

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.

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

OPERATOR INFORMATION

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

PROJECT, PURPOSE & SITE INFORMATION

PROJECT INFORMATION

Remediation Project #: 16268

Initial Form 27 Document #: 402569197

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 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 Facility decommissioning in support of final reclamation. |

SITE INFORMATION

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

Facility Type: WELL	Facility ID:	API #: 014-20650	County Name: BROOMFIELD
Facility Name: KATS 41-34	Latitude: 40.010372	Longitude: -104.986018	
** correct Lat/Long if needed: Latitude:		Longitude:	
QtrQtr: SWNE	Sec: 34	Twp: 1N	Range: 68W Meridian: 6 Sensitive Area? Yes
Facility Type: WELL	Facility ID:	API #: 014-20651	County Name: BROOMFIELD
Facility Name: KATS 42-34	Latitude: 40.010323	Longitude: -104.986072	
** correct Lat/Long if needed: Latitude:		Longitude:	
QtrQtr: SWNE	Sec: 34	Twp: 1N	Range: 68W Meridian: 6 Sensitive Area? Yes
Facility Type: WELL	Facility ID:	API #: 014-20653	County Name: BROOMFIELD
Facility Name: KATS 31-34	Latitude: 40.010370	Longitude: -104.986068	
** correct Lat/Long if needed: Latitude:		Longitude:	
QtrQtr: SWNE	Sec: 34	Twp: 1N	Range: 68W Meridian: 6 Sensitive Area? Yes

Facility Type: WELL		Facility ID: _____		API #: 014-20654		County Name: BROOMFIELD	
Facility Name: KATS 6-4-34		Latitude: 40.010327		Longitude: -104.986132			
		** correct Lat/Long if needed: Latitude: _____		Longitude: _____			
QtrQtr: SWNE	Sec: 34	Twp: 1N	Range: 68W	Meridian: 6	Sensitive Area? Yes		

Facility Type: WELL		Facility ID: _____		API #: 014-20655		County Name: BROOMFIELD	
Facility Name: KATS 8-2-34		Latitude: 40.010326		Longitude: -104.986024			
		** correct Lat/Long if needed: Latitude: _____		Longitude: _____			
QtrQtr: SWNE	Sec: 34	Twp: 1N	Range: 68W	Meridian: 6	Sensitive Area? Yes		

Facility Type: WELL		Facility ID: _____		API #: 014-18577		County Name: BROOMFIELD	
Facility Name: KATS 'B' UNIT 2		Latitude: 40.010366		Longitude: -104.986103			
		** correct Lat/Long if needed: Latitude: _____		Longitude: _____			
QtrQtr: SWNE	Sec: 34	Twp: 1N	Range: 68W	Meridian: 6	Sensitive Area? Yes		

Facility Type: LOCATION		Facility ID: 335701		API #: _____		County Name: BROOMFIELD	
Facility Name: KATS-61N68W 34SWNE		Latitude: 40.010330		Longitude: -104.986050			
		** correct Lat/Long if needed: Latitude: 40.010497		Longitude: -104.985703			
QtrQtr: SWNE	Sec: 34	Twp: 1N	Range: 68W	Meridian: 6	Sensitive Area? Yes		

SITE CONDITIONS

General soil type - USCS Classifications SC Most Sensitive Adjacent Land Use Idle Field.

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

Occupied structures.

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	SOILS	No impacts	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 decommissioning of the production equipment associated with this location. In accordance with COGCC Rule 911 and Rule 915 soil samples, and groundwater samples if present, will be collected during closure of each qualifying equipment type. Identified impacts will be reported as required for each discovery, and a Form 19 will be submitted, and remedial investigation will be conducted with excavation equipment.

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):

In accordance with COGCC Rule 911 and Rule 915 soil samples, and groundwater samples if present, will be collected during closure of each qualifying equipment type and field screened. If suspected impacts are identified, they will be submitted for laboratory analysis of Table 915-1 constituents. If no suspected impacts are identified, field-screening results may be reported in lieu of laboratory analysis. If a release is confirmed through laboratory analysis, additional excavations may be conducted to delineate horizontal and vertical extents. Discrete soil samples will be collected and analyzed for Table 915-1 constituents pursuant to Rule 915.e. Overburden stockpiles, if present, will be sampled prior to use as backfill with a frequency of 1 composite sample per 500 cubic yards of material and submitted for analysis of VOCs.

