

State of Colorado  
Energy & Carbon Management Commission

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Document Number:  
403573558  
Receive Date:  
10/27/2023

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
Address: P O BOX 173779		
City: DENVER	State: CO	Zip: 80217-3779
Contact Person: Gregory Hamilton	Email: Gregory_Hamilton@oxy.com	
		Phone: (970) 336-3500
		Mobile: (970) 515-1698

PROJECT, PURPOSE & SITE INFORMATION

PROJECT INFORMATION

Remediation Project #: 29284 Initial Form 27 Document #: 403369287

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 #: 123-34463	County Name: WELD
Facility Name: NORTHGLENN STATE 24-36		Latitude: 40.004067	Longitude: -104.951439
		** correct Lat/Long if needed: Latitude: _____	Longitude: _____
QtrQtr: NWSE	Sec: 36	Twp: 1N	Range: 68W Meridian: 6 Sensitive Area? Yes

Facility Type: WELL	Facility ID: _____	API #: 123-34464	County Name: WELD
Facility Name: NORTHGLENN STATE 33-36		Latitude: 40.003767	Longitude: -104.951442
		** correct Lat/Long if needed: Latitude: _____	Longitude: _____
QtrQtr: SWSE	Sec: 36	Twp: 1N	Range: 68W Meridian: 6 Sensitive Area? Yes

Facility Type: WELL	Facility ID: _____	API #: 123-34465	County Name: WELD
Facility Name: NORTHGLENN STATE 16-36	Latitude: 40.003845	Longitude: -104.951440	
** correct Lat/Long if needed: Latitude: _____		Longitude: _____	
QtrQtr: SWSE	Sec: 36	Twp: 1N	Range: 68W Meridian: 6 Sensitive Area? Yes
Facility Type: WELL	Facility ID: _____	API #: 123-34466	County Name: WELD
Facility Name: NORTHGLENN STATE 12-36	Latitude: 40.003927	Longitude: -104.951442	
** correct Lat/Long if needed: Latitude: _____		Longitude: _____	
QtrQtr: SWSE	Sec: 36	Twp: 1N	Range: 68W Meridian: 6 Sensitive Area? Yes
Facility Type: WELL	Facility ID: _____	API #: 123-34467	County Name: WELD
Facility Name: NORTHGLENN STATE 39-36	Latitude: 40.003903	Longitude: -104.951441	
** correct Lat/Long if needed: Latitude: _____		Longitude: _____	
QtrQtr: SWSE	Sec: 36	Twp: 1N	Range: 68W Meridian: 6 Sensitive Area? Yes
Facility Type: WELL	Facility ID: _____	API #: 123-34469	County Name: WELD
Facility Name: NORTHGLENN STATE 19-36X	Latitude: 40.003874	Longitude: -104.951443	
** correct Lat/Long if needed: Latitude: _____		Longitude: _____	
QtrQtr: SWSE	Sec: 36	Twp: 1N	Range: 68W Meridian: 6 Sensitive Area? Yes
Facility Type: WELL	Facility ID: _____	API #: 123-34471	County Name: WELD
Facility Name: NORTHGLENN STATE 10-36	Latitude: 40.004120	Longitude: -104.951440	
** correct Lat/Long if needed: Latitude: _____		Longitude: _____	
QtrQtr: NWSE	Sec: 36	Twp: 1N	Range: 68W Meridian: 6 Sensitive Area? Yes
Facility Type: WELL	Facility ID: _____	API #: 123-34472	County Name: WELD
Facility Name: NORTHGLENN STATE 23-36	Latitude: 40.003824	Longitude: -104.951440	
** correct Lat/Long if needed: Latitude: _____		Longitude: _____	
QtrQtr: SWSE	Sec: 36	Twp: 1N	Range: 68W Meridian: 6 Sensitive Area? Yes
Facility Type: WELL	Facility ID: _____	API #: 123-34473	County Name: WELD
Facility Name: NORTHGLENN STATE 36-36	Latitude: 40.003655	Longitude: -104.951441	
** correct Lat/Long if needed: Latitude: _____		Longitude: _____	
QtrQtr: SWSE	Sec: 36	Twp: 1N	Range: 68W Meridian: 6 Sensitive Area? Yes
Facility Type: WELL	Facility ID: _____	API #: 123-34488	County Name: WELD
Facility Name: NORTHGLENN STATE 14-36	Latitude: 40.003682	Longitude: -104.951439	
** correct Lat/Long if needed: Latitude: _____		Longitude: _____	
QtrQtr: SWSE	Sec: 36	Twp: 1N	Range: 68W Meridian: 6 Sensitive Area? Yes
Facility Type: WELL	Facility ID: _____	API #: 123-34489	County Name: WELD
Facility Name: NORTHGLENN STATE 40-36	Latitude: 40.004013	Longitude: -104.951441	
** correct Lat/Long if needed: Latitude: _____		Longitude: _____	
QtrQtr: NWSE	Sec: 36	Twp: 1N	Range: 68W Meridian: 6 Sensitive Area? Yes
Facility Type: SPILL OR RELEASE	Facility ID: 484965	API #: _____	County Name: WELD
Facility Name: Northglenn St 40-36 WH Hist. Rel.	Latitude: 40.004010	Longitude: -104.951427	
** correct Lat/Long if needed: Latitude: _____		Longitude: _____	
QtrQtr: NWSE	Sec: 36	Twp: 1N	Range: 68W 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? Yes

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**

The nearest domestic water well is located approximately 700 feet southwest of the wellheads.  
Surface water is located approximately 220 feet north of the wellheads.  
A wetland is located approximately 210 feet north of the wellheads.

