

State of Colorado  
Energy & Carbon Management Commission

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Document Number:  
404222164  
Receive Date:  
05/29/2025

Report taken by:  
Collin Metz

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 ECOM 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 #: 33833 Initial Form 27 Document #: 403622799

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: <u>LOCATION</u>	Facility ID: <u>431446</u>	API #: _____	County Name: <u>WELD</u>
Facility Name: <u>Land JG Offsite Tank Battery 31-25D</u>	Latitude: <u>40.088647</u>	Longitude: <u>-104.602339</u>	
** correct Lat/Long if needed: Latitude: <u>40.088426</u>		Longitude: <u>-104.602473</u>	
QtrQtr: <u>Lot 2</u>	Sec: <u>31</u>	Twp: <u>2N</u>	Range: <u>64W</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 - 378' WSW; Surface Water: Irrigation Ditch - 112' W; Livestock: 1,073' E; FWS Wetlands: 844' NNE Freshwater Emergent Wetland (PEM1C); HPH Sensitive Wildlife Habitat: Rule 1202.d: Tank Battery Within Mule Deer Migration Corridor; Rule 1202.c: 383' NE Aquatic Native Species Conservation Area; 100-Year Floodplain 247' NE of Tank Battery.

**SITE INVESTIGATION PLAN**

**TYPE OF WASTE:**

- E&P Waste**       **Other E&P Waste**       **Non-E&P Waste**
- Produced Water       Workover Fluids
- 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	Laboratory analysis if encountered
Yes	SOILS	Refer to ECMC Document#404015525	Laboratory 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 Land 31-13, 17, 19, 24, 36D production facility. 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. Field observations and photo documentation were recorded in a field inspection form and is attached to ECMC Document No. 404015525.

**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, beneath the ground oil tanks, at the risers for the flowline and dumphine of the separator. In addition, the on-site dump lines located between the separator and tank battery were removed by pulling from either end. 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. All samples collected were analyzed by a certified laboratory 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 future site investigation activities, a grab sample will be collected and 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 ):

Visual inspection at the tank battery area occurred during abandonment activities. Field personnel field screened all disturbed areas using visual and olfactory senses. Additionally, discrete soil samples were collected from the base of the excavation and excavation sidewall in areas most likely to be impacted and exhibiting the highest field screened VOC concentration. A detailed summary of decommissioning activities, including field notes, site photos, figures, and laboratory analytical results, is attached to ECMC Document No. 404015525.

# SITE INVESTIGATION REPORT

## SAMPLE SUMMARY

### Soil

Number of soil samples collected 14

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

ND Highest concentration of TPH (mg/kg) \_\_\_\_\_

-- Highest concentration of SAR 6.66

BTEX > 915-1 No

Vertical Extent > 915-1 (in feet) 5

### Groundwater

Number of groundwater samples collected 0

Was extent of groundwater contaminated delineated? No

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?

On 9/10/2024, three background soil samples were collected at one discrete location (BKG01) near the tank battery in native material at depths ranging from 0.5 and 4.5 feet bgs and analyzed for metals in soil per ECMC Table 915-1, pH, SAR, EC, and boron.

On 9/18/2024 and 12/18/2024, 21 background soil samples were collected near the tank battery (BKG02-BKG06) in native material under the Land JG 31 -13, 17, 19, 24, 36D flowlines project (REM# 33835). Samples were collected at depths ranging from 0.5 and 4.5 feet bgs and analyzed for metals in soil per ECMC Table 915-1, pH, SAR, EC, and boron.

The maximum background concentration for pH was observed to be 8.63. The maximum background concentration with a 1.25x multiplier applied for arsenic, barium, and cadmium was calculated to be 7.66 mg/kg, 445 mg/kg, and 0.526 mg/kg respectively. Based on the analytical results, pH and cadmium remain in exceedance of ECMC standards and background concentrations on site.

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?

