

State of Colorado  
Energy & Carbon Management Commission

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404282502  
Receive Date:  
07/21/2025

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 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>(832) 349-0757</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>Lauren Hoff</u>	Email: <u>lauren.hoff@chevron.com</u>	

PROJECT, PURPOSE & SITE INFORMATION

PROJECT INFORMATION

Remediation Project #: 32453 Initial Form 27 Document #: 403580972

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>LOCATION</u>	Facility ID: <u>446742</u>	API #: _____	County Name: <u>WELD</u>
Facility Name: <u>MDM Tank Battery 435363</u>	Latitude: <u>40.134794</u>	Longitude: <u>-104.967770</u>	
** correct Lat/Long if needed: Latitude: <u>40.134794</u>		Longitude: <u>-104.967862</u>	
QtrQtr: <u>SWSE</u>	Sec: <u>14</u>	Twp: <u>2N</u>	Range: <u>68W</u> Meridian: <u>6</u> Sensitive Area? <u>Yes</u>
Facility Type: <u>SPILL OR RELEASE</u>	Facility ID: <u>488349</u>	API #: _____	County Name: <u>WELD</u>
Facility Name: <u>MDM 33, 34-14</u>	Latitude: <u>40.134828</u>	Longitude: <u>-104.967848</u>	
** correct Lat/Long if needed: Latitude: _____		Longitude: _____	
QtrQtr: <u>SWSE</u>	Sec: <u>14</u>	Twp: <u>2N</u>	Range: <u>68W</u> Meridian: <u>6</u> Sensitive Area? <u>Yes</u>

Facility Type: SPILL OR RELEASE Facility ID: 488352 API #: \_\_\_\_\_ County Name: WELD  
Facility Name: MDM 33, 34-14 Latitude: 40.134880 Longitude: -104.967810  
\*\* correct Lat/Long if needed: Latitude: \_\_\_\_\_ Longitude: \_\_\_\_\_  
QtrQtr: SWSE Sec: 14 Twp: 2N Range: 68W Meridian: 6 Sensitive Area? Yes

**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: Stock - 586' SSW; Surface Water: Unnamed Creek - 128' NNE; Occupied Building: 251' SSW; Livestock: 205' SSW; FWS Wetlands: 118' NNE  
Freshwater Emergent Wetland (PEM1A); Tank Battery Within 100-Year Floodplain .

# 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 ECMC Doc. #403961432	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.

In accordance with ECMC Rule 911, this form serves as notification for the decommissioning and abandonment of the MDM 33, 34-14 production facility on 10/16/2024. The ground and sub-surfaces were visually inspected for hydrocarbon impacts during equipment decommissioning. In addition, on-site dump lines located between the separator and tank battery were removed by pulling from either end during decommissioning activities.

On 10/17/2024, a soil sample was collected along the flowline beneath the separator riser (FL01R-S@4') and analyzed for full ECMC Table 915-1 contaminants of concern during decommissioning of the associated MDM 33-14 Flowline (Remediation #32449).

On 10/17/2024, a soil sample was collected along the flowline beneath the separator riser (FL01R-S@4') and analyzed for full ECMC Table 915-1 contaminants of concern during decommissioning of the associated MDM 34-14 Flowline (Remediation #32447).

## 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 were collected from the produced water vessel excavation (PWV01-W@2.5', PWV01-B@5', and WDL01@0-6"), beneath the ground oil tank (AST01@0-6"), and at the riser for the dumpline of the separator (SEP01-DL@4'). Soil samples were analyzed by a certified laboratory for the full extent of Table 915-1, including but not limited to: TPH (total volatile [C6-C10] and extractable [C10-C36] hydrocarbons) organic compounds in soil per ECMC Table 915-1, and EC, SAR, pH, metals, and boron using approved ECMC 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 decommissioning and/or abandonment activities, a grab sample will be collected as soon as practical. If contaminated soil is in contact with groundwater or if free product/hydrocarbon sheen are observed, the release will be reported in accordance with Rule 912.b. Groundwater samples will be submitted for laboratory analysis of BTEX, naphthalene, 1,2,4-trimethylbenzene, and 1,3,5-trimethylbenzene by EPA Method 8260, chloride and sulfate anions by EPA Method 300.0, and total dissolved solids (TDS) by Method SM 2540C.

### 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 ):

Discrete soil samples were collected from the base of the produced water vessel excavation and excavation sidewall in areas most likely to be impacted and exhibiting the highest field screened VOC concentration. The soil samples were submitted for laboratory analysis of the full Table 915-1 analytical suite by ECMC approved methods. Assessment of off location flowlines will be addressed with their respective wellheads under a separate Form 27. A detailed summary of decommissioning activities, including field notes, site photos, figures, and laboratory analytical results, is attached to the previous Form 27, document #403961432.

