FORM 27 Rev 5/22

State of Colorado
Energy & Carbon Management Commission

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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 INFORMATON

Name of Operator: KERR MCGEE OIL & GAS ONSHORE LP Operator No: 47120

Phone Numbers

Address: P O BOX 173779
Phone: (720) 929-4306
City: DENVER State: CO Zip: 80217-3779
Mobile: ( )
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.
- [X] 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.
- [X] 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: SPILL OR RELEASE Facility ID: 482914 API #: County Name: WELD

Facility Name: Cook Donald GU 1 Soil Vapor 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

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:

- [X] **E&P Waste**
  - [X] Produced Water
  - [X] Oil
  - [X] Condensate
  - [ ] Drilling Fluids
  - [ ] Drill Cuttings
- [X] **Other E&P Waste**
  - [ ] Workover Fluids
  - [ ] Tank Bottoms
  - [ ] Pigging Waste
  - [ ] Rig Wash
  - [ ] Spent Filters
  - [ ] Pit Bottoms
  - [X] Other (as described by EPA) Thermogenic gas
- [ ] **Non-E&P Waste**

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 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 (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 ECMC 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 (GC) 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 (Document No. 403159045) was submitted on September 8, 2022, and the ECMC issued Spill/Release Point ID 482914 for the soil vapor impacts discovered at the former Cook Donald GU True 1 wellhead location. 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.

PROPOSED SAMPLING PLAN

Proposed Soil Sampling

[X] 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 (Document Nos. 403162389 and 403255156). Based on the data presented, impacted soils in the wellhead/flowline riser excavation area were remediated to be in compliance with the ECMC 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, flowline removal, or subsequent over-excavation 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 December 15, 2022 and, August 30, 2023, additional SVPs were installed in the area surrounding the former Cook Donald GU True 1 wellhead. On December 19, 2022, March 17, May 19, and September 14, 2023, and February 14, 2024, additional soil vapor samples were collected from the existing/viable SVP locations (SVP01 - SVP30), using IsoTubes™ and an IsoTube™ sampling manifold in conjunction with the pump on a GEM 5000, and submitted to IsoTech for GC analysis. Results for the September 14, 2023 and February 14, 2024 soil vapor sampling events did not indicate the presence of thermogenic gas (C2 - C5) in any of the samples collected. Based on SVP sampling results, soil vapor impacts are no longer present at this location, and no further soil vapor assessment or remediation is required. The SVP screening and sampling results are provided in Tables 1 and 2, respectively.

SITE INVESTIGATION REPORT

SAMPLE SUMMARY

Soil

Number of soil samples collected: 10

Number of soil samples exceeeding 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): 34.056

-- 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 undisturbed native material adjacent to the wellhead cut and cap excavation, at comparable depths and soil composition to the confirmation soil samples, as described in previous Form 27-Supplemental updates (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?

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. Based on the data presented and ECMC approval of the previous Form 27-Supplemental updates (Document Nos. 403162389 and 403255156), the soil investigation is complete at the Cook Donald GU True 1 wellhead and the associated flowline, and no further soil assessment is required. The excavation areas were subsequently 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 wellhead excavation area have been remediated to be in compliance with the ECMC 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 flowline removal operations were in compliance with ECMC Table 915-1 standards. Groundwater was not encountered in the wellhead excavation area or during 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 (Document Nos. 403162389 and 403255156). Analytical results for the SVP samples collected on August 22, 2022, indicated the presence of a trace concentration of thermogenic gas. On December 15, 2022 and, August 30, 2023, additional SVPs were installed in the area surrounding the former Cook Donald GU True 1 wellhead, to continue the soil vapor investigation. On December 19, 2022, March 17, May 19, and September 14, 2023, and February 14, 2024, soil vapor samples were collected from the existing/viable SVP locations (SVP01 - SVP30), using IsoTubes™ and an IsoTube™ sampling manifold in conjunction with the pump on a GEM 5000, and submitted to IsoTech for GC analysis. Results for the September 14, 2023 and February 14, 2024 soil vapor sampling events did not indicate the presence of thermogenic gas in any of the SVP samples collected. Based on SVP sampling results, soil vapor impacts are no longer present at this location, and no further soil vapor assessment or remediation is required. As such, Kerr-McGee is requesting a No Further Action (NFA) determination for this location.

Soil Remediation Summary

☐ **In Situ**

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

☒ **Ex Situ**

- Yes Excavate and offsite disposal
  - If Yes: Estimated Volume (Cubic Yards) 80
  - Name of Licensed Disposal Facility or ECMC Facility ID # ____
- No 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 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 Colorado 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 80

E&P waste (solid) description Impacted soil

ECMC Disposal Facility ID #, if applicable:

Non-ECMC Disposal Facility: Buffalo Ridge Landfill, 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? No

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. 06/30/2024

Proposed date of completion of Reclamation. 07/31/2024

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. 02/14/2024

REMEDIAL ACTION DATES

Proposed start date of Remediation. 06/30/2022

Proposed date of completion of Remediation. 02/14/2024

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 assessment is complete, based on the analytical and soil screening data provided herein, and Kerr-McGee is requesting an 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: 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 ECMC Rules and applicable orders and is hereby approved.

ECMC Approved:

Date:

Remediation Project Number: 22962

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
403742076	ANALYTICAL RESULTS
403742079	OTHER
403892800	ANALYTICAL RESULTS

Total Attach: 3 Files

General Comments

User Group	Comment	Comment Date
		Stamp Upon Approval

Total: 0 comment(s)