

State of Colorado
Energy & Carbon Management Commission1120 Lincoln Street, Suite 801, Denver, Colorado 80203
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403572343

Receive Date:

01/03/2024

Report taken by:

Kari Brown

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: PETERSON ENERGY OPERATING INC	Operator No: 68710	Phone Numbers
Address: PO BOX 2169		Phone: (970) 669-7411
City: LOVELAND	State: CO	Zip: 80539-2169
Contact Person: Ryan Dornbos	Email: Ryan@PEOperating.com	Mobile: ()

PROJECT, PURPOSE & SITE INFORMATION

PROJECT INFORMATION

Remediation Project #: 31708 Initial Form 27 Document #: 403498852

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: WELL	Facility ID: _____	API #: 123-09683	County Name: WELD
Facility Name: WOOLLEY 2	Latitude: 40.063620	Longitude: -105.034820	
** correct Lat/Long if needed: Latitude: _____		Longitude: _____	
QtrQtr: NWSW	Sec: 8	Twp: 1N	Range: 68W Meridian: 6 Sensitive Area? Yes

Facility Type: LOCATION	Facility ID: 318620	API #: _____	County Name: WELD
Facility Name: WOOLLEY B-61N68W 8NWSW	Latitude: 40.062697	Longitude: -105.033627	
** correct Lat/Long if needed: Latitude: _____		Longitude: _____	
QtrQtr: NWSW	Sec: 8	Twp: 1N	Range: 68W Meridian: 6 Sensitive Area? Yes

Facility Type: OFF-LOCATION FLOWLINE	Facility ID: 466061	API #:	County Name: WELD
Facility Name: Wellhead Line 8NWSW	Latitude: 40.063138	Longitude: -105.034086	
** correct Lat/Long if needed: Latitude:		Longitude:	
QtrQtr: NWSW	Sec: 8	Twp: 1N	Range: 68W
		Meridian: 6	Sensitive Area? Yes

SITE CONDITIONS

General soil type - USCS Classifications SC	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? No	

Other Potential Receptors within 1/4 mile

Residences - 911.66 ft
 Business - 172 ft
 Un-Named Dry Drainage - 475 ft

SITE INVESTIGATION PLAN

TYPE OF WASTE:

☐ E&P Waste ☐ Other E&P Waste ☒ Non-E&P Waste

☐ Produced Water ☐ Workover Fluids ☐ No Waste Generated

☐ 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
UNDETERMINED	GROUNDWATER	NA	Lab Analysis if Encountered
UNDETERMINED	SOILS	NA	Lab 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.

A site assessment will be conducted pursuant to COGCC Rule 911 at the Woolley #2 Location.

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):

Grab confirmation soil samples will be collected from the wellhead. Soil samples will be analyzed by a certified laboratory for TPH (total volatile [C6-C10] and extractable [C10-C36] hydrocarbons), organic compounds in soil per COGCC Table 915-1, and EC, SAR, pH, and boron. All samples collected will be analyzed by a certified laboratory using approved COGCC laboratory analysis methods.

Proposed Groundwater Sampling

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

If groundwater is encountered during the site investigation, a grab groundwater sample will be collected and analyzed for all organic compounds per COGCC Table 915-1.

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):

Visual inspection of the location and flowlines will occur during abandonment activities. Field personnel will field screen all disturbed areas using visual and olfactory senses to determine if laboratory confirmation sampling is required. The COGCC Wellhead, Flowline, and Tank Battery Closure Checklists will be utilized and filled out during the abandonment process. A photolog will be submitted on the subsequent Form 27.

SITE INVESTIGATION REPORT

SAMPLE SUMMARY

Soil

Number of soil samples collected 6

Number of soil samples exceeding 915-1 0

NA / ND

-- Highest concentration of TPH (mg/kg) 186.7

Highest concentration of SAR

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

BTEX > 915-1 No

Approximate areal extent (square feet) 0

Vertical Extent > 915-1 (in feet) 0

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

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?

Yes, one background sample was collected in the field north of the battery site, higher in elevation from the well and production facility.

☐ 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.

No source was generated

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.

NA

Soil Remediation Summary

☐ In Situ

☐ Ex Situ

Bioremediation (or enhanced bioremediation)

Excavate and offsite disposal

Chemical oxidation

If Yes: Estimated Volume (Cubic Yards)

Air sparge / Soil vapor extraction

Name of Licensed Disposal Facility or COGCC Facility ID #

Natural Attenuation

Excavate and onsite remediation

Other

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

☐ 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.

Operator is in compliance with Rule 702 bonding requirements and is properly insured per Rule 705.

Operator anticipates the remaining cost for this project to be: \$ 0

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? Yes

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? Yes

Does the previous reply indicate consideration of background concentrations? Yes

Does Groundwater meet Table 915-1 standards? Yes

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 completed accordance with the requests of the land owner, any agreements and contracts related to the surface use, and in accordance with COGCC 1000 Series Rules where applicable.