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 Table 915-1 groundwater constituents.

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 0

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

Approximate areal extent (square feet) 0

NA / ND

ND Highest concentration of TPH (mg/kg)

-- Highest concentration of SAR 6.4

BTEX > 910-1 No

Vertical Extent > 910-1 (in feet) 0

Groundwater

Number of groundwater samples collected 0

Was extent of groundwater contaminated delineated? Yes

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?

☐ 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.

If a suspected release is identified and confirmed through soil screening and/or laboratory analysis during decommissioning of this facility, soils may be removed and transported to a licensed disposal facility. Transport and disposal records will be kept on file under usual and customary practice and are available upon request. If all source material cannot be removed during excavation activities, additional methodologies will be proposed in subsequent Form 27 supplementals.

REMEDIATION 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 accordance with COGCC Rule 911 and Rule 915, representative soil samples were collected beneath the separators, above ground surface tanks, and produced water vessel (PWV). Because the PWV samples were collected prior to January 15, 2021, these samples were submitted for Table 910-1 analysis. Samples collected after January 15, 2021, were submitted for Table 915-1 analysis. Equipment such as the wellhead, ECDs, meter shed, and flowlines were field screened using a photoionization detector (PID). Samples FL09 - FL14 were collected near the wellhead and associated flowline to investigate both the wellhead and flowline. There was no evidence of hydrocarbon impacts detected in any of the samples. The background, AST, and separator samples exceeded Table 915-1 allowable limits for arsenic ranging from 4.35 to 7.03 mg/kg. These concentrations are not irregular for arsenic concentrations in this land use type with no reason to believe that arsenic containing materials may have been used at this site (Colorado Department of Public Health and Environment Arsenic Concentrations in Soil, July 2014 – see attached). Therefore, arsenic has not been considered a contaminant of concern at this Site. AST02@6" exceeded Table 915-1 allowable limits for SAR. This sample was collected very shallow, on a pad which will be scraped during reclamation, therefore will not have impacts on reclamation efforts. The barium, lead and selenium detections in the soil are all below 1.25x the background concentrations (BKG01@6"). These samples were collected at 6" bgs in densely compacted padfill underlain by native clay sands. Because there is no evidence of hydrocarbon impacts, those samples which exceed the protection of groundwater soil screening level concentrations risk based (R) or MCL based (M), are naturally occurring concentrations, and are not a threat to groundwater. Groundwater elevations in a nearby groundwater well were noted at 8-feet below ground surface.

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? 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? No _____

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? _____

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. 01/14/2021

Actual Spill or Release date, if known. _____

SITE INVESTIGATION DATES

Date of Initial Actions described in Site Investigation Plan (start date). 01/07/2021

Date of commencement of Site Investigation. 01/14/2021

Date of completion of Site Investigation. 01/22/2021

REMEDIAL ACTION DATES

Date of commencement of Remediation. _____

Date of completion of Remediation. _____

SITE RECLAMATION DATES

Date of commencement of Reclamation. _____

Date of completion of Reclamation. _____

OPERATOR COMMENT

This form has been prepared to document successful removal of the production equipment associated with this location. Please find the attached Site Diagram, Topographic Map, Lab Results Summary Table, a copy of the laboratory results, photolog, and a reference related to arsenic concentrations in soil (Colorado Department of Public Health and Environment Arsenic Concentrations in Soil, July 2014).

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: ` 03/19/2021 _____

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: CHRIS CANFIELD _____

Date: 04/02/2021 _____

Remediation Project Number: 16268 _____

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.

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**

402622934	FORM 27-SUPPLEMENTAL-SUBMITTED
402623527	OTHER
402633983	OTHER

Total Attach: 3 Files

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

		Stamp Upon Approval
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Total: 0 comment(s)