

# State of Colorado Oil and Gas Conservation Commission

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Document Number:

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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: KERR MCGEE OIL & GAS ONSHORE LP	Operator No: 47120	Phone Numbers Phone: (720) 929-4306 Mobile: ( )
Address: P O BOX 173779		
City: DENVER	State: CO Zip: 80217-3779	
Contact Person: Erik Mickelson	Email: Erik_Mickelson@oxy.com	

### PROJECT, PURPOSE & SITE INFORMATION

#### PROJECT INFORMATION

Remediation Project #: 22962 Initial Form 27 Document #: 403029142

#### 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: WELL	Facility ID: _____	API #: 123-11297	County Name: WELD
Facility Name: DONALD COOK GU TRUE 1	Latitude: 40.157390	Longitude: -104.731240	
** correct Lat/Long if needed: Latitude: _____		Longitude: _____	
QtrQtr: NWNW	Sec: 12	Twp: 2N	Range: 66W Meridian: 6 Sensitive Area? Yes

  

Facility Type: SPILL OR RELEASE	Facility ID: 482395	API #: _____	County Name: WELD
Facility Name: Cook Donald GU #1 WH Historical	Latitude: 40.157384	Longitude: -104.731248	
** correct Lat/Long if needed: Latitude: _____		Longitude: _____	
QtrQtr: NWNW	Sec: 12	Twp: 2N	Range: 66W Meridian: 6 Sensitive Area? Yes

Facility Type: <u>SPILL OR RELEASE</u>	Facility ID: <u>482914</u>	API #: _____	County Name: <u>WELD</u>
Facility Name: <u>Cook Donald GU 1 Soil Vapor</u>		Latitude: <u>40.157390</u>	Longitude: <u>-104.731240</u>
** correct Lat/Long if needed: Latitude: _____ Longitude: _____			
QtrQtr: <u>NWNW</u>	Sec: <u>12</u>	Twp: <u>2N</u>	Range: <u>66W</u> Meridian: <u>6</u> Sensitive Area? <u>Yes</u>

## **SITE CONDITIONS**

General soil type - USCS Classifications SC 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**

Surface water is located approximately 440 feet north of the wellhead.  
A wetland is located approximately 540 feet northeast of the wellhead.

## **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
Yes	SOILS	15' (E-W) x 12' (N-S) x 8' 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 and partial flowline removal operations were completed at the Cook Donald GU True 1 location on June 15 and 17, 2022, as described in previous Form 27-Supplemental updates (COGCC Document Nos. 403162389 and 403255156). Based on the data presented, the soil investigation is complete at the Cook Donald GU True 1 wellhead and associated flowline, and no further soil assessment is required. All soil analytical results are within COGCC Table 915-1 Protection of Groundwater Soil Screening Level Concentrations, and/or within the range of site-specific background levels, following the completion of excavation activities to address historical soil impacts at the former wellhead location. Following cut and cap and subsequent excavation activities, 5 shallow soil vapor points (SVPs) were installed in the vicinity of the wellhead on August 17, 2022. On August 22, 2022, methane was detected with field screening equipment at SVP02, and soil vapor samples were collected from the 5 SVPs using IsoTubes™ and an IsoTube™ sampling manifold in conjunction with the pump on a GEM 5000. The samples were submitted to IsoTech for gas composition analysis. Results from the gas composition analysis indicated the presence of a trace concentration of thermogenic gas. As such, a Form 19-Initial/Supplemental Spill/Release Report (COGCC Document No. 403159045) was submitted on September 8, 2022, and the COGCC issued Spill/Release Point ID 482914 for the soil vapor impacts discovered at the former Cook Donald GU True 1 wellhead location. The volume of the release is unknown, and an investigation into the nature and source of the soil gas is ongoing. The SVP locations are illustrated on Figure 1. The SVP field screening data is presented in Table 1. The SVP sample analytical results are summarized in Table 2. The laboratory analytical reports for the SVP samples collected to-date are provided as Attachment A.

## 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 were collected as described in previous Form 27-Supplemental updates (COGCC Document Nos. 403162389 and 403255156). Based on the data presented, impacted soils in the excavation area were remediated to be in compliance with the COGCC Table 915-1 Protection of Groundwater Soil Screening Level Concentrations, and/or within the range of site-specific background levels. As such, the soil investigation is complete at the Cook Donald GU True 1 wellhead and associated flowline, and no further soil assessment is required

### 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, excavation, or partial flowline removal operations.

### 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 December 15, 2022, 19 additional SVPs (SVP06 - SVP24) were installed in the area surrounding the former Cook Donald GU True 1 wellhead. On December 19, 2022, soil vapor samples were collected from 21 SVP locations (SVP03, SVP05 - SVP24) using IsoTubes™ and an IsoTube™ sampling manifold in conjunction with the pump on a GEM 5000. Points SVP01, SVP02, and SVP04 were destroyed and not sampled. The samples were submitted to IsoTech for gas composition analysis. Results for the December 19, 2022 SVP sampling indicated a broad but relatively weak thermogenic gas signature spread across the NW quadrant of the area around the former Cook Donald GU True 1 wellhead location. An investigation into the nature and source of the soil gas is ongoing. On March 17, 2023, additional SVP screening and sampling was conducted at 20 SVP locations (point SVP10 was destroyed during this event), and gas composition analytical results are pending. The latest screening results are provided in Table 1.

