

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

☒ Ex Situ

Yes _____ Excavate and offsite disposal
_____ If Yes: Estimated Volume (Cubic Yards) _____ 2190
Name of Licensed Disposal Facility or ECMC Facility ID # _____
No _____ Excavate and onsite remediation
_____ Land Treatment
_____ Bioremediation (or enhanced bioremediation)
_____ Chemical oxidation
_____ Other _____

Groundwater Remediation Summary

No _____ Bioremediation (or enhanced bioremediation)
No _____ Chemical oxidation
No _____ Air sparge / Soil vapor extraction
No _____ Natural Attenuation
No _____ 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.

Fourteen groundwater monitoring wells were installed and will be sampled on a quarterly basis for analysis of BTEX, naphthalene, 1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene, 1&2-methylnaphthalene, TDS, sulfates, chlorides, dissolved barium, cadmium, and selenium. This groundwater sampling and analysis plan may be amended based on background soil concentrations for metals.

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

Adequacy of Operator's General Liability Insurance and Financial Assurance

Describe the adequacy of the Operator's general liability insurance and Financial Assurance to fully address the anticipated costs of Remediation, including the estimated remaining cost for this project (below).

If this information has been provided on a Form 27 within the last 12 months, provide the Document Number of that form.

The General Liability coverage within the Civitas Resources insurance program includes coverage for bodily injury, property damage, and pollution clean-up costs arising from qualifying pollution events of a sudden and accidental nature subject to a \$1,000,000 per occurrence limit and \$2,000,000 aggregate limit. The Civitas Resources insurance program includes Excess Liability coverage of \$110,000,000 per occurrence and in the aggregate which sits over the sudden and accidental pollution within the General Liability coverage. It is the opinion of Civitas Resources that this total tower of limit is adequate to address the costs of remediation associated with any qualifying pollution event.

Operator anticipates the remaining cost for this project to be: \$ 100000

WASTE DISPOSAL INFORMATION

Was E&P waste generated as part of this remediation? Yes

Describe beneficial use, if any, of E&P Waste derived from this remediation project:

No beneficial use

Volume of E&P Waste (solid) in cubic yards 2190

E&P waste (solid) description E&P solid waste derived from excavation activities

ECMC Disposal Facility ID #, if applicable:

Non-ECMC Disposal Facility: Buffalo Ridge

Volume of E&P Waste (liquid) in barrels 0

E&P waste (liquid) description

ECMC Disposal Facility ID #, if applicable:

Non-ECMC 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?

No

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 ECMC 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 in accordance with ECMC 1000 series rules.

Is the described reclamation complete? Yes _____

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. 01/07/2022

Actual Spill or Release date, or date of discovery. 01/07/2022

SITE INVESTIGATION DATES

Date of Initial Actions described in Site Investigation Plan (start date). 02/18/2022

Proposed site investigation commencement. 02/22/2022

Proposed completion of site investigation. 02/22/2022

REMEDIAL ACTION DATES

Proposed start date of Remediation. 02/22/2022

Proposed date of completion of Remediation. 12/31/2025

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

Per ECMC COA on form 27 document #403669536, the attached report has all data and figures to date for groundwater and soil sampling. Upon review of all the data, gaps in the excavation sampling occurred from a previous consultant. Additional site assessment is required to confirm impacts have been removed and laterally and vertically define impacts above ECMC standards.

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

Signed: Jacob Evans

Title: Environmental Advisor

Submit Date: 06/10/2024

Email: jevans@civiresources.com

Based on the information provided herein, this Application for Site Investigation and Remediation Workplan complies with ECMC Rules and applicable orders and is hereby approved.

ECMC Approved: Laurel Anderson

Date: 09/19/2024

Remediation Project Number: 21576

COA Type**Description**

0 COA	

ATTACHMENT 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**

403819234	FORM 27-SUPPLEMENTAL-SUBMITTED
403819299	MONITORING REPORT
403819315	SOIL SAMPLE LOCATION MAP

Total Attach: 3 Files

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

		Stamp Upon Approval
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Total: 0 comment(s)