

State of Colorado
Oil and Gas Conservation Commission

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KRIS NEIDEL

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.

OPERATOR INFORMATION

Name of Operator: <u>CM PRODUCTION LLC</u>	Operator No: <u>10352</u>	Phone Numbers Phone: <u>(970) 946-3761</u> Mobile: <u>()</u>
Address: <u>390 UNION BLVD SUITE 620</u>		
City: <u>LAKEWOOD</u>	State: <u>CO</u>	Zip: <u>80228</u>
Contact Person: <u>Jacob Harter</u>	Email: <u>jharter@cottonwoodconsulting.com</u>	

PROJECT, PURPOSE & SITE INFORMATION

PROJECT INFORMATION

Remediation Project #: 17912 Initial Form 27 Document #: 402673506

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: Rule 911: Closure of Oil and Gas Facilities

SITE INFORMATION

Yes Multiple Facilities

Facility Type: <u>LOCATION</u>	Facility ID: <u>324634</u>	API #: _____	County Name: <u>JACKSON</u>
Facility Name: <u>MARGARET SPAULDING-69N81W 28SWSE</u>		Latitude: <u>40.717432</u>	Longitude: <u>-106.499019</u>
		** correct Lat/Long if needed: Latitude: _____	Longitude: _____
QtrQtr: <u>SWSE</u>	Sec: <u>28</u>	Twp: <u>9N</u>	Range: <u>81W</u> Meridian: <u>6</u> Sensitive Area? <u>Yes</u>
Facility Type: <u>TANK BATTERY</u>	Facility ID: <u>427281</u>	API #: _____	County Name: <u>JACKSON</u>
Facility Name: <u>M. SPAULDING CENTRALIZED TANK BATT 1</u>		Latitude: <u>40.718009</u>	Longitude: <u>-106.498498</u>
		** correct Lat/Long if needed: Latitude: _____	Longitude: _____
QtrQtr: <u>SWSE</u>	Sec: <u>28</u>	Twp: <u>9N</u>	Range: <u>81W</u> Meridian: <u>6</u> Sensitive Area? <u>Yes</u>

SITE CONDITIONS

General soil type - USCS Classifications SW

Most Sensitive Adjacent Land Use Grazing Land

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

Wolfer Ditch less than 50 feet to the east and Spring Gulch Ditch approximately 385 feet to the west. Groundwater ranges from 11 feet below ground surface (bgs) to 30 feet bgs.

SITE INVESTIGATION PLAN

TYPE OF WASTE:

- | | | |
|--|--|---|
| <input checked="" type="checkbox"/> E&P Waste | <input checked="" type="checkbox"/> Other E&P Waste | <input checked="" type="checkbox"/> Non-E&P Waste |
| <input checked="" type="checkbox"/> Produced Water | <input type="checkbox"/> Workover Fluids | Potential petroleum oils and lubes (POLs) |
| <input checked="" type="checkbox"/> Oil | <input checked="" 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	TBD	Field Screening and Analytical Results

INITIAL ACTION SUMMARY

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

The COGCC Orphan Well Program decommissioned the Margaret Spaulding Centralized Tank Battery facility during the summer of 2021. Soil samples were collected in accordance with the Initial Form 27 for the project and COGCC Rule 915.e(2)B. Twenty soil samples, including one project background sample, were collected from the site; ten were collected from flowline excavations, one was collected from the the flowline manifold excavation, six were collected from the former tank batteries, one was collected from under the former horizontal separator, one from the former surface discharge area, and one (background) was collected from nearby, non-impacted native soil. All samples were submitted for laboratory analysis of Table 915-1 constituents.

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):

All areas suspected of having potential impacts, including the wellhead, associated flowline(s) (if present), and production equipment (if present), were visually inspected and field screen with a PID. Using these observations and field screening results, soil samples were collected from areas most likely to be impacted.

Ten discrete soil samples were collected from the various flowline excavation, one discrete soil sample was collected from the flowline manifold excavation, six discrete soil samples were collected from the former tank batteries, one discrete soil sample was collected from under the former horizontal separator, and one discrete soil sample was collected from the former surface discharge area. All samples were submitted for laboratory analysis of Table 915-1 constituents. The attached project map provides the location of all samples.

Proposed Groundwater Sampling

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

No groundwater or pathways to groundwater were discovered during the plugging and decommissioning activities. As such, no groundwater samples were collected for this project.

Proposed Surface Water Sampling

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

No surface water was discovered in the vicinity of the wellsite during the plugging and decommissioning activities. As such, no surface water samples were collected for this project.

Additional Investigative Actions

Additional alternative investigative actions described in attached Site Investigation Plan (summary):

The footprint and locations of the tanks and tank battery and the foot print and locations of equipment Production Facility will be surveyed (GPS). Once all of the equipment has been removed, under a separate SOW a Phase II Subsurface Site Investigation will be proposed to delineate the horizontal and vertical extent of impact across the Location. Groundwater MWs will also be installed.

