

State of Colorado  
Oil and Gas Conservation Commission

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403306172  
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Report taken by:  
Laurel Anderson

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>KERR MCGEE OIL &amp; GAS ONSHORE LP</u>	Operator No: <u>47120</u>	<b>Phone Numbers</b> Phone: <u>(970) 336-3500</u> Mobile: <u>(970) 515-1698</u>
Address: <u>P O BOX 173779</u>		
City: <u>DENVER</u> State: <u>CO</u> Zip: <u>80217-3779</u>		
Contact Person: <u>Gregory Hamilton</u> Email: <u>gregory_hamilton@oxy.com</u>		

PROJECT, PURPOSE & SITE INFORMATION

PROJECT INFORMATION

Remediation Project #: 25336 Initial Form 27 Document #: 403186801

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>123-10411</u>	County Name: <u>WELD</u>
Facility Name: <u>BERRY 1</u>	Latitude: <u>40.243690</u>	Longitude: <u>-104.908600</u>	
** correct Lat/Long if needed: Latitude: _____		Longitude: _____	
QtrQtr: <u>SENE</u>	Sec: <u>8</u>	Twp: <u>3N</u>	Range: <u>67W</u> Meridian: <u>6</u> Sensitive Area? <u>Yes</u>

Facility Type: <u>SPILL OR RELEASE</u>	Facility ID: <u>483097</u>	API #: _____	County Name: <u>WELD</u>
Facility Name: <u>Berry 1 Wellhead</u>	Latitude: <u>40.243690</u>	Longitude: <u>-104.908600</u>	
** correct Lat/Long if needed: Latitude: _____		Longitude: _____	
QtrQtr: <u>SENE</u>	Sec: <u>8</u>	Twp: <u>3N</u>	Range: <u>67W</u> Meridian: <u>6</u> Sensitive Area? <u>Yes</u>

## **SITE CONDITIONS**

General soil type - USCS Classifications OH

Most Sensitive Adjacent Land Use Crop land

Is domestic water well within 1/4 mile? No

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**

# 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
Yes	SOILS	19' (N-S) x 20' (E-W) w 6' bgs	inspection/soil samples/laboratory analytical results

## INITIAL ACTION SUMMARY

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

Wellhead cut and cap operations were completed at the Berry 1 wellhead on October 17, 2022. Groundwater was not encountered in the wellhead cut and cap or flowline removal pothole excavation areas. Visual inspection and field screening of soils around the well and associated pumping equipment was conducted following wellhead cut and cap operations, and soil samples (WH-B01@6', WH-S01@5', WH-W01@5') were submitted for laboratory analysis to determine if a release occurred. Laboratory analytical results indicated that naphthalene, total petroleum hydrocarbons (TPH), pH, 1-methylnaphthalene, benzo(a)anthracene, arsenic, barium, and lead impacts exceeding COGCC Table 915-1 were present at the former wellhead location. As such, a Form 19-Initial/Supplemental Spill/Release Report (COGCC Document No. 403200981) was submitted on October 19, 2022, and the COGCC issued Spill/Release Point ID 483097. Removal activities for the flowline associated with this wellhead still need to be completed. Soil samples were collected from the locations where the flowline riser was disconnected at the wellhead (FL-B01@4') and separator (FL-B02@3') and submitted for laboratory analysis to determine if a release occurred. Laboratory analytical results indicated that flowline soil samples FL-B01@4' and FL-B02@3' were in compliance with the COGCC Table 915-1 standards. A topographic Site Location Map showing the geographic setting of the site location is provided as Figure 1. Soil sample location and field screening data are presented in Table 1. The soil sample and field screening locations are illustrated on Figures 2 and 3. The field notes and a photographic log are provided as Attachment B.

## 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 ):

On October 17, 2022, historical soil impacts were discovered following cut and cap operations at the Berry 1 wellhead location. Excavation and assessment activities are ongoing. Soil analytical results are summarized in Tables 2 through 5. The laboratory analytical report is provided as Attachment A.

### Proposed Groundwater Sampling

Will groundwater samples be collected as part of this investigation? ( Number, analyses, and locations of samples ):

Groundwater was not encountered during wellhead cut and cap activities.

### 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 ):

On October 17, 2022, soil screening was conducted at 4 locations at the ground surface adjacent to the excavation. Based on the screening results, no soil samples were submitted from these areas in accordance with COGCC Guidance. On October 19, 2022, a soil gas survey was conducted at 5 soil vapor points (SVP01 - SVP05) installed adjacent to the former wellhead. GEM 5000 field readings indicated that methane was present, and soil vapor samples were subsequently collected from all 5 SVPs. Results from the gas composition analysis indicated that the detected methane was biogenic, and no further investigation is needed. The SVP locations are shown on Figure 1; SVP screening results are presented in Table 6; the SVP lab report is included in Attachment A.

