

State of Colorado
Energy & Carbon Management Commission

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Document Number:
404547328

Receive Date:

Report taken by:

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
Address: <u>1099 18TH STREET SUITE 1500</u>		Phone: <u>(970) 304-5000</u>
City: <u>DENVER</u> State: <u>CO</u> Zip: <u>80202</u>		Mobile: <u>()</u>
Contact Person: <u>Erica Zuniga</u>	Email: <u>RBUEUF27@chevron.com</u>	

PROJECT, PURPOSE & SITE INFORMATION

PROJECT INFORMATION

Remediation Project #: 39139 Initial Form 27 Document #: 404072510

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>123-13336</u>	County Name: <u>WELD</u>
Facility Name: <u>DUELL 20-1</u>	Latitude: <u>40.386389</u>	Longitude: <u>-104.580833</u>	
** correct Lat/Long if needed: Latitude: _____		Longitude: _____	
QtrQtr: <u>SWNW</u>	Sec: <u>20</u>	Twp: <u>5N</u>	Range: <u>64W</u> Meridian: <u>6</u> Sensitive Area? <u>Yes</u>
Facility Type: <u>SPILL OR RELEASE</u>	Facility ID: <u>491626</u>	API #: _____	County Name: <u>WELD</u>
Facility Name: <u>Duell 20-1</u>	Latitude: <u>40.386404</u>	Longitude: <u>-104.581053</u>	
** correct Lat/Long if needed: Latitude: _____		Longitude: _____	
QtrQtr: <u>SWNW</u>	Sec: <u>20</u>	Twp: <u>5N</u>	Range: <u>64W</u> Meridian: <u>6</u> Sensitive Area? <u>Yes</u>

SITE CONDITIONS

General soil type - USCS Classifications SW _____

Most Sensitive Adjacent Land Use Grassland _____

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? No _____

Other Potential Receptors within 1/4 mile

Freshwater Pond 0.09mi E, 0.14mi W
Residential 0.13/0.21/0.23mi SW
Farm Structure 0.07/0.08/0.22/0.23/0.24mi SW, 0.08/0.1/0.12mi W

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 and 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.

Pursuant to ECMC Rule 911 a site investigation was conducted pertaining to the Duell 20-1 wellhead cut and cap. The wellhead was cut and capped per ECMC rules. Laboratory analytical results indicated a historical release occurred at the decommissioned wellhead. Please refer to the operator comments for additional information regarding the historical release and remedial efforts conducted at the wellhead.

Approximately 731' of flowline was temporarily abandoned in place due to field constraints but will be removed. Soil samples will be taken along the flowline at any points of material change and/or hammer unions, directional changes, as well as at the bell holes on either side of a waterway. The flowline abandonment verification F44 was submitted under document number 404298768 and is included in related forms.

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):

A soil sample was collected at the base of the excavation soil samples were field screened at the N-E-S-W sides of the wellhead during C&C. Soil samples were taken from sidewalls and base of the final extents of the excavation at the wellhead. Soil samples will be taken along the flowline at any points of material change and/or hammer unions, directional changes, as well as at the bell holes on either side of a waterway. Soil samples will be analyzed by a certified lab 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. Background samples will be analyzed for analysis of metals per ECMC Table 915-1 and soil suitability parameters including pH, EC, SAR, and boron. All samples collected will be analyzed by a certified lab using approved ECMC lab 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, a grab groundwater sample will be collected and analyzed for all organic and inorganic compounds per ECMC Table 915-1; this sample analysis includes, but is not limited to BTEX, naphthalene, 1,2,4-trimethylbenzene (TMB), and 1,3,5-TMB, chloride and sulfate anions and total dissolved solids (TDS).

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 flowline areas 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 ECMC Flowline Closure Checklists will be utilized and filled out during the abandonment process.

SITE INVESTIGATION REPORT

SAMPLE SUMMARY

Soil

Number of soil samples collected 5
Number of soil samples exceeding 915-1 4
Was the areal and vertical extent of soil contamination delineated? No
Approximate areal extent (square feet) 141

NA / ND

ND Highest concentration of TPH (mg/kg) _____
-- Highest concentration of SAR 1.93
BTEX > 915-1 No
Vertical Extent > 915-1 (in feet) 8

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?

6 site specific background soil samples collected from approximately 4 ft., and 8 ft-bgs from 6 soil borings (BKG01 through BKG03) and were submitted for analysis of pH, EC, SAR, and total metals (Table 915-1 List) by ECMC approved methods.

All analytical results for soil samples submitted for analysis are compliant with their respective Table 915-1 GWSSLs or 1.25x the highest background concentrations for arsenic (9.46 mg/kg), barium (229 mg/kg), chromium (VI) (0.261 mg/kg), lead (27.6 mg/kg), and selenium (0.746mg/kg) except for pH (8.49) in soil sample EX01@8 and chromium (VI) in soil samples EX03@4 (0.278 mg/kg), EX04@4 (0.329 mg/kg), and EX05@4 (0.451 mg/kg).

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?

PDC proposes to conduct background soil sampling from boring locations at similar depths and soil horizons as confirmation soil samples, in areas away from oil and gas infrastructure to further investigate residual inorganic concentrations in soil at the site.

