

State of Colorado  
Energy & Carbon Management Commission

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Document Number:  
403803077

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: KERR MCGEE OIL & GAS ONSHORE LP	Operator No: 47120	Phone Numbers
Address: P O BOX 173779		
City: DENVER	State: CO	Zip: 80217-3779
Contact Person: Macy Kiel	Email: DJRemediation_Forms@oxy.com	Phone: (970) 515-1110
		Mobile: ( )

PROJECT, PURPOSE & SITE INFORMATION

PROJECT INFORMATION

Remediation Project #: 25564 Initial Form 27 Document #: 403185605

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: TANK BATTERY	Facility ID: 443584	API #:	County Name: WELD
Facility Name: BERRY FARMS TANK BATTERY 31N-8HZ	Latitude: 40.245340	Longitude: -104.910008	
** correct Lat/Long if needed: Latitude:		Longitude:	
QtrQtr: NWNE	Sec: 8	Twp: 3N	Range: 67W Meridian: 6 Sensitive Area? Yes

Facility Type: SPILL OR RELEASE Facility ID: 483224 API #: \_\_\_\_\_ County Name: WELD  
Facility Name: Berry Farms 30 31 32-8HZ O SA Latitude: 40.245340 Longitude: -104.910008  
\*\* correct Lat/Long if needed: Latitude: \_\_\_\_\_ Longitude: \_\_\_\_\_  
QtrQtr: NWNE Sec: 8 Twp: 3N Range: 67W Meridian: 6 Sensitive Area? Yes

**SITE CONDITIONS**

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

Is domestic water well within 1/4 mile? No Is surface water within 1/4 mile? No

Is groundwater less than 20 feet below ground surface? Yes

**Other Potential Receptors within 1/4 mile**

Domestic water well: none  
Surface water: none  
Wetlands: none  
Springs: none  
Livestock: none  
Occupied building: approximately 950' N  
High Priority Habitat: none

# 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
No	GROUNDWATER	No groundwater encountered	groundwater samples/laboratory analytical results
Yes	SOILS	5' (N-S) x 5' (E-W) x 1.5' 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.

Decommissioning activities were completed at the Berry Farms 30 31 32-8HZ O SA production facility on October 31, 2022, through November 2, 2022. Groundwater was not encountered during decommissioning activities. Visual inspection and field screening of soils at eight separators, one meter house, one emissions control device (ECD), one produced water vessel (PWV), and one above ground storage tank (AST) was conducted following removal activities and soil samples (SEP-B01@3" - SEP-B16@3", PW-N01@2', PW-B01@4', and AST-B01@3") were submitted for laboratory analysis to determine if a release occurred. Laboratory analytical results indicated soil samples AST-B01@3", SEP-B04@3", SEP-B05@3", and SEP-B15@3" contained pH, boron, sodium adsorption ratio (SAR), arsenic, copper, selenium, and/or naphthalene concentrations that exceeded the applicable ECMC Table 915-1 standards and background limits. As such, a Form 19-Initial/Supplemental Spill/Release Report (ECMC Document No.403217095) was submitted on November 4, 2022, and the ECMC issued Spill/Release Point ID 483224. The remaining analytical results for the soil samples collected were in compliance with ECMC Table 915-1 standards and/or within background limits. 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 is presented in Table 1. The facility soil sample and field screening locations are illustrated on Figures 2 and 3. The laboratory analytical report is provided as Attachment A. The field notes and 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 ):

From October 31, 2022 through November 16, 2022, excavation activities were conducted to address remaining soil impacts at the former AST location and separator locations, and 4 confirmation soil samples were collected from the final excavation extents and submitted for laboratory analysis of benzene, toluene, ethylbenzene, total xylenes, total petroleum hydrocarbons (TPH), naphthalene, 1,2,4-trimethylbenzene (TMB), 1,3,5-TMB, pH, SAR, electrical conductivity (EC), boron, arsenic, copper, and selenium using standard methods appropriate for detecting the target analytes. Analytical results indicated that constituent concentrations in the soil samples collected from the final excavation extents were in compliance with the applicable ECMC Table 915-1 standards and/or within background limits. Soil analytical results are summarized in Tables 2 through 5.

### **Proposed Groundwater Sampling**

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

Groundwater was not encountered during decommissioning 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 31, 2022, through November 2, 2022, visual inspections and field screening of soils was conducted at three sidewalls of the PWV excavation, one former meter house, one former ECD, and one former AST location. Based on the inspection and screening results, hydrocarbon-impacted soils were not observed at the soil screening locations. As a result, no soil samples were submitted for laboratory analysis from these areas in accordance with the ECMC Operator Guidance for Oil & Gas Facility Closure document.

