

State of Colorado
Energy & Carbon Management Commission

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404154560
Receive Date:
04/14/2025

Report taken by:
Nick Cholas

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: <u>PDC ENERGY INC</u>	Operator No: <u>69175</u>	Phone Numbers Phone: <u>(303) 860-5800</u> Mobile: <u>()</u>
Address: <u>1099 18TH STREET SUITE 1500</u>		
City: <u>DENVER</u>	State: <u>CO</u>	Zip: <u>80202</u>
Contact Person: <u>Karen Olson</u>	Email: <u>karen.olson@chevron.com</u>	

PROJECT, PURPOSE & SITE INFORMATION

PROJECT INFORMATION

Remediation Project #: 32333 Initial Form 27 Document #: 403546481

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: <u>WELL</u>	Facility ID: _____	API #: <u>123-30880</u>	County Name: <u>WELD</u>
Facility Name: <u>STROHAUER F 33-32D</u>	Latitude: <u>40.353872</u>	Longitude: <u>-104.679936</u>	
** correct Lat/Long if needed: Latitude: <u>40.353862</u>		Longitude: <u>-104.679946</u>	
QtrQtr: <u>NESE</u>	Sec: <u>32</u>	Twp: <u>5N</u>	Range: <u>65W</u> Meridian: <u>6</u> Sensitive Area? <u>Yes</u>
Facility Type: <u>SPILL OR RELEASE</u>	Facility ID: <u>486157</u>	API #: _____	County Name: <u>WELD</u>
Facility Name: <u>Strohauer F 33-32D Wellhead</u>	Latitude: <u>40.352620</u>	Longitude: <u>-104.680386</u>	
** correct Lat/Long if needed: Latitude: _____		Longitude: _____	
QtrQtr: <u>NESE</u>	Sec: <u>32</u>	Twp: <u>5N</u>	Range: <u>65W</u> Meridian: <u>6</u> Sensitive Area? <u>Yes</u>

SITE CONDITIONS

General soil type - USCS Classifications SM

Most Sensitive Adjacent Land Use Agricultural

Is domestic water well within 1/4 mile? Yes

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

Nearest Well: Domestic/Irrigation - 775' E; Surface Water: Irrigation Ditch - 151' W; Occupied Building: 613' E; Livestock: 624' ENE; FWS Wetlands: 817' NNE
Freshwater Pond (PABFx).

Flowline Conflict: Flowline Crosses Irrigation Ditch ~818' SSW of Wellhead.

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 checked="" type="checkbox"/> Oil | <input type="checkbox"/> Tank Bottoms | |
| <input checked="" 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	GROUNDWATER	NA	Lab Analysis and Field Screening if encountered
Yes	SOILS	Refer to Tables & Figures	Lab analysis and field screening

INITIAL ACTION SUMMARY

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

On January 9 & 11, 2024, field screening and confirmation soil sampling activities were conducted in accordance with the ECMC Rule 911 during the decommissioning of the Strohauer F 33-32D wellhead and removal of the associated flowline. On January 29, 2024, it was determined that a historic release was discovered along the flowline when analytical results returned with organic compound exceedances at soil sample location FL01-02. Due to subcontractor availability, excavation activities were unable to be initiated. As such, no soil was removed from the 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):

On January 11, 2023, one soil sample (FL01-02) was collected from the flowline source area at approximately 4 feet below ground surface (bgs). The sample was submitted for laboratory analysis of the full ECMC Table 915-1 analytical suite. Analytical results indicated that site specific COCs include: benzene, toluene, ethylbenzene, and total xylenes (BTEX), naphthalene, total petroleum hydrocarbons (TPH[C6-C36]), 1,2,4- trimethylbenzene (TMB), 1,3,5-TMB, anthracene, benzanthracene, benzopyrene, benzo(a)fluoranthene, benzo(b)fluoranthene, benzo(k)fluoranthene, chrysene, fluoranthene, indenopyrene, and pyrene.