# SITE INVESTIGATION REPORT

## SAMPLE SUMMARY

### Soil

Number of soil samples collected 6

Number of soil samples exceeding 915-1 6

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

Approximate areal extent (square feet) 600

### NA / ND

-- Highest concentration of TPH (mg/kg) 3400

-- Highest concentration of SAR 0.711

BTEX > 915-1 Yes

Vertical Extent > 915-1 (in feet) 5

### 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?

Four background samples were collected from one discrete location near the tank battery (BKG01) from depths ranging between 0-0.5 to 5 feet below ground surface (ft bgs) and analyzed for full Table 915-1 analysis. The maximum background concentration for pH was observed to be 8.35. The maximum background concentrations with a 1.25x multiplier applied for arsenic and barium was calculated to be 6.05mg/kg and 141mg/kg, respectively. All arsenic and barium concentrations observed during decommissioning were below background levels.

In background soil sample BKG01@0-6", Benzo(a) anthracene and indeno(1,2,3-cd) pyrene were observed within the applicable Table 915-1 standards, but above the minimum laboratory detection limit. The analytical results of this background sample will not be used and additional background soil samples will be collected to assess Table 915-1 constituents in native soil.

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?

A supplemental site investigation (SSI) will be completed to vertically and horizontally delineate the ethyl-benzene, xylenes, 124-Trimethylbenzene (TMB), 1,3,5-TMB, naphthalene, TPH, 1-Methylnaphthalene (M), and 2-M exceedances observed during decommissioning. A proposed SSI map is attached to this Form 27. During the SSI, soil samples will be collected and analyzed for full ECOMC Table 915-1 constituents. Concurrently with the SSI, additional background samples will be collected to determine if pH is attributed to native soil conditions at the site. The SSI will be completed in accordance with the proposed implementation schedule, and the results of the SSI will be submitted on a subsequent Form 27.

## 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.

Following supplemental site investigation activities, the impacted material observed at sample locations PWV01-W@2.5' and WC01@3' will be removed via remedial excavation prior to requesting No Further Action (NFA) for the Site. Remedial excavation confirmation soil samples will be collected in accordance with the pending proposed excavation map and analyzed for full ECOMC Table 915-1 constituents. The results of the remedial excavation will be submitted on a subsequent Form 27.

## REMEDICATION 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 supplemental site investigation (SSI) will be completed to vertically and horizontally delineate the ethyl-benzene, xylenes, 1,2,4-TMB, 1,3,5-TMB, naphthalene, TPH, 1-Methylnaphthalene (M) and 2-M exceedances observed during decommissioning at the waste characterization sample WC01@3', as well as the 1-M, 2-M, and pH exceedances observed at decommissioning soil sample PWV01-W@2.5'. Additionally, the pH exceedances observed at soil sample locations AST01@0-6" and PWV01-B@5' will be vertically and horizontally delineated. During the SSI, soil samples will be collected and analyzed for full ECMC Table 915-1 constituents. The SSI will proceed in accordance with the attached proposed site investigation map, and proposed sampling plan outlined in the Site Investigation report section of this Form 27.

**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 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 activities.



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.

Reclamation will be conducted in accordance with ECMC 1004 Series Rules.

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? \_\_\_\_\_

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. 10/16/2024

Proposed date of completion of Reclamation. 01/21/2026

## 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. 09/16/2023

Actual Spill or Release date, or date of discovery. 10/17/2024

### SITE INVESTIGATION DATES

Date of Initial Actions described in Site Investigation Plan (start date). 03/11/2024

Proposed site investigation commencement. 04/13/2025

Proposed completion of site investigation. 09/27/2025

### REMEDIAL ACTION DATES

Proposed start date of Remediation. 09/27/2025

Proposed date of completion of Remediation. 12/27/2025

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 MDM 3,34-14 tank battery and necessity for supplemental site investigation activities adjacent to the tank battery. The proposed site investigation will be completed following the approval of this form.

The implementation schedule has not changed from the schedule proposed in previous Form 27 # 404154697, which is still pending approval as of the submission of this report.

**OPERATOR COMMENT**

This Form 27 is being submitted as a 3Q25 timeline update for the proposed site investigation at the MDM 33, 34-14 Tank Battery.

The implementation schedule has not changed from the schedule proposed in previous Form 27 # 404154697, which is still pending approval as of the submission of this report. The site investigation does not have a tentative commencement date as of the submission of this Form 27 but is expected to commence in the Third Quarter of 2025. The ECMC will be notified of any updates to the implementation schedule in a subsequent Form 27.

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

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: 07/21/2025

Email: asagen@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: Kari Brown

Date: 10/14/2025

Remediation Project Number: 32453

**COA Type**

**Description**

	ECMC has processed this form as an update; no analytical was attached thus approval of this form does not imply any agreement with comments on completion of site investigation. All ongoing/unaddressed comments/COAs from previous Forms remain applicable.
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.

<b>Att Doc Num</b>	<b>Name</b>
404282502	INVESTIGATION/REMEDATION WORKPLAN (SUPPLEMENTAL)
404283275	SITE INVESTIGATION PLAN
404390496	FORM 27-SUPPLEMENTAL-SUBMITTED

Total Attach: 3 Files

**General Comments**

<b>User Group</b>	<b>Comment</b>	<b>Comment Date</b>
		Stamp Upon Approval

Total: 0 comment(s)