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? Yes _____

If YES, does the seed mix comply with local soil conservation district recommendations? No _____

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

SITE RECLAMATION DATES

Proposed date of commencement of Reclamation. 11/01/2023

Proposed date of completion of Reclamation. 01/31/2024

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. 08/09/2023

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

SITE INVESTIGATION DATES

Date of Initial Actions described in Site Investigation Plan (start date). 10/26/2023

Proposed site investigation commencement. 10/26/2023

Proposed completion of site investigation. 10/26/2023

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

Arsenic is above table 915 concentrations, however the background sample taken off the location demonstrates the arsenic on this location is well below the naturally occurring arsenic in the area.

The lab was asked to provide a re-run for some of the pHs and the SAR below the oil tank because the EC was so low the SAR was seemingly errant. The rerun for SAR came back within 915 range as well.

To date the battery and separator have been removed and the pad disturbance can revert to use by Crestone/Civitas since this was a shared location. The well site has been re-contoured and will be worked and planted by the surface tenant this spring.

Addressing of COAs:

1. Proposed soil sampling plan is inadequate. Operator shall conduct a closure investigation in accordance with Rule 911.a.(4) Guidance Document.

Samples were collected at the wellhead, at the separation equipment, under each AST and on all were field screened with a PID and any additional excavated or potholes areas were also field screened.

2. Operator shall analyze soil samples for the complete Table 915-1 Contaminants of Concern.

All samples were run for the complete table 915-1 Contaminants of Concern.

3. Operator shall collect soil samples for soil suitability for reclamation from the root zone at the produced water vessel, separator, well and ASTs.

All samples were collected from a minimum of 18" depth and deeper in excavated areas where available or requisite.

4. Operator shall fully populate the implementation schedule in accordance with Rule 913.d on the subsequent Supplemental Form 27.

The implementation schedule has been populated.

5. Operators will collect and submit for laboratory analysis a soil sample collected from the areas most likely to have been impacted during the operational life of the flowline. These areas include, but are not limited to: where Flowlines connect to the wellhead, surface equipment, risers, valves, or manifolds; where Flowlines bend or were repaired in the past and at joints and hammer unions; where Flowlines connect to Flowlines or equipment of different material; and where Flowlines crossed drainages or surface water or are in contact with shallow groundwater.

Additionally, Operator shall conduct an environmental investigation to confirm the presence or absence of impacts adjacent to the flowline at a minimum of every 250'.

During the time Peterson Energy Operating has operated the line it has always maintained integrity and there are no suspected leaks. The line is only about 250' in length from the wellhead to the production equipment, but as an extra measure field screenings were conducted at depth in additional areas along the installation to ensure no environmental impacts are present. Samples at the Wellhead and Separator and all risers are reflective of the risers and the production equipment.

6. Operator will submit a Form 44 Pre-abandonment notice pursuant to Rule 1105.d. A Form 44 will be filed prior to starting flowline abandonment, and will be included in the Related Forms in a supplemental Form 27. Abandonment will occur per the requirements of Rule 1105. During flowline abandonment, any liquids evacuated from the flowline will be contained and disposed per the requirements of Rule 905. Approval of this Form 27 does not imply approval of pre-abandonment in place notice required by Rule 1105.d.(2).

Form 44 Pre-abandonment notice was submitted and Document is attached to this form 27. Flowlines were tested, flushed with fresh water, evacuated, and capped on each end below grade.

7. On the subsequent Supplemental Form 27, Operator shall provide the associated Form 44 Flowline Report document number required by Rule 1105.f.(2).

Form 44 Pre-abandonment notice was submitted and Document is attached to this form 27.

Form 44 pre abandonment: 403550424

Form 44 Abandonment Verification: 403572098

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

Signed: Ryan Dornbos

Title: Petroleum Engineer

Submit Date: 01/03/2024

Email: Ryan@PEOperating.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: Kari Brown

Date: 02/13/2024

Remediation Project Number: 31708

COA Type

Description

	<p>Based on the information presented, it appears that no further remedial action is necessary at this time and the ECMC approves the closure request. However, should future conditions at the site indicate contaminant concentrations in soils exceeding ECMC standards or if groundwater is found to be impacted, then further investigation and/or remediation activities may be required.</p> <p>This no further action determination is limited to environmental remediation. Operator is required to comply with ECMC 1100 Series Rules for Flowline Regulations for all Flowline Abandonment activities and ECMC 400 Series Rules for Wellhead Plugging and Abandonment.</p> <p>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.</p>
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

403572343	INVESTIGATION/REMEDATION WORKPLAN (SUPPLEMENTAL)
403639310	ANALYTICAL RESULTS
403639311	ANALYTICAL RESULTS
403639312	ANALYTICAL RESULTS
403642878	MAP
403642879	PHOTO DOCUMENTATION
403685232	FORM 27-SUPPLEMENTAL-SUBMITTED

Total Attach: 7 Files

General Comments

User Group

Comment

Comment Date

		Stamp Upon Approval
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Total: 0 comment(s)