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, grab groundwater samples will be collected and analyzed for all organic and inorganic compounds per ECMC 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):

On January 9 & 11, 2024, soil encountered on-site and below production equipment was visually inspected and field screened for volatile organic compound (VOC) concentrations using a photoionization detector (PID). Per the approved proposed soil sampling plan, two soil samples (WH01 & FLR01) were collected below the wellhead & flowline riser at approximately 6 ft & 4 ft bgs, respectively, and submitted for laboratory analysis of the full Table 915-1 analytical suite. Six (6) additional soil samples (FL01-01, FL01-03 - FL01-06, FLR02) were collected every 250 feet along the flowline, at the changes in direction, and underneath the flowline riser at the separator. Soil samples (FL01-04 - FL01-06 & FLR02) were submitted for laboratory analysis of the full Table 915-1 analytical suite. Analytical results indicated that all compound concentrations were within the acceptable Table 915-1 standards or below background concentrations, except for pH & barium in WH01; barium & lead in FLR01.

SITE INVESTIGATION REPORT

SAMPLE SUMMARY

Soil

Number of soil samples collected 7
Number of soil samples exceeding 915-1 3
Was the areal and vertical extent of soil contamination delineated? No
Approximate areal extent (square feet) 300

NA / ND

-- Highest concentration of TPH (mg/kg) 183
-- Highest concentration of SAR 1.62
BTEX > 915-1 No
Vertical Extent > 915-1 (in feet) 6

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 915-1

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 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?

Six background soil samples were collected near the wellhead and analyzed for metals in soil per ECMC Table 915-1 and pH. Additionally, 24 background soil samples were collected from the nearby Bostron 32-3 Wellhead (REM# 26573) and analyzed for ECMC Table 915-1 metals. Background soil samples were collected from depths ranging between 2.5 to 8 feet below ground surface (ft bgs). The maximum background concentrations for pH was observed to be 8.55. The maximum background concentrations with a 1.25x multiplier applied for arsenic, barium, and lead were calculated to be 4.64mg/kg, 114mg/kg, and 47.6mg/kg, respectively. All arsenic concentrations observed during decommissioning were below background levels.

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?

Concurrently with the remedial excavation that is proposed in the Remedial Action Plan section of this Form 27, background soil samples will be collected to determine if pH, barium, and lead are attributed to native soil conditions at the site. Proposed background soil sample locations are shown on the attached proposed excavation map.

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.

Refer to the Remediation Summary section below.

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 remedial excavation will be completed to remove the Benz(a)anthracene compound exceedances observed at sample locations FL01-02@4' during decommissioning. Remedial excavation confirmation soil samples will be collected and analyzed for full ECMC Table 915-1 constituents. The results of the remedial excavation will be submitted on a subsequent Form 27.

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 ECMC 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.

Groundwater was not encountered during decommissioning of the wellhead and removal of the flowline.

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 Second Quarter 2025 - Timeline Update

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 does not have site-specific financial assurance for this project; however, Operator has inactive well, blanket, and surface bonding including Surety IDs 106077122, 106473808, and 106473820, as well as commercial general liability and/or umbrella/excess insurance meeting the requirements of Rule 705.b. Operator does not anticipate making an insurance claim for this project.

- Further soil investigation/delineation is required

Costs included herein are estimates only and may change over time based on numerous factors. Accordingly, Operator makes no guarantees as to the accuracy of such cost estimates, thus providing an estimate for the next year below.

Operator anticipates the remaining cost for this project to be: \$ 50000

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 _____

ECMC Disposal Facility ID #, if applicable: _____

Non-ECMC Disposal Facility: _____

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

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? _____

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 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.

The location will be reclaimed in accordance with the ECMC 1000 series.