# SITE INVESTIGATION REPORT

## SAMPLE SUMMARY

### Soil

Number of soil samples collected 13  
Number of soil samples exceeding 915-1 3  
Was the areal and vertical extent of soil contamination delineated? Yes  
Approximate areal extent (square feet) 380

### NA / ND

-- Highest concentration of TPH (mg/kg) 983.0  
8  
-- Highest concentration of SAR 1  
BTEX > 915-1 No  
Vertical Extent > 915-1 (in feet) 6

### 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?

Background soil samples WH-BG01@3'-WH-BG03@3', WH-BG01@6'-WH-BG03@6' were collected from native material adjacent to the wellhead cut and cap excavation. The background soil samples were submitted for laboratory analysis of the soil suitability for reclamation parameters and Table 915-1 metals using standard methods appropriate for detecting target analytes in Table 915-1. Analytical results for the background soil samples are presented in Table 3 and 5.

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?

Due to simultaneous operations being completed at the site, excavation and assessment activities are currently on hold. Excavation and assessment activities will continue following completion of the current operations.

## 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.

Due to simultaneous operations being completed at the site, excavation and assessment activities are currently on hold. Excavation and assessment activities will continue following completion of the current operations. Soils will be removed and transported to a licensed disposal facility. Disposal records will be kept on file and 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.

Due to simultaneous operations being completed at the site, excavation and assessment activities are currently on hold. Excavation and assessment activities will continue following completion of the current operations.

### Soil Remediation Summary

In Situ

- \_\_\_\_\_ Bioremediation ( or enhanced bioremediation )
- \_\_\_\_\_ Chemical oxidation
- \_\_\_\_\_ Air sparge / Soil vapor extraction
- \_\_\_\_\_ Natural Attenuation
- \_\_\_\_\_ Other \_\_\_\_\_

Ex Situ

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

## 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.

KMOG has sufficient insurance and bonding to fully address the anticipated costs of Remediation, including the remaining estimated costs for this project. KMOG currently has over 40 million in bonds with the Colorado Oil and Gas Conservation Commission. The cost for remediation is a preliminary estimate only, costs may change upwards or downwards based on site-specific information. KMOG makes no representation or guarantees as to the accuracy of the preliminary estimate.

Operator anticipates the remaining cost for this project to be: \$ 15500 \_\_\_\_\_

## 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: \_\_\_\_\_

# 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 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.

The site will be reclaimed in accordance with COGCC 1000 Series Reclamation 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. 08/11/2022

Actual Spill or Release date, or date of discovery. 10/19/2022

### SITE INVESTIGATION DATES

Date of Initial Actions described in Site Investigation Plan (start date). 10/17/2022

Proposed site investigation commencement. 10/17/2022

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

### REMEDIAL ACTION DATES

Proposed start date of Remediation. 10/17/2022

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**

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

Signed: Gregory Hamilton

Title: Environmental Consultant

Submit Date: 02/02/2023

Email: gregory\_hamilton@oxy.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: Laurel Anderson

Date: 04/20/2023

Remediation Project Number: 25336

**COA Type****Description**

	Operator shall populate the Waste Disposal Information and Soil Remediation Summary sections of the subsequent Supplemental Form 27.
	Operator shall fully populate the implementation schedule to include Proposed date of completion of site investigation and remediation in accordance with Rule 913.d on the next Form 27.
	In accordance with 913.d.(1), Operator will investigate impacts to soil, Groundwater, and surface water as soon as the impacts are discovered. Operator has not provided a timeframe for when site investigation and remediation activities are expected to resume.
	pH of 8.93 is not within the acceptable range of soil variability (background between 7.98-8.37). Operator will continue to analyze confirmation soil samples for pH until fully delineated.
	In accordance with Rule 913.e.(3), Operator will adopt a quarterly reporting schedule. COGCC selected Quarterly under Remediation Progress Update.
	Operator shall provide a comprehensive list of all potential receptors within ¼ mile on the subsequent Supplemental Form 27.  Note: Flowline lies adjacent to a jurisdictional Wetland as mapped on the National Wetland Inventory Maps. In the event that operations encroach upon 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.
6 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.

<b>Att Doc Num</b>	<b>Name</b>
403306172	FORM 27-SUPPLEMENTAL-SUBMITTED
403306387	OTHER
403306388	SITE MAP
403306391	SOIL SAMPLE LOCATION MAP
403306392	SOIL SAMPLE LOCATION MAP
403306396	ANALYTICAL RESULTS
403309308	ANALYTICAL RESULTS

Total Attach: 7 Files

**General Comments**

<u>User Group</u>	<u>Comment</u>	<u>Comment Date</u>
Environmental	COGCC added Form 19i/s Doc #403200981 and Form 44 Doc #403185984.to the Related Forms.	04/11/2023
Environmental	COGCC added Spill ID 483097 and selected Rule 913.c.(3): Remediation of Spill and Releases pursuant to Rule 912. in addition to the current selection.	04/11/2023

Total: 2 comment(s)