

# State of Colorado Oil and Gas Conservation Commission

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402802939

Receive Date:

09/07/2021

Report taken by:

Kari Brown

## Site Investigation and Remediation Workplan (Initial 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>(303) 860-5800</u>
City: <u>DENVER</u>	State: <u>CO</u>	Zip: <u>80203</u>
Contact Person: <u>Karen Olson</u>	Email: <u>COGCCSpillRemediation@pdce.com</u>	Mobile: <u>( )</u>

### PROJECT, PURPOSE & SITE INFORMATION

#### PROJECT INFORMATION

Remediation Project #: 20088 Initial Form 27 Document #: 402802939

#### 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>WELL</u>	Facility ID: _____	API #: <u>123-20012</u>	County Name: <u>WELD</u>
Facility Name: <u>RORY 1</u>	Latitude: <u>40.295302</u>	Longitude: <u>-104.841124</u>	
** correct Lat/Long if needed: Latitude: _____		Longitude: _____	
QtrQtr: <u>NESW</u>	Sec: <u>24</u>	Twp: <u>4N</u>	Range: <u>6W</u>
Meridian: <u>6</u>	Sensitive Area? <u>Yes</u>		

#### SITE CONDITIONS

General soil type - USCS Classifications SM Most Sensitive Adjacent Land Use Riparian

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 - 821 feet NE, Surface Water: South Platte River - 450 feet SE, Occupied Buildings - 785 feet W, FWS Wetlands: surrounded by varying types and sizes of wetlands, closest being Herbaceous Riparian Habitat (Rp1EM) - 97 feet SE; HPH: located within mule deer migration corridor and mule deer severe winter range - 0 feet, Aquatic Native Species Conservation Water - 269 feet S

Flowline conflict likely as wellhead and flowline are both located within a mule deer migration corridor and a mule deer severe winter range and are located in-between Bald Eagle Communal Roost and 1/2-mile bound of Bald Eagle Active Nest Site (but not within 1/4-mile of either)

# 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	SOILS	TBD	Confirmation Soil Sampling

## 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 COGCC Rule 911, this form serves as notification for the abandonment of the Rory 1 wellhead and removal of the associated flowline. The ground and sub-surfaces will be visually inspected for hydrocarbon impacts during abandonment activities. Field observations and photo documentation will be recorded in a field inspection form for submittal to the COGCC.

## 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 ):

Soil samples will be collected from the surface in cardinal directions of the wellhead, as defined in the Rule 911.a.(4) guidance document (1/4/21), for field screening purposes. Discrete soil samples will be collected for laboratory analysis either in any area of observed hydrocarbon impacts, or adjacent to the cut and capped wellhead from native material and below the flowline riser. GPS data will be collected for all soil sample locations. Soil samples will be submitted for laboratory for analysis of Organic Compounds in Soil, TPH (C6-C36), and Soil Suitability for Reclamation by COGCC approved methods. Refer to the Wellhead and Flowline Location Map. A sample location figure will be provided in the Supplemental Form 27.

### 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.

### 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 ):

Assessments will be conducted during the removal of this off-location flowline (estimated to be 490 feet in length) approximately every 250 feet and at the flowline endcaps. Additional assessments will be conducted in the areas where the flowline is in close proximity to sensitive areas, such as High Priority Habitats and FWS wetlands that are observed in each direction. The flowline and adjacent sub-surface will be inspected for any visual and olfactory indicators of potential failure and hydrocarbon impacts. Soils will be field screened below the flowline and if suspected impacts are observed, a soil sample will be collected for an initial assessment and submitted for laboratory analysis of BTEX, naphthalene, 1,2,4-TMB, 1,3,5-TMB, and TPH (C6-C36). If analytical results indicate the presence of organic compound concentrations, the sample will be analyzed for the full Table 915-1 suite. GPS data and photo documentation will be recorded for each inspection/sample location.

# SITE INVESTIGATION REPORT

## SAMPLE SUMMARY

Soil

NA / ND

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) \_\_\_\_\_

\_\_\_\_\_ 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 \_\_\_\_\_ 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?

☐ 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

### SOURCE REMOVAL SUMMARY

Describe how source is to be removed.

Any hydrocarbon impacted material will be transported off-site to a licensed disposal facility in accordance with Rules 905 and 906.

### REMEDIATION 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.

If reportable hydrocarbon impacts, as defined in Rule 912.b., are discovered, a site-specific remediation plan will be developed and submitted via a Supplemental Form 27. If reportable impacts are not encountered, a Supplemental Form 27 closure request will be submitted within 90 days of abandonment and/or decommissioning activities.

### Soil Remediation Summary

☐ In Situ

☐ Ex Situ

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

\_\_\_\_\_ Chemical oxidation

\_\_\_\_\_ Air sparge / Soil vapor extraction

\_\_\_\_\_ Natural Attenuation

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

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

\_\_\_\_\_ Name of Licensed Disposal Facility or COGCC Facility ID # \_\_\_\_\_

\_\_\_\_\_ 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.

## **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? \_\_\_\_\_

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: \_\_\_\_\_

# 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 COGCC 1004 Series Rules.

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. 07/29/2021

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

### **SITE INVESTIGATION DATES**

Date of Initial Actions described in Site Investigation Plan (start date). 09/27/2021

Proposed site investigation commencement. 09/27/2021

Proposed completion of site investigation. \_\_\_\_\_

### **REMEDIAL ACTION DATES**

Proposed start date of Remediation. \_\_\_\_\_

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**

This Form 27 serves as notification for the abandonment of the Rory 1 wellhead and removal of the associated flowline. Abandonment activities are planned to begin the week of September 27, 2021. This schedule may be adjusted due to unforeseen circumstances, delays, and/or changes in weather.

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

Signed: Karen Olson

Title: Senior Program Manager

Submit Date: 09/07/2021

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: Kari Brown

Date: 09/23/2021

Remediation Project Number: 20088

**Condition of Approval****COA Type****Description**

	Mapped flowline runs through a jurisdictional Wetland as mapped on the National Wetland Inventory Maps. Operator shall confirm flowline integrity through the wetland area or conduct environmental investigation to confirm the absence of impacts in the area. In the event that operations impact or encroach on the wetland, Operator shall consult with the US Army Corps of Engineers regarding compliance with Sections 401 and 404 of the Clean Water Act. Operator shall submit all communications/permits obtained to the COGCC via Form 4 Sundry.
	Operator will collect confirmation soil samples adjacent to the wellhead and within undisturbed soils. Operator will analyze soil samples for TPH (C6-C36), Table 915-1 Organic Compounds in Soil and Table 915-1 Soil Suitability for Reclamation (Electrical conductivity, Sodium adsorption ratio, and pH by saturated paste method, boron (hot water soluble)).
	Location lies within the following mapped High Priority Habitats: - Mule Deer Migration Corridor - Mule Deer Severe Winter Range Please note that Approval of this Form 27 does not supersede any Federal, State or Local regulations. COGCC recommends consultation with Colorado Parks and Wildlife.
3 COAs	

**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**

402802939	FORM 27-INITIAL-SUBMITTED
402802940	SITE MAP

Total Attach: 2 Files

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

		Stamp Upon Approval
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Total: 0 comment(s)