SITE INVESTIGATION REPORT

SAMPLE SUMMARY

Soil

NA / ND

Number of soil samples collected 19 -- Highest concentration of TPH (mg/kg) 32100
 Number of soil samples exceeding 915-1 11 -- Highest concentration of SAR 1.99
 Was the areal and vertical extent of soil contamination delineated? No BTEX > 915-1 No
 Approximate areal extent (square feet) 10000 Vertical Extent > 915-1 (in feet) 9

Groundwater

Number of groundwater samples collected 0 Highest concentration of Benzene (µg/l) _____
 Was extent of groundwater contaminated delineated? No Highest concentration of Toluene (µg/l) _____
 Depth to groundwater (below ground surface, in feet) _____ Highest concentration of Ethylbenzene (µg/l) _____
 Number of groundwater monitoring wells installed _____ Highest concentration of Xylene (µg/l) _____
 Number of groundwater samples exceeding 915-1 _____ 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?
 One representative background soil sample was collected for the project from nearby, non-impacted native soil. Laboratory results indicate the pH value was outside of the COGCC standard. Additionally, arsenic concentrations exceeded the COGCC standard.

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?
 SS03, collected at a depth of 7 feet below ground surface (bgs) from a flowline excavation, had TPH and Naphthalene values exceeding the COGCC Table 915 standards. SS04, collected at a depth of 5 feet bgs from a flowline excavation, had TPH and Naphthalene values exceeding the COGCC Table 915 standards. SS05, collected at a depth of 9 feet bgs from the flowline manifold excavation, had TPH and Naphthalene values exceeding the COGCC Table 915 standards. SS07, collected at a depth of 1-2 feet bgs from the former tank battery, had TPH values exceeding the COGCC Table 915 standards. SS09, collected at a depth of 0-0.33 feet bgs from the former tank battery, had TPH values exceeding the COGCC Table 915 standards. SS10, collected at a depth of 0-0.33 feet bgs from the former tank battery, had TPH values exceeding the COGCC Table 915 standards. SS11, collected at a depth of 0-0.33 feet bgs from the former tank battery, had TPH values exceeding the COGCC Table 915 standards. SS13, collected at a depth of 6.5 feet bgs from a flowline excavation, had TPH values exceeding the COGCC Table 915 standards. S16, collected at a depth of 0-0.33 feet bgs from a flowline excavation, had TPH values exceeding the COGCC Table 915 standards. SS17, collected at a depth of 0-0.33 feet bgs from a flowline excavation, had TPH values exceeding the COGCC Table 915 standards. SS19, collected at a depth of 0-0.25 feet bgs from under the former horizontal separator, had TPH values exceeding the COGCC Table 915 standards.
 Arsenic also exceeded the COGCC Table 915 standard in all samples, but was relatively consistent with background concentrations.

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.
 The facility was decommissioned during the summer of 2021. Soil samples were collected in accordance with the Initial Form 27 for the project. Based on Initial Form 27 soil sampling results, it appears additional remediation is needed in the vicinity of the former flowlines, tank battery, and horizontal separator. The area of impact is relatively large at this facility. Based on the results of the remediation work so far, it is difficult to estimate the volume of soil that need to be remediated at this site. A remediation plan should be prepared and approved prior to undertaking any remediation activities due to the scale of impacts at the site. Please refer to attached Results Table, Map, and Photographs.

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.

A remediation plan should be prepared and approved prior to undertaking any remediation activities due to the scale of impacts at the site.

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)
- _____ 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.

REMEDIATION PROGRESS UPDATE

PERIODIC REPORTING

Approved Reporting Schedule:

Quarterly Semi-Annually Annually Other Will be determined from the Phase II Subsurface Investigation results.

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? No _____

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? No _____

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 in accordance with COGCC 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 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. _____

Actual Spill or Release date, or date of discovery. _____

SITE INVESTIGATION DATES

Date of Initial Actions described in Site Investigation Plan (start date). 05/03/2021

Proposed site investigation commencement. 09/30/2021

Proposed completion of site investigation. 12/31/2021

REMEDIAL ACTION DATES

Proposed start date of Remediation. 05/01/2022

Proposed date of completion of Remediation. 09/30/2022

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

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

Signed: ` Jacob Harter _____

Title: Consultant _____

Submit Date: ` 12/29/2021 _____

Email: jharter@cottonwoodconsulting.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: KRIS NEIDEL _____

Date: 04/22/2022 _____

Remediation Project Number: 17912 _____

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

	Background Concentrations shall be established for: EC, SAR, pH and Metals.
	A plan shall be submitted via Form 27 that address exceedances at SS16 in Pit 5. (31,000TPH)
2 COAs	

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**

402905064	FORM 27-SUPPLEMENTAL-SUBMITTED
402905241	ANALYTICAL RESULTS
402905246	SOIL SAMPLE LOCATION MAP
402905248	PHOTO DOCUMENTATION
402905249	ANALYTICAL RESULTS
402905251	ANALYTICAL RESULTS

Total Attach: 6 Files

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

Environmental	Tank Battery exceedances: TPH, PAH's	04/22/2022
Environmental	This document states, ". A remediation plan should be prepared and approved prior to undertaking any remediation activities due to the scale of impacts at the site"	04/22/2022

Total: 2 comment(s)