

# State of Colorado Oil and Gas Conservation Commission

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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 COGCC 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>	<b>Phone Numbers</b>
Address: <u>1775 SHERMAN STREET - STE 3000</u>		Phone: <u>(970) 313-5582</u>
City: <u>DENVER</u>	State: <u>CO</u>	Zip: <u>80203</u>
Contact Person: <u>Jason Davidson</u>	Email: <u>COGCCSpillRemediation@pdce.com</u>	Mobile: <u>( )</u>

### PROJECT, PURPOSE & SITE INFORMATION

#### PROJECT INFORMATION

Remediation Project #: 15473 Initial Form 27 Document #: 402380471

#### 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: Director Request

#### SITE INFORMATION

☐ Yes ☐ Multiple Facilities

Facility Type: <u>NONFACILITY</u>	Facility ID: <u>475912</u>	API #: <u></u>	County Name: <u>WELD</u>
Facility Name: <u>Morales Water Well</u>		Latitude: <u>40.007119</u>	Longitude: <u>-104.798120</u>
** correct Lat/Long if needed: Latitude: <u></u>		Longitude: <u></u>	
QtrQtr: <u>NWSE</u>	Sec: <u>32</u>	Twp: <u>1N</u>	Range: <u>66W</u>
Meridian: <u></u>		Sensitive Area? <u>Yes</u>	

#### SITE CONDITIONS

General soil type - USCS Classifications SC Most Sensitive Adjacent Land Use Rural residential properties

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

**SITE INVESTIGATION PLAN****TYPE OF WASTE:**
☐ E&P Waste
 ☒ Other E&P Waste
 ☒ Non-E&P Waste

☐ Produced Water
 ☐ Workover Fluids
 ☐ Not applicable

☐ Oil
 ☐ Tank Bottoms

☐ Condensate
 ☐ Pigging Waste

☐ Drilling Fluids
 ☐ Rig Wash

☐ Drill Cuttings
 ☐ Spent Filters

☐ Pit Bottoms

☒ Other (as described by EPA)
 ☐ Methane
**DESCRIPTION OF IMPACT**

Impacted?	Impacted Media	Extent of Impact	How Determined
Yes	GROUNDWATER	Unknown	Ongoing Site Investigation

**INITIAL ACTION SUMMARY**

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

Please refer to the Initial Form 27 Investigation/Workplan Document #402380471 and to the Supplemental Form 27 Investigation/Workplan Document #402444533 for a summary of the initial actions conducted.

**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 ):
**Proposed Groundwater Sampling**
☒ Will groundwater samples be collected as part of this investigation? ( Number, analyses, and locations of samples ):

Second quarter 2022 System sampling and maintenance will be conducted at the Division of Water Resources (DWR) Well Permit #137465 in May 2022 and at the DWR Well Permit #268360 in June 2022. Please refer to the Groundwater Monitoring section of the Remedial Action Plan tab of this Form 27 for additional discussion.

**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 ):
**SITE INVESTIGATION REPORT****SAMPLE SUMMARY**

**Soil**

Number of soil samples collected 0  
Number of soil samples exceeding 915-1 \_\_\_\_\_  
Was the areal and vertical extent of soil contamination delineated? \_\_\_\_\_  
Approximate areal extent (square feet) \_\_\_\_\_

**NA / ND**

\_\_\_\_\_ Highest concentration of TPH (mg/kg) \_\_\_\_\_  
\_\_\_\_\_ Highest concentration of SAR \_\_\_\_\_  
\_\_\_\_\_ BTEX > 915-1 \_\_\_\_\_  
\_\_\_\_\_ Vertical Extent > 915-1 (in feet) \_\_\_\_\_

**Groundwater**

Number of groundwater samples collected 1  
Was extent of groundwater contaminated delineated? No  
Depth to groundwater (below ground surface, in feet) 374'  
Number of groundwater monitoring wells installed 0  
Number of groundwater samples exceeding 915-1 1

ND \_\_\_\_\_ Highest concentration of Benzene (µg/l) \_\_\_\_\_  
ND \_\_\_\_\_ Highest concentration of Toluene (µg/l) \_\_\_\_\_  
ND \_\_\_\_\_ Highest concentration of Ethylbenzene (µg/l) \_\_\_\_\_  
ND \_\_\_\_\_ Highest concentration of Xylene (µg/l) \_\_\_\_\_  
-- \_\_\_\_\_ Highest concentration of Methane (mg/l) 26

**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?

☐ 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?