# SITE INVESTIGATION REPORT

## SAMPLE SUMMARY

### Soil

Number of soil samples collected 10

Number of soil samples exceeding 915-1 2

Was the areal and vertical extent of soil contamination delineated? Yes

Approximate areal extent (square feet) 180

### NA / ND

-- Highest concentration of TPH (mg/kg) 34.05  
6

-- Highest concentration of SAR 7.37

BTEX > 915-1 No

Vertical Extent > 915-1 (in feet) 8

### Groundwater

Number of groundwater samples collected 0

Was extent of groundwater contaminated delineated? Yes

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?

Four background soil samples were collected from native material adjacent to the wellhead cut and cap excavation, as described in previous Form 27-Supplemental updates (COGCC Document Nos. 403162389 and 403255156).

☐ 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?

The soil vapor investigation is ongoing. Soil vapor points SVP01, SVP02, SVP04, and SVP10 have been destroyed. Additional soil vapor screening and sampling activities were conducted on March 17, 2023, and gas composition analytical results are currently pending. Findings associated with the ongoing soil vapor investigation will be presented in a forthcoming Form 27-Supplemental update.

## 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 June 30, 2022, approximately 80 cubic yards of impacted material were removed from the cut and cap excavation area and transported to the Buffalo Ridge Landfill in Keenesburg, Colorado for disposal. The excavation area was subsequently backfilled and contoured to match pre-existing site conditions. The soil vapor investigation is ongoing. Findings associated with the upcoming vapor point sampling will be detailed in a Form 27-Supplemental update.

## 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 wellhead excavation area have been remediated to be in compliance with the COGCC Table 915-1 Protection of Groundwater Soil Screening Level Concentrations, and/or within the range of site-specific background levels. Laboratory results indicate that constituent concentrations in the soil samples collected during partial flowline removal were in compliance with COGCC Table 915-1 standards. Groundwater was not encountered in the wellhead excavation area or during partial flowline removal activities. As such, no further soil assessment is required at the former Cook Donald GU True 1 wellhead and the associated flowline, as described in previous Form 27-Supplemental updates (COGCC Document Nos. 403162389 and 403255156). The soil vapor investigation is ongoing. Analytical results for the SVP samples collected on December 19, 2022, indicated a broad but relatively weak thermogenic gas signature spread across the NW quadrant of the area around the former Cook Donald GU True 1 wellhead location. The volume of the release is unknown, and an investigation into the nature and source of the soil gas is ongoing. Additional soil vapor screening and sampling activities were conducted on March 17, 2023, and gas composition analytical results are currently pending. Findings associated with the ongoing soil vapor investigation will be presented in a forthcoming Form 27-Supplemental update.

## Soil Remediation Summary

☐ In Situ

☒ Ex Situ

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

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

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

If Yes: Estimated Volume (Cubic Yards) \_\_\_\_\_ 80

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

Name of Licensed Disposal Facility or COGCC 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

#### ☐ 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 Project Status Update

### 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 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: \$ 25000

### 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 80

E&P waste (solid) description Impacted soil

COGCC Disposal Facility ID #, if applicable:

Non-COGCC Disposal Facility: Buffalo Ridge Landfill, Keenesburg, Colorado

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

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? 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 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. 06/16/2022

Actual Spill or Release date, or date of discovery. 06/16/2022

### **SITE INVESTIGATION DATES**

Date of Initial Actions described in Site Investigation Plan (start date). 06/15/2022

Proposed site investigation commencement. 06/15/2022

Proposed completion of site investigation. 12/15/2022

### **REMEDIAL ACTION DATES**

Proposed start date of Remediation. 12/15/2022

Proposed date of completion of Remediation. 12/31/2023

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**

The soil vapor investigation is ongoing. Findings associated with the ongoing soil vapor investigation will be presented in a forthcoming Form 27-Supplemental update.

In accordance with the COA that was issued for the previous Form 27-Supplemental Update (COGCC Document No. 403255156), the Form 44 for flowline abandonment in place is provided as Attachment B.

The COA issued for the previous Form 27-Supplemental Update (COGCC Document No. 403255156) also indicated that organic constituents in soil are above groundwater screening levels, however this is not the case. Elevated organic constituents that were above COGCC Table 915-1 Protection of Groundwater Soil Screening Level Concentrations in soil samples WH-B01 @6' and WH-N01 @5' were remediated through over-excavation activities, and subsequent confirmation soil samples collected from the final excavation extents were in compliance with the COGCC Table 915-1 Protection of Groundwater Soil Screening Level Concentrations. This data was presented in a previously-approved Form 27-Supplemental Update for this site (COGCC Document No. 403162389). As such, additional depth to groundwater investigation activities will not be conducted at this time, as all soil results are now within COGCC Table 915-1 Protection of Groundwater Soil Screening Level Concentrations and/or site-specific background levels.

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

Signed: Erik Mickelson

Title: Environmental Lead

Submit Date:

Email: Erik\_Mickelson@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:

Date:

Remediation Project Number: 22962

**COA Type****Description**

0 COA	

**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**

403353723	ANALYTICAL RESULTS
403354769	SITE MAP
403354771	OTHER
403354773	OTHER
403354774	ANALYTICAL RESULTS

Total Attach: 5 Files

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

		Stamp Upon Approval
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Total: 0 comment(s)