

State of Colorado
Oil and Gas Conservation Commission

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Report taken by:
John Heil

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: TEP ROCKY MOUNTAIN LLC	Operator No: 96850	Phone Numbers Phone: (970) 623-4875 Mobile: (970) 263-2760
Address: PO BOX 370		
City: PARACHUTE	State: CO	Zip: 81635
Contact Person: Michael Gardner	Email: mgardner@terraep.com	

PROJECT, PURPOSE & SITE INFORMATION

PROJECT INFORMATION

Remediation Project #: 13721 Initial Form 27 Document #: 402067472

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

No Multiple Facilities

Facility Type: PIT	Facility ID: 374696	API #: _____	County Name: GARFIELD
Facility Name: JOLLY 16-23D	Latitude: 39.529489	Longitude: -107.563782	
** correct Lat/Long if needed: Latitude: _____		Longitude: _____	
QtrQtr: SWNW	Sec: 16	Twp: 6S	Range: 91W Meridian: 6 Sensitive Area? Yes

SITE CONDITIONS

General soil type - USCS Classifications OH

Most Sensitive Adjacent Land Use Pasture/farmland @ 2020ft to the east with an elevation difference of 754ft

Is domestic water well within 1/4 mile? No

Is surface water within 1/4 mile? No

Is groundwater less than 20 feet below ground surface? No

Other Potential Receptors within 1/4 mile

Garfield Creek lies approximately 3075ft to the east and an unnamed ephemeral drainage lies approximately 3700ft to the west.

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 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
UNDETERMINED	SOILS	TBD	field screening, confirmation sampling

INITIAL ACTION SUMMARY

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

At the location(s) of the pit which are the furthest downgradient, lowest in elevation and/or have the potential for pooling of liquid, field-screening will be performed and will utilize appropriate field equipment which may include, but is not limited to the following.
 -PetroFlag unit,
 -photoionization gas detector (PID),
 Confirmation sample(s), Rule 905.b.(4), will be collected and submitted for lab analysis and verification to confirm compliance with Rule 910 and Table 910-1, relative to the aforementioned field screen activity. Other areas of the pit walls and floor will be inspected for evidence of impact via field screening and visual observation. Grab samples will be collected, as appropriate, to demonstrate diligence and thoroughness of investigation activities performed as directed in Rule 905.b.(1). In addition, all field screening activities and results will be documented and compiled into a summary report, table and/or map to be provided with the Notice of Completion (NOC) Report. Grab sample(s) will be submitted for laboratory analysis to confirm field screening activities. Sub-liner sample analytes will include considerations identified by Rule 910 and all contaminants of concern for soils from Table 910-1.

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):

Five (5) grab samples will initially be collected from the pit subsoils along the side walls at a point positioned center at a depth of 3-4 feet below ground surface (bgs) from the crest of the pit. An additional sample will be collected off the bottom of the pit at the lowest point. All samples will be analyzed for COGCC Table 910-1 thresholds. Sample locations will be provided in a sample location map attached to the closure summary. Any additional identified areas of concern will be sampled independently for TPH/BTEX for initial concentrations.

Proposed Groundwater Sampling

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

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 11
Number of soil samples exceeding 915-1 6
Was the areal and vertical extent of soil contamination delineated? Yes
Approximate areal extent (square feet) 0

NA / ND

-- Highest concentration of TPH (mg/kg) 430
-- Highest concentration of SAR 87
BTEX > 915-1 No
Vertical Extent > 915-1 (in feet) 0

Groundwater

Number of groundwater samples collected 0
Was extent of groundwater contaminated delineated? No
Depth to groundwater (below ground surface, in feet) 92'
Number of groundwater monitoring wells installed 0
Number of groundwater samples exceeding 915-1 0

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
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?
Three (3) background samples were collected from the nearby undisturbed soil and analyzed for arsenic and inorganics (SAR/EC/pH)

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.

