

State of Colorado
Energy & Carbon Management Commission

1120 Lincoln Street, Suite 801, Denver, Colorado 80203
Phone: (303) 894-2100 Fax: (303) 894-2109



Document Number:
404269716
Receive Date:
07/10/2025

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 #: 33221 Initial Form 27 Document #: 403601855

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>408094</u>	API #: _____	County Name: <u>WELD</u>
Facility Name: <u>GUSTAFSON-65N65W 32SWNE</u>	Latitude: <u>40.358270</u>	Longitude: <u>-104.684832</u>	
** correct Lat/Long if needed: Latitude: <u>40.358237</u>		Longitude: <u>-104.684673</u>	
QtrQtr: <u>SWNE</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 Residential
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: Irrigation - 278' SSW; Surface Water: Union Ditch - 157' NNE; Occupied Building: 671' SSW; Livestock: 470' WSW; FWS Wetlands: 81' S Riverine (R4SBCx); HPH Sensitive Wildlife Habitat: Rule 1202.d: 1,067' NNW - Mule Deer Severe Winter Range; 100-Year Floodplain 178' NNW 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 and field screening, if encountered
Yes	SOILS	Refer to ECMC document #403841935	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, decommissioning of the Dickens F 32-07X, 17D production facility was conducted. 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.

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 soil samples were collected below and/or adjacent to applicable facility equipment, as defined in the Rule 911.a.(4) guidance document (9/20/21), for field screening purposes. Discrete soil samples were collected from the base of the produced water vessels' excavation (PWV01-B, PWV02-B, & PWV03-B) and excavation sidewall in areas most likely to be impacted and exhibiting the highest field screened VOC concentration (PWV02-S & PWV03-S). Lab samples were also collected beneath the above ground tanks (AST01, AST02, & AST03) and beneath the separator risers for the dumpline (SEP01-DL) and flowlines (SEP01-FL01 & SEP01-FL03). The soil samples were submitted for laboratory analysis of the full Table 915-1 analytical suite by ECMC approved methods. Soil samples were submitted for laboratory analysis of the full Table 915-1 analytical suite by ECMC approved 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):

A detailed summary of decommissioning activities, including field notes, site photos, figures, and laboratory analytical results, is attached to previous Form 27 (document #403841935).

SITE INVESTIGATION REPORT

SAMPLE SUMMARY

Soil

Number of soil samples collected 15

Number of soil samples exceeding 915-1 2

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

Approximate areal extent (square feet) 200

NA / ND

ND Highest concentration of TPH (mg/kg) _____

-- Highest concentration of SAR 3.47

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?

On 04/12/2024, three background soil samples were collected from one discrete location (BKG01) at depths ranging between 1 to 5 feet below ground surface (ft bgs) adjacent to the tank battery and analyzed for metals in soil per ECOM Table 915-1, pH, SAR, EC, and boron. During site assessment activities on 05/30/2025, fifteen background soil samples were collected from five discrete locations (BKG01-BKG05) adjacent to the tank battery and analyzed for metals in soil per ECOM Table 915-1, pH, SAR, EC, and boron. Background soil samples were collected from depths ranging between 1 and 10 ft bgs. The maximum background concentrations for pH was observed to be 9.37. The maximum background concentrations with a 1.25x multiplier applied for arsenic, barium, cadmium, lead, and selenium were calculated to be 5.26 mg/kg, 91.8 mg/kg, 0.375 mg/kg, 24.4 mg/kg, and 0.30 mg/kg respectively. All arsenic and selenium concentrations were below 1.25x the maximum 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?

A supplemental site investigation (SSI) will be completed to confirm barium, cadmium, and lead concentrations observed at soil sample locations BH05@1-2', BH05@4.5-5.5', SEP01-FL03@3', AST01@1', and AST02@1'. Concurrently with the SSI, additional background samples will be collected to determine if pH, barium, cadmium and lead concentrations are 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.

A total of approximately 9 cubic yards of impacted material were removed from beneath the produced water vessel excavation (PWV03) and transported for off-site disposal at the Waste Management Landfill in Ault, Colorado under signed PDC waste manifests.

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) was conducted on 05/30/2025 to delineate pH exceedances observed at sample locations AST01 @ 1', PWV01-B @ 5', and PWV02-B @ 5' during initial decommissioning activities, during which five soil borings were advanced to depths ranging from 0 to 10 feet below ground surface (ft bgs). BH01 was advanced adjacent to the source points at the same to vertically delineate pH at that location. BH02-BH05 were advanced surrounding BH01 to vertically and laterally delineate pH. Soil samples were collected and analyzed for full ECMC Table 915-1 constituents. Groundwater was not encountered during this assessment. Lead exceedances observed at sample locations AST01 @ 1' and AST02 @ 1', and pH exceedances observed at AST01 @ 1', PWV01-B @ 5', and PWV02-B @ 5' were fully delineated during the May 2025 SSI.

A supplemental site investigation (SSI) will be completed to confirm barium, cadmium, and lead concentrations observed at soil sample locations BH05@1-2', BH05@4.5-5.5', SEP01-FL03@3', AST01@1', and AST02@1'.

Soil Remediation Summary

In Situ

Ex Situ

_____ Bioremediation (or enhanced bioremediation)

Yes _____ Excavate and offsite disposal

_____ Chemical oxidation

_____ If Yes: Estimated Volume (Cubic Yards) _____ 9

_____ 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.

Groundwater was not encountered during initial decommissioning or site investigation activities.

