FORM 27 Rev 5/22

State of Colorado
Energy & Carbon Management Commission

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Report taken by: Kari Brown

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
Address: P O BOX 173779
City: DENVER State: CO Zip: 80217-3779
Contact Person: Erik Mickelson Email: DJRemediation_Forms@oxy.com

Phone Numbers
Phone: (720) 929-4306
Mobile: ( )

PROJECT, PURPOSE & SITE INFORMATION

PROJECT INFORMATION

Remediation Project #: 31102 Initial Form 27 Document #: 403491458

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.
- [ ] 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.
- [X] 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 #: 123-39435 County Name: WELD
Facility Name: FRONT RANGE FARMS 16N-14HZ Latitude: 40.065219 Longitude: -104.963698
** correct Lat/Long if needed: Latitude: Longitude:
QtrQtr: NESE Sec: 11 Twp: 1N Range: 68W Meridian: 6 Sensitive Area? Yes

Facility Type: WELL Facility ID: API #: 123-39439 County Name: WELD
Facility Name: FRONT RANGE FARMS 37C-14HZ Latitude: 40.065220 Longitude: -104.963805
** correct Lat/Long if needed: Latitude: Longitude:
QtrQtr: NESE Sec: 11 Twp: 1N Range: 68W Meridian: 6 Sensitive Area? Yes

Facility Type: SPILL OR RELEASE Facility ID: 485390 API #: County Name: WELD

Facility Name: Front Range Farms 16N-14HZ Hist. Latitude: 40.065218 Longitude: -104.963686

** correct Lat/Long if needed: Latitude: Longitude:

QtrQtr: NESE Sec: 11 Twp: 1N Range: 68W 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? Yes

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

Multiple buildings and livestock holding pens are located within ¼ mile of the wellhead.
The nearest building is located approximately 650 feet northeast of the wellhead.
The nearest domestic water well is located approximately 750 feet northeast of the wellhead.
A wetland is located approximately 1,100 feet southeast of the wellhead.

SITE INVESTIGATION PLAN

TYPE OF WASTE:

[X] **E&P Waste**	[ ] **Other E&P Waste**	[ ] **Non-E&P Waste**
[X] Produced Water	[ ] Workover Fluids	_____
[X] Oil	[ ] Tank Bottoms	
[X] 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 18' (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 operations were completed at the Front Range Farms 16N-14HZ wellhead on October 3, 2023. Groundwater was not encountered in the wellhead excavation area. Soil screening around the well and associated pumping equipment was conducted following cut and cap operations, and a soil sample (WH-B01@6') was submitted for laboratory analysis. The flowlines associated with this wellhead and with the previously abandoned Front Range Farms 37C-14HZ wellhead were removed on October 3 and 4, 2023. The Front Range Farms 37C-14HZ wellhead was plugged and abandoned on February 4, 2022, as described in Form 27 Document No. 403098262. Soil samples were collected from the locations where the flowline risers were disconnected at the wellhead (16N-FL-B01@4') and separators (16N-FL-B02@4' and 37C-FL-B01@4'), and where the flowlines changed direction (16N-FL-B03@4', 16N-37C-FL-B04@4', 16N-37C-FL-B05@4', and 16N-37C-FL-B13@4'), and submitted for laboratory analysis. Analytical results indicated that soil impacts were present at sample location WH-B01@6' due to the pH, and electrical conductivity (EC) results above ECMC Table 915-1 standards and site-specific background levels. As such, a Form 19-Initial/Supplemental Spill/Release Report (Document No. 403571826) was submitted on October 26, 2023, and the ECMC issued Spill/Release Point ID 485390. The remaining analytical results for the soil samples collected during wellhead cut and cap and flowline removal activities were in compliance with ECMC Table 915-1 standards and/or within the range of site-specific background levels (x 1.25 for metals). Based on the elevated pH and EC results for sample WH-B01@6', a verification soil sample (WH-B02@6') was collected on December 28, 2023, to confirm these exceedances. Analytical results for sample WH-B02@6' indicated that the EC result remained above the Table 915-1 standard as well as the range of background results. A topographic Site Location Map is provided as Figure 1.

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):

On January 10 through February 21, 2024, excavation activities were conducted to address remaining soil impacts at the former wellhead location. Soil samples were collected from the base and sidewalls of the excavation, at depths ranging from approximately 7 to 11 feet below ground surface (bgs). Based on analytical results for waste characterization sample WH-B01@6', the confirmation soil samples were submitted for laboratory analysis of BTEX, TPH, TMB, PAHs, pH, EC, and select Table 915-1 metals (As, Ba, Cu, Pb, Ni, Se, Zn). Analytical results indicated that constituent concentrations in the soil samples collected from the final wellhead excavation extents were in compliance with ECMC Table 915-1 standards and/or within the range of site-specific background levels (x 1.25 for metals). Soil sample location and field screening data are presented in Table 1. Soil analytical results are summarized in Tables 2 through 5. The soil sample locations are illustrated on Figures 2 through 4.