Based on decommissioning analytical results, a supplemental site investigation (SSI) will be completed to vertically and horizontally delineate the remaining pH and cadmium exceedances on site. Soil samples will be analyzed for the full Table 915-1 analytical suite. Concurrent with the SSI, additional background samples will be collected to assess native soil conditions at the site. Background soil samples will be analyzed for metals in soil per ECMC Table 915-1, pH, SAR, EC, and boron. The proposed soil boring locations are attached to this 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.

No impacted material caused by oil and gas operations was identified at this time.

## 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.

Tank battery decommissioning analytical results indicated that organic compound concentrations were in compliance with the applicable ECMC regulatory standards in all soil sample locations. Based on the results for the remaining analytes, further site investigation activities are required to delineate pH and cadmium exceedances remaining in-situ. In addition, additional background soil borings will be advanced surrounding the former tank battery to continue to assess pH and cadmium concentrations in native material. The proposed soil boring locations are attached to this Form 27.

### **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 ECMC 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.

No groundwater was encountered during decommissioning activities.

# REMEDATION 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 2Q2025 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.

- Facility and infrastructure were decommissioned and the location will be reclaimed in accordance with the ECMC 1000 Series.
- Investigation and delineation is complete for organics in soil.
- Investigation and delineation of pH and metals is ongoing in soil.

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: \$ 15000

## WASTE DISPOSAL INFORMATION

Was E&P waste generated as part of this remediation? \_\_\_\_\_

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: \_\_\_\_\_

# REMEDATION COMPLETION REPORT

## REMEDATION 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.

Following tank battery decommissioning activities, the location was backfilled, compacted, and re-contoured to match pre-existing conditions. The location will be reclaimed in accordance with the ECMC 1000 series.

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. 09/09/2024

Proposed date of completion of Reclamation. 11/29/2026

## 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. 11/02/2023

Actual Spill or Release date, or date of discovery. \_\_\_\_\_

### SITE INVESTIGATION DATES

Date of Initial Actions described in Site Investigation Plan (start date). 09/09/2024

Proposed site investigation commencement. 06/30/2025

Proposed completion of site investigation. 07/05/2025

### REMEDIAL ACTION DATES

Proposed start date of Remediation. 11/29/2025

Proposed date of completion of Remediation. 05/26/2026

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 necessity for supplemental site investigation (SSI) activities adjacent to the tank battery. The SSI was tentatively scheduled to commence on April 24, 2025, but was postponed due to field constraints. The SSI is tentatively scheduled to commence on June 30, 2025.

**OPERATOR COMMENT**

This Form 27 is being submitted as a second quarter 2025 timeline update for the supplemental site investigation (SSI) at the Land 31-13, 17, 19, 24, 24D tank battery location.

Detailed summaries of decommissioning activities and subsequent background investigation activities were included on ECMC Document Numbers 404015525 and 404099979, respectively.

Based on the results, a supplemental site investigation (SSI) will be completed to vertically and horizontally delineate the remaining pH and cadmium exceedances on site. Soil samples will be analyzed for the full Table 915-1 analytical suite. Concurrent with the SSI, additional background samples will be collected to continue to assess native soil conditions at the site. Background soil samples will be analyzed for metals in soil per ECMC Table 915-1, pH, SAR, EC, and boron. The proposed soil boring locations are attached to this Form 27.

The SSI was tentatively scheduled to commence on April 24, 2025, but was postponed due to field constraints. The SSI is tentatively scheduled to commence on June 30, 2025.

Pursuant to Rule 913.e, Supplemental Form 27s will be submitted on a quarterly schedule to provide updates and progress of the remediation until closure criteria is met.

NOTE: Operator requests that "tas-chevron-2@tasman-geo.com" receive notification of ECMC's response to this submission.

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

Signed: Jimmy Webster

Title: Environmental Consultant

Submit Date: 05/29/2025

Email: jwebster@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: Collin Metz

Date: 07/08/2025

Remediation Project Number: 33833

**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.
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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**

404222164	FORM 27-SUPPLEMENTAL-SUBMITTED
404222365	SITE INVESTIGATION PLAN

Total Attach: 2 Files

**General Comments**

**User Group**

**Comment**

**Comment Date**

		Stamp Upon Approval
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Total: 0 comment(s)