**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.

Not applicable

**REMEDIAL ACTION 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.

Between July 10 and August 5, 2020, a methane mitigation system was installed at the property associated with the DWR Well Permit #137465. The system became operational on August 6, 2020.

Between August 6 and August 28, 2020, a methane mitigation system was installed at the property associated with the DWR Well Permit #268360. The system became operational on August 28, 2020.

**Soil Remediation Summary**

☐ In Situ

☐ Ex Situ

\_\_\_\_\_ Bioremediation ( or enhanced bioremediation )

\_\_\_\_\_ Excavate and offsite disposal

\_\_\_\_\_ Chemical oxidation  
\_\_\_\_\_ Air sparge / Soil vapor extraction  
\_\_\_\_\_ Natural Attenuation  
\_\_\_\_\_ Other \_\_\_\_\_

If Yes: Estimated Volume (Cubic Yards) \_\_\_\_\_

Name of Licensed Disposal Facility or COGCC 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  
Yes \_\_\_\_\_ Other \_\_\_\_\_ Methane mitigation system \_\_\_\_\_

### **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.

Tasman Geosciences, under the direction of PDC Energy, Inc., collects water samples from the influent and effluent process streams of the methane mitigation systems installed on DWR Well Permit #137465 and #268360 on a quarterly basis and submits them to Summit Scientific Laboratories for analysis of dissolved gases by EPA Method RSK 175. In addition, the samples collected from the influent process streams are submitted to Dolan Integration Group (DIG) for hydrocarbon gas composition and stable isotopes analysis. Please refer to the attached 1Q22 Groundwater Monitoring Reports associated with DWR Well Permit #137465 and #268360 for a summary of the first quarter 2021 sampling event.

Second quarter 2022 System sampling and maintenance will be conducted at the DWR Well Permit #137465 in May 2022 and at the DWR Well Permit #268360 in June 2022.

## 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

### 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

COGCC Disposal Facility ID #, if applicable:

Non-COGCC Disposal Facility:

Volume of E&P Waste (liquid) in barrels

E&P waste (liquid) description

COGCC Disposal Facility ID #, if applicable:

Non-COGCC 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 COGCC 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.

Not applicable

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. \_\_\_\_\_

Proposed date of completion of Reclamation. \_\_\_\_\_

## 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. \_\_\_\_\_

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

### **SITE INVESTIGATION DATES**

Date of Initial Actions described in Site Investigation Plan (start date). 03/11/2020

Proposed site investigation commencement. 03/11/2020

Proposed completion of site investigation. 08/28/2020

### **REMEDIAL ACTION DATES**

Proposed start date of Remediation. 07/10/2020

Proposed date of completion of Remediation. \_\_\_\_\_

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:

**OPERATOR COMMENT**

PDC has closed on the acquisition of Great Western Petroleum, LLC and certain of its subsidiaries, including Great Western Operating Company, LLC (Operator # 10110) ("GWOC"). The effective date of the acquisition is May 6th, 2022. Subsequent to the acquisition, GWOC will merge with and into PDC, and PDC will become the operator of all properties formerly operated by GWOC, effective May 31, 2022.

PDC requests that COGCC Remediation Project #15473, assigned to GWOC, be closed. Work on this project will continue under COGCC Remediation Project #15469, assigned to PDC as the Responsible Operator.

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

Signed: Jason Davidson

Title: Senior EHS Specialist

Submit Date:

Email: COGCCSpillRemediation@pdce.com

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

COGCC Approved:

Date:

Remediation Project Number: 15473

**COA Type****Description**

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**Attachment Check 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**

403058773	MONITORING REPORT
403058774	MONITORING REPORT

Total Attach: 2 Files

**General Comments****User Group****Comment****Comment Date**

		Stamp Upon Approval
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Total: 0 comment(s)