The flowline was temporarily abandoned in place due to field constraints. Flowline decommissioning activities will be completed by another Chevron business partner and will be summarized in a subsequent Supplemental Form 27 submittal.

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.

On November 11, 2025, excavation was conducted to remove the impacted soil at the former Duell 20-1 wellhead. Four confirmation soil samples (EX02 through EX05) were collected from the sidewalls of the excavation from approximately 4 ft-bgs and one confirmation soil sample (EX01) was collected from the floor of the excavation from approximately 8 ft-bgs. The final extent of the excavation was approximately 10 feet by 13 feet to a total depth of 8 ft-bgs. Approximately 40 cubic yards of presumably impacted soil were removed and hauled off site for disposal under PDC manifest to Waste Management's North Weld Landfill in Ault, Colorado in accordance with Rules 905 and 906. Copies of the waste manifests are available upon request.

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.

The impacted soil was excavated and hauled offsite to a permitted disposal facility. Please refer to the Operator Comments section of this Form 27 for additional discussion.

Soil Remediation Summary

In Situ

Ex Situ

_____ Bioremediation (or enhanced bioremediation)

Yes _____ Excavate and offsite disposal

_____ Chemical oxidation

If Yes: Estimated Volume (Cubic Yards) _____ 40

_____ 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 excavation of the wellhead or flowline during decommissioning 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 SSIP, Remediation Progress Report

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 11 requirements of Rule 705.b. Operator does not anticipate making an insurance claim for this project.

Further investigation of soil 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:

No beneficial use

Volume of E&P Waste (solid) in cubic yards 40

E&P waste (solid) description Hydrocarbon impacted soils

ECMC Disposal Facility ID #, if applicable: _____

Non-ECMC Disposal Facility: Waste Management's North Weld Landfill in Ault, Colorado

Volume of E&P Waste (liquid) in barrels 0

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? No

Does the previous reply indicate consideration of background concentrations? _____

Does Groundwater meet Table 915-1 standards? Yes

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? No

If YES, does the seed mix comply with local soil conservation district recommendations? _____

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

SITE RECLAMATION DATES

Proposed date of commencement of Reclamation. 04/25/2025

Proposed date of completion of Reclamation. 04/25/2027

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. 04/25/2025

Actual Spill or Release date, or date of discovery. 04/28/2025

SITE INVESTIGATION DATES

Date of Initial Actions described in Site Investigation Plan (start date). 04/25/2025

Proposed site investigation commencement. 04/25/2025

Proposed completion of site investigation. 10/31/2026

REMEDIAL ACTION DATES

Proposed start date of Remediation. 11/25/2025

Proposed date of completion of Remediation. 12/15/2025

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 necessity for site investigation activities adjacent to the wellhead and the flowline.

OPERATOR COMMENT

This Supplemental Form 27 is being submitted to summarize the source removal activities conducted at the former wellhead at the former Duell 20-1 wellhead (REM# 39139).

Initial facility closure activities and confirmation soil sampling at the former Duell 20-1 wellhead occurred on April 25, 2025. Hydrocarbon impacted soils were identified at the wellhead during facility closure activities and was reported as historic release in Form 19 (Document Number 404180109). Excavation was conducted and the identified impacted soil was removed and transported offsite for disposal at a properly permitted waste facility.

All analytical results for soil samples submitted for analysis are compliant with their respective Table 915-1 GWSSLs or 1.25x the highest background concentrations for arsenic (9.46 mg/kg), barium (229 mg/kg), chromium (VI) (0.261 mg/kg), lead (27.6 mg/kg), and selenium (0.746mg/kg) except for pH (8.49) in soil sample EX01@8 and chromium (VI) in soil samples EX03@4 (0.278 mg/kg), EX04@4 (0.329 mg/kg), and EX05@4 (0.451 mg/kg).

Initial facility closure activities along the flowline were also conducted on April 25, 2025. PDC was informed by the laboratory that the sample holding times were exceeded for various Table 915-1 constituents. Resampling along the flowline will be conducted.

Additional facility closure activities along the flowline will be conducted by another Chevron business partner and will be summarized in a subsequent Supplemental Form 27 submittal.

PDC proposes to conduct background soil sampling from boring locations at similar depths and soil horizons as confirmation soil samples, in areas away from oil and gas infrastructure to further investigate residual inorganic concentrations in soil at the wellhead. Please refer to Figure 2 for proposed background sample locations.

Pursuant to Rule 913.e, quarterly reporting will continue for the location until data indicates no further action is warranted.

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

Signed: Lindsey Blankenship

Title: Project Geologist

Submit Date: _____

Email: chevronfr@entradainc.com

Based on the information provided herein, this Application for Site Investigation and Remediation Workplan complies with ECOMC Rules and applicable orders and is hereby approved.

ECMC Approved: _____

Date: _____

Remediation Project Number: 39139

COA Type

Description

0 COA	
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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

404547464	REMEDATION PROGRESS REPORT
404547472	LABORATORY ANALYTICAL REPORT
404547473	LABORATORY ANALYTICAL REPORT

Total Attach: 3 Files

General Comments

User Group

Comment

Comment Date

		Stamp Upon Approval
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Total: 0 comment(s)