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 Supplemental Site Investigation (SSI) Sample Summary and SSI Proposal

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: \$ 15000

WASTE DISPOSAL INFORMATION

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

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 Hydrocarbon Impacted Soils

ECMC Disposal Facility ID #, if applicable:

Non-ECMC Disposal Facility: Ault Waste Management Landfill

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.

Reclamation will be in accordance with ECMC 1000 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. 04/10/2024

Proposed date of completion of Reclamation. 06/30/2027

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. 09/28/2023

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

SITE INVESTIGATION DATES

Date of Initial Actions described in Site Investigation Plan (start date). 04/10/2024

Proposed site investigation commencement. 08/15/2025

Proposed completion of site investigation. 02/15/2026

REMEDIAL ACTION DATES

Proposed start date of Remediation. 02/15/2026

Proposed date of completion of Remediation. 08/15/2026

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 completion of the May 2025 supplemental site investigation (SSI) at the Dickens F 32-07X, 17D Tank Battery and necessity for additional SSI activities adjacent to the tank battery. The proposed site investigation will be completed following the approval of this form and is tentatively scheduled for commencement on 08/15/2025.

OPERATOR COMMENT

This Form 27 is being submitted to include the supplemental site investigation (SSI) results and propose additional site investigation activities for the Dickens F 32-07X, 17D Tank Battery location (Remediation #33221).

An SSI was conducted on 05/30/2025 to delineate pH exceedances observed at sample locations AST01 @ 1', PWV01-B @ 5', and PWV02-B @ 5' during initial decommissioning activities, during which five soil borings were advanced to depths ranging from 0 to 10 feet below ground surface (ft bgs). BH01 was advanced adjacent to the source points at the same to vertically delineate pH at that location. BH02-BH05 were advanced surrounding BH01 to vertically and laterally delineate pH. Soil samples were collected and analyzed for full ECMC Table 915-1 constituents. Groundwater was not encountered during this assessment. Lead exceedances observed at sample locations AST01 @ 1' and AST02 @ 1', and pH exceedances observed at AST01 @ 1', PWV01-B @ 5', and PWV02-B @ 5' were fully delineated during the May 2025 SSI.

On 04/12/2024, three background soil samples were collected from one discrete location (BKG01) at depths ranging between 1 to 5 feet below ground surface (ft bgs) adjacent to the tank battery and analyzed for metals in soil per ECMC Table 915-1, pH, SAR, EC, and boron. During site assessment activities on 05/30/2025, fifteen background soil samples were collected from five discrete locations (BKG01-BKG05) adjacent to the tank battery and analyzed for metals in soil per ECMC Table 915-1, pH, SAR, EC, and boron. Background soil samples were collected from depths ranging between 1 and 10 ft bgs. The maximum background concentrations for pH was observed to be 9.37. The maximum background concentrations with a 1.25x multiplier applied for arsenic, barium, cadmium, lead, and selenium were calculated to be 5.26 mg/kg, 91.8 mg/kg, 0.375 mg/kg, 24.4 mg/kg, and 0.30 mg/kg respectively. All arsenic and selenium concentrations were below 1.25x the maximum background levels.

A supplemental site investigation (SSI) will be completed to confirm barium, cadmium, and lead concentrations observed at soil sample locations BH05@1-2', BH05@4.5-5.5', SEP01-FL03@3', AST01@1', and AST02@1'. Concurrently with the SSI, additional background samples will be collected to determine if pH, barium, cadmium and lead concentrations are attributed to native soil conditions at the site. The proposed site investigation will be completed following the approval of this form and is tentatively scheduled for commencement on 08/15/2025.

Pursuant to Rule 913.e, 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: Allan Engelhardt

Title: Environmental Consultant

Submit Date: 07/10/2025

Email: aengelhardt@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: 33221

COA Type

Description

COA Type	Description
1 COA	Attachment Doc #404273533 has J (J = Indicates an estimated value) for Naphthalene, Benzo (a) Anthracene, Benzo (b) Fluoranthene, Benzo (k) Fluoranthene, Chrysene and Indeno (1,2,3-cd) Pyrene. Operator shall provide explanation is Supplemental Form 27.

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
404269716	INVESTIGATION/REMEDATION WORKPLAN (SUPPLEMENTAL)
404273533	SITE INVESTIGATION REPORT
404273769	SITE INVESTIGATION PLAN
404273770	LABORATORY ANALYTICAL REPORT
404304495	FORM 27-SUPPLEMENTAL-SUBMITTED

Total Attach: 5 Files

General Comments

<u>User Group</u>	<u>Comment</u>	<u>Comment Date</u>
Environmental	Operator states: "A supplemental site investigation (SSI) will be completed to confirm barium, cadmium, and lead concentrations observed at soil sample locations BH05@1-2', BH05@4.5-5.5', SEP01-FL03@3', AST01@1', and AST02@1'. Concurrently with the SSI, additional background samples will be collected to determine if pH, barium, cadmium and lead concentrations are attributed to native soil conditions at the site. The proposed site investigation will be completed following the approval of this form and is tentatively scheduled for commencement on 08/15/2025."	08/04/2025

Total: 1 comment(s)