Pit subliner soil screening and investigation indicated soils did not exceed COGCC Table 910-1 thresholds. Samples were collected from various points on the side wall and pit bottom and field screened with PID and Petroflag. Readings ranged from 12-55ppm with the PID and 110-221 mg/kg with the Petroflag. Due to field screening results indicating no impacts exceeded Table 910-1, confirmation samples were collected from a depth of 0-6" below the surface of the side wall and pit bottom surface. Sample results indicated all soils satisfy Table 910-1 with the exception to arsenic and inorganics (SAR/EC/pH). Arsenic concentrations observed are comparable with background concentrations and relief to the arsenic threshold in Table 910-1 is requested as outlined in FAQ 31. Additional site investigation information is available below regarding the SAR concentrations being elevated above background concentrations.
The pit liner has been removed and hauled off-site to an approved commercial solid waste disposal facility.

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.

Initial sampling conducted on 6/4/19 of the pit side wall and bottom indicated that arsenic and inorganic (SAR/EC/pH) exceedances were observed. Side wall samples were collected at a point positioned center on the wall, approximately 10 feet below the ground surface. The pit bottom sample was collected off the bottom of the pit at the lowest point, approximately 20ft below ground surface. The arsenic concentrations within the pit sampling is consistent with concentrations observed in background samples and relief to the arsenic threshold outlined in Table 910-1 is requested as per COGCC FAQ 31. Due to the high inorganic concentrations, the COGCC requested that additional sampling be collected from within the pit to further evaluate concentrations. Additional sampling was conducted on 6/21/19 of the side walls at a point higher than the initial sampling, which was ~five (5) feet below the ground surface. The additional pit bottom sample was collected at the opposite side of the pit, which is approximately the same depth as the initial sampling. Results from the re-sampling on 6/21/19 indicate inorganics (SAR/EC/pH) concentrations were below COGCC Table 910-1 with the exception to the western wall and bottom, as well as one PAH constituent exceeded (dibenzo(A,H)anthracene) by 0.013 mg/kg. The surface of the side wall was roughened with the teeth on the trackhoe bucket (~4" deep), removing any interference from the felt liner bleed (typically present within the 1-2 inches of the underlying soil) and exposing the soil to UV light for approximately 11 days for allow for natural degradation of the dibenzo(a,h)anthracene constituent. A sample was re-collected from the northern side wall on 7/2/19, where concentrations now satisfy COGCC Table 910-1.

No soils were excavated nor was any landfarming conducted. The surface roughening on the north wall by the trackhoe teeth to a depth of 4" remained in place until resampling.

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) _____ 0
- _____ Name of Licensed Disposal Facility or COGCC Facility ID # _____
- _____ Excavate and onsite remediation
- _____ No Land Treatment
- _____ No Bioremediation (or enhanced bioremediation)
- _____ No 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.

Groundwater has not been impacted by the operation of the production pit and monitoring is not required. The nearest ground water well (Permit # 234309) indicates static water levels are at 92ft.

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.

The pit will be reclaimed to the present grade of the location or to the approximate original contour of the landscape and consistent with the 1000-series Rule. Seeding of the disturbed area will be performed in accordance with its' intended use. The seed mix will be prescribed by the landowner. There are no known noxious weeds in the immediate area of the disturbance.

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? Yes

If YES, does the seed mix comply with local soil conservation district recommendations? Yes

Did the local soil conservation district provide the seed mix? No

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). 05/01/2019

Proposed site investigation commencement. 06/24/2019

Proposed completion of site investigation. 07/02/2019

REMEDIAL ACTION DATES

Proposed start date of Remediation. _____

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:

OPERATOR COMMENT

Please forward onto John Heil

This Supplemental Form 27 is being submitted to accompany the previously submitted Supplemental Form 27 closure request with the "Final Closure Request" box checked under Remediation Completion Summary.

For pit closure documentation, refer to Doc# 402129100

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

Signed: Mike Gardner

Title: TEP Environmental

Submit Date: 08/11/2021

Email: mgardner@terraep.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: John Heil

Date: 01/17/2022

Remediation Project Number: 13721

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

	Based on a review of the information provided, it appears that no further action is necessary at this time and COGCC approves the closure request. Should conditions at the site indicate contaminant concentrations in soils exceeding COGCC standards, or, if groundwater is found to be significantly impacted, further investigation and/or remediation activities may be required at the site.
1 COA	

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**

402776855	FORM 27-SUPPLEMENTAL-SUBMITTED
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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)