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 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. 01/09/2024

Proposed date of completion of Reclamation. 10/14/2026

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. 08/15/2023

Actual Spill or Release date, or date of discovery. 01/23/2024

SITE INVESTIGATION DATES

Date of Initial Actions described in Site Investigation Plan (start date). 10/20/2023

Proposed site investigation commencement. 04/14/2025

Proposed completion of site investigation. 10/14/2025

REMEDIAL ACTION DATES

Proposed start date of Remediation. 10/14/2025

Proposed date of completion of Remediation. 04/14/2026

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:

The implementation schedule has been changed due to the decommissioning of the Strohauser F 33-32D wellhead/flowline and necessity for remedial excavation activities adjacent to the wellhead/flowline. The proposed remedial excavation will be completed following the approval of this form.

OPERATOR COMMENT

This Form 27 is being submitted as a 2Q25 Timeline Update at the former Strohauser F 33-32D Wellhead/Flowline location. A proposal to excavate the Benz(a)anthracene exceedance identified during decommissioning (soil samples FL01-02@4') is presented in the Remedial Action Plan section of this Form 27.

The former Strohauser F 33-32D Wellhead was decommissioned on 1/9/2024. Discrete samples were collected from beneath the wellhead (WH01@6') and wellhead riser (FLR01@4'). Analytical results indicated that ECMC 915-1 constituents were below the applicable regulatory standards or background levels in all samples, with the exception of pH and barium in WH01@6' and barium and lead in FLR01@4'. No ECMC 915-1 organic constituent exceedances were identified in the wellhead decommissioning soil samples. Groundwater was not encountered during the wellhead cut and cap.

The former Strohauser F 33-32D Flowline was decommissioned on 1/11/2024. The flowline was fully removed. Discrete samples were taken at the separator riser (FLR02@4'), and at direction changes along the flowline (FL01-02@4', FL01-04@4', FL01-05@4', and FL01-06@4'). Analytical results indicated a benzo(a)anthracene exceedance was identified at sample location FL01-02@4'. Analytical results indicated that ECMC 915-1 Inorganic constituents were below the applicable regulatory standards or background levels in all samples. Groundwater was not encountered during flowline decommissioning.

Six background soil samples were collected near the wellhead and analyzed for metals in soil per ECMC Table 915-1 and pH. Additionally, 24 background soil samples were collected from the nearby Bostron 32-3 Wellhead (REM# 26573) and analyzed for ECMC Table 915-1 metals. Background soil samples were collected from depths ranging between 2.5 to 8 feet below ground surface (ft bgs). The maximum background concentrations for pH was observed to be 8.55. The maximum background concentrations with a 1.25x multiplier applied for arsenic, barium, and lead were calculated to be 4.64mg/kg, 114mg/kg, and 47.6mg/kg, respectively. All arsenic concentrations observed during decommissioning were below background levels.

Concurrently with the remedial excavation that is proposed in the Remedial Action Plan section of this Form 27, background soil samples will be collected to determine if pH, barium, and lead are attributed to native soil conditions at the site.

Quarterly reporting will be conducted until closure criteria are achieved for the remediation project. The results of the supplemental site investigation will be submitted on a subsequent Form 27.

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

Signed: Andy Sagen

Title: Environmental Consultant

Submit Date: 04/14/2025

Email: tas-chevron-1@tasman-geo.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: Nick Cholas

Date: 08/04/2025

Remediation Project Number: 32333

COA Type

Description

	See comments/COA's on SF27 Doc #404271289. SF27 Doc #404271289 was submitted more recently at the time of review of this Doc (Doc #404154560).
1 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
404154560	INVESTIGATION/REMEDATION WORKPLAN (SUPPLEMENTAL)
404154567	SITE INVESTIGATION PLAN
404304551	FORM 27-SUPPLEMENTAL-SUBMITTED

Total Attach: 3 Files

General Comments

User Group	Comment	Comment Date
		Stamp Upon Approval

Total: 0 comment(s)