# SITE INVESTIGATION REPORT

## SAMPLE SUMMARY

### Soil

Number of soil samples collected 24  
Number of soil samples exceeding 915-1 4  
Was the areal and vertical extent of soil contamination delineated? Yes  
Approximate areal extent (square feet) 25

### NA / ND

ND Highest concentration of TPH (mg/kg) \_\_\_\_\_  
-- Highest concentration of SAR 52.8  
BTEX > 915-1 No  
Vertical Extent > 915-1 (in feet) 2

### 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 (PW-BG01@3"-PW-BG04@3", PW-BG05@2', PW-BG06@2', PW-BG05@4', PW-BG06@4') were collected from native material adjacent to the produced water vessel excavation. However, per the COA in a previous Form 27-Supplemental (Document No. 403270584) submitted February 13, 2023, these background soil samples were collected from the footprint of the tank battery and should not be included in background determination calculations.

Background soil samples from the Berry 1 wellhead (located approx. 0.5 miles SE) were collected from similar soil type and depth and have been applied. The background soil samples were submitted for laboratory analysis of the Soil Suitability for Reclamation Parameters and ECMC Table 915-1 Metals in Soils using standard methods appropriate for detecting the target analytes. Analytical results for the background soil samples are presented in Tables 3 and 5. Background soil sample locations are illustrated in Figure 4.

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.

Between October 31, 2022 and November 16, 2022, approximately 200 cubic yards of impacted soil was excavated and transported to the Buffalo Ridge Landfill in Keenesburg, Colorado for disposal. The excavation areas will be backfilled and contoured to match pre-existing conditions.

### 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.

Laboratory data indicate that impacted soils in the excavation areas have been remediated to be in compliance with the ECMC Table 915-1 standards and/or within background limits. Groundwater was not encountered in the excavation areas. Based on analytical and soil screening data presented herein, assessment is complete at this site and no further activities are required. As such, Kerr-McGee is requesting an No Further Action (NFA) determination for this location.

**Soil Remediation Summary**

In Situ

Ex Situ

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

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

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

\_\_\_\_\_ If Yes: Estimated Volume (Cubic Yards) \_\_\_\_\_ 200

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

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

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

No \_\_\_\_\_ 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 Final Report

### 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 NFA Request

## 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 Energy and Carbon Management Commission. The cost for remediation is a preliminary estimate only, costs may change upwards or downward 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: \$ 0

## 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:

NA

Volume of E&P Waste (solid) in cubic yards 200

E&P waste (solid) description impacted soil

ECMC Disposal Facility ID #, if applicable:

Non-ECMC Disposal Facility: Buffalo Ridge Landfill in Keenesburg, 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? Yes

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? Yes

Does the previous reply indicate consideration of background concentrations? Yes

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.

The site will be reclaimed in accordance with ECMC 1000 Series Reclamation Rules. Timeliness of reclamation initiation and completion will be subject to NFA, surface owner discretion and land use, and suitable ground conditions which allow for execution of surface reclamation activities so as to not cause unwarranted damages.

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? Yes

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

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

### SITE RECLAMATION DATES

Proposed date of commencement of Reclamation. 08/15/2025

Proposed date of completion of Reclamation. 09/15/2025

## 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. 09/09/2022

Actual Spill or Release date, or date of discovery. 11/02/2022

### SITE INVESTIGATION DATES

Date of Initial Actions described in Site Investigation Plan (start date). 10/31/2022

Proposed site investigation commencement. 10/31/2022

Proposed completion of site investigation. 11/02/2022

### REMEDIAL ACTION DATES

Proposed start date of Remediation. 11/02/2022

Proposed date of completion of Remediation. 11/16/2022

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**

Per the COAs on the approved Form 27-Site Investigation and Remediation Workplan Supplemental (Document No. 403270584), background soil samples (PW-BG01@3"-PW-BG04@3", PW-BG05@2', PW-BG06@2', PW-BG05@4', PW-BG06@4') were collected from the footprint of the tank battery and have not been utilized for to determine background limits. Impacted soil samples AST-B01@3", SEP-B04@3", SEP-B05@3", and SEP-B15@3" have been excavated and confirmation soil samples AST-B03@1.25', SEP-B18@1', SEP-B05@1.5', and SEP-B17@1' were collected from the excavation areas to confirm impacted soil exceeding ECMC Table 915-1 standards and/or background limits have been remediated. Analytical results indicated that constituent concentrations in the soil samples collected from the final excavation extents were in compliance with the applicable ECMC Table 915-1 standards and/or within background limits. Based on analytical and soil screening data presented herein, assessment is complete at this site and no further activities are required. As such, Kerr-McGee is requesting an No Further Action (NFA) determination for this location.

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

Signed: Macy Kiel

Title: HSE Advisor

Submit Date: \_\_\_\_\_

Email: DJRRemediation\_Forms@oxy.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: \_\_\_\_\_

Date: \_\_\_\_\_

Remediation Project Number: 25564

**COA Type****Description**

0 COA	

**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**

403803145	PHOTO DOCUMENTATION
403803151	SITE MAP
403803153	SOIL SAMPLE LOCATION MAP
403803154	SOIL SAMPLE LOCATION MAP
403803155	SOIL SAMPLE LOCATION MAP
403921371	ANALYTICAL RESULTS
403921372	ANALYTICAL RESULTS

Total Attach: 7 Files

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

		Stamp Upon Approval
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Total: 0 comment(s)