Proposed Groundwater Sampling

[X] 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 October 3 and 4, 2023, soil screening was conducted at 4 sidewall locations within the cut and cap excavation area, 4 locations at the ground surface adjacent to the excavation, and 7 flowline removal potholes. Based on the screening results, hydrocarbon-impacted soil was not observed at the soil screening locations. On October 26, 2023, a soil gas survey was conducted at 4 soil vapor points (SVP01, SVP02, SVP04, SVP05) installed adjacent to the former wellhead following cut and cap operations. GEM 5000 field readings were non-detect for methane at all 4 soil vapor points. The SVP locations are illustrated on Figure 2. The SVP screening results are summarized in Table 6. The laboratory analytical reports are provided as Attachment A. The field notes and a photographic log are provided as Attachment B.

SITE INVESTIGATION REPORT

SAMPLE SUMMARY

Soil

Number of soil samples collected: 16

Number of soil samples exceeeding 915-1: 4

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

Approximate areal extent (square feet): 270

NA / ND

Highest concentration of TPH (mg/kg): ND

Highest concentration of SAR: --

BTEX > 915-1: 19

Vertical Extent > 915-1 (in feet): No

11

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?

Twelve (12) background soil samples were collected from undisturbed native material adjacent to the wellhead cut and cap excavation area, at comparable depths and soil composition to the confirmation soil samples. The background soil samples were submitted for laboratory analysis of the Soil Suitability for Reclamation Parameters and Table 915-1 metals using standard ECMC-approved methods appropriate for detecting the target analytes in Table 915-1. Analytical results for the background soil samples are presented in Table 4 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?

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 January 10, 2024, approximately 100 cubic yards of impacted material were removed from the wellhead excavation area and transported to the Buffalo Ridge Landfill in Keenesburg, Colorado for disposal. On February 21, 2024, approximately 40 cubic yards of impacted material were removed from the wellhead excavation area and transported to the Front Range Landfill in Erie, Colorado for disposal. The excavation area was subsequently backfilled and re-graded to match pre-existing site 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 analytical results indicated that impacted soils in the wellhead excavation area have been remediated to be in compliance with the ECMC Table 915-1 standards and/or within the range of site-specific background levels (x 1.25 for metals). Laboratory results indicate that constituent concentrations in the remaining soil samples collected during wellhead cut and cap and flowline removal activities were in compliance with the ECMC Table 915-1 soil standards and/or within the range of site-specific background levels (x 1.25 for metals). Groundwater was not encountered during wellhead cut and cap, flowline removal, or subsequent over-excavation activities. Hydrocarbon-impacted soil was not observed during field inspection and soil screening activities. Based on the 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 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) 140
  - Name of Licensed Disposal Facility or ECMC 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 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 140

E&P waste (solid) description Impacted Soil

ECMC Disposal Facility ID #, if applicable:

Non-ECMC Disposal Facility: Buffalo Ridge Landfill - Keenesburg, Colorado; Front Range Landfill - Erie, 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. 07/31/2024

Proposed date of completion of Reclamation. 08/31/2024

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. 10/25/2023

Actual Spill or Release date, or date of discovery. 10/24/2023

SITE INVESTIGATION DATES

Date of Initial Actions described in Site Investigation Plan (start date). 10/03/2023

Proposed site investigation commencement. 10/03/2023

Proposed completion of site investigation. 02/21/2024

REMEDIAL ACTION DATES

Proposed start date of Remediation. 01/10/2024

Proposed date of completion of Remediation. 02/21/2024

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

Assessment is complete and Kerr-McGee is requesting an NFA determination for this location, based on the analytical and soil screening data provided herein.

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: 04/18/2024 Email: DJRemediation_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: Kari Brown Date: 06/24/2024

Remediation Project Number: 31102

COA Type	Description
	Based on the information presented, it appears that no further action is necessary at this time and the ECMC approves the closure request. However, if future conditions at the site indicate contaminant concentrations in soils exceeding ECMC standards or if groundwater is found to be impacted, then further investigation and/or remediation activities may be required. The surface area disturbed by the remediation activity shall be reclaimed in accordance with the 1000 Series Reclamation Rules. For locations with active ongoing oil and gas operations, comply with Rule 1003 interim reclamation requirements and for locations that will no longer have active oil and gas operations, comply with Rule 1004 Final Reclamation requirements.
1 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
403751134	INVESTIGATION/REMEDIATION WORKPLAN (SUPPLEMENTAL)
403751251	OTHER
403751255	SITE MAP
403751271	OTHER
403757740	ANALYTICAL RESULTS
403757744	PHOTO DOCUMENTATION
403757748	SOIL SAMPLE LOCATION MAP
403757751	SOIL SAMPLE LOCATION MAP
403757753	SOIL SAMPLE LOCATION MAP
403757754	ANALYTICAL RESULTS
403834000	FORM 27-SUPPLEMENTAL-SUBMITTED

Total Attach: 11 Files

General Comments

User Group	Comment	Comment Date
		Stamp Upon Approval

Total: 0 comment(s)