**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
No	GROUNDWATER	No impacts encountered	Groundwater samples/laboratory analytical results
Yes	SOILS	15' (N-S) x 15' (E-W) 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 Northglenn ST 10,12,14,16,23,24,33,36,39,40-36,19-36X wellheads on July 31, 2023. Groundwater was encountered in the cut and cap excavations for the Northglenn ST 10-36 and 24-36 wellheads at approximately 6 feet below ground surface (bgs). Soil screening around the wells and associated pumping equipment was conducted following cut and cap operations, and soil samples were submitted for laboratory analysis from the base of the excavation areas. Partial removal of the flowlines associated with these wellheads was conducted on July 31 and August 2, 2023, and soil samples were collected from the locations where the flowline risers were disconnected at the wellheads and separators. The remaining flowlines were abandoned in place due to operational restrictions and safety concerns associated with multiple active flowlines remaining in the same corridor, and their status will be changed to out-of-service in accordance with Rule 1101.a.(3).A,B,&C. Flowline removal operations will be completed in the future, during decommissioning of the remaining wellheads and flowlines at this location. Based on preliminary analytical results, sample 40-36-WH-B01@6' was selected for waste characterization and was submitted for the full Table 915-1 analytical suite. Analytical results indicated that impacted soil was present due to TPH, pH, and SAR results above Table 915-1 standards and background levels. As such, a Form 19-Initial/Supplemental Spill/Release Report (Document No. 403483418) was submitted, and the ECMC issued Spill/Release Point ID 484965. The remaining analytical results for the final soil samples collected during wellhead cut and cap and partial flowline removal operations were in compliance with ECMC standards, and/or within the range of background levels or acceptable soil variability for pH. A topographic Site Location Map is provided as Figure 1. Sample location and field screening data are presented in Table 1.

**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 ):

Based on elevated inorganics results (pH, SAR, EC, boron) for various wellhead soil samples, additional verification soil samples were collected on September 12, 2023. Final analytical results for the verification soil samples were within Table 915-1 standards and/or site-specific background levels. On September 12, 2023, excavation activities were conducted to address remaining soil impacts at the former Northglenn ST 40-36 wellhead, and 5 confirmation soil samples were collected from the base and sidewalls of the final excavation extent, at approximately 8 and 7 feet bgs, respectively. Based on the analytical results for waste characterization sample 40-36-WH-B01@6', the confirmation samples were submitted for analysis of BTEX, TPH, TMB, PAHs, pH, SAR, As, Ba, Cd, Cu, Pb, Ni, and Se. Analytical results indicate that concentrations in the soil samples collected from the final excavation extents were within Table 915-1 standards and/or site-specific background levels.

**Proposed Groundwater Sampling**

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

Northglenn ST 10-36 and 24-36 wellhead excavation areas at approximately 6 feet bgs. Groundwater was not encountered in the remaining wellhead excavation areas or flowline riser removal potholes. Therefore, impacted soil in the Northglenn ST 40-36 wellhead excavation area is not in contact with groundwater. On July 31, 2023, groundwater samples 10-36-WH-GW01 and 24-36-GW01 were collected from the Northglenn ST 10-36 and 24-36 wellhead excavation areas, respectively. The groundwater samples were submitted for laboratory analysis of BTEX, naphthalene, 1,2,4- and 1,3,5-TMB by USEPA Method 8260D. Analytical results indicated that constituent concentrations in the groundwater samples were below laboratory detection limits, and therefore in compliance with ECMC Table 915-1 standards.

**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 July 31, 2023, field soil screening was conducted at 34 sidewall locations in the cut and cap excavation areas and 8 locations at the ground surface adjacent to the excavations. Based on the inspection and screening results, hydrocarbon-impacted soil was not observed at the soil screening locations, and no soil samples were submitted for laboratory analysis in accordance with ECMC Operator Guidance. On August 8, 2023, a soil gas survey was conducted at 34 soil vapor points installed adjacent to the former wellheads following cut and cap operations. GEM 5000 field readings were non-detect for methane at all 24 soil vapor points able to be screened. The soil and groundwater sample and field screening locations are illustrated on Figures 2 through 4. Analytical results are summarized in Tables 2 through 6. SVP screening results are summarized in Table 7. 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 38

Number of soil samples exceeding 915-1 3

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

Approximate areal extent (square feet) 225

**NA / ND**

-- Highest concentration of TPH (mg/kg) 635

-- Highest concentration of SAR 27.5

BTEX > 915-1 No

Vertical Extent > 915-1 (in feet) 8

**Groundwater**

Number of groundwater samples collected 2

Was extent of groundwater contaminated delineated? Yes

Depth to groundwater (below ground surface, in feet) 6

Number of groundwater monitoring wells installed 0

Number of groundwater samples exceeding 915-1 0

ND Highest concentration of Benzene (µg/l) \_\_\_\_\_

ND Highest concentration of Toluene (µg/l) \_\_\_\_\_

ND Highest concentration of Ethylbenzene (µg/l) \_\_\_\_\_

ND Highest concentration of Xylene (µg/l) \_\_\_\_\_

NA 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?

Sixteen (16) background soil samples were collected from native material adjacent to the former wellhead cut and cap excavation areas, at comparable depth and material to the confirmation samples. 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 the target analytes in Table 915-1. Analytical results for the background soil samples are summarized in Tables 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 September 12, 2023, approximately 120 cubic yards of impacted material were removed from the Northglenn ST 40-36 wellhead excavation area and transported to the Front Range Landfill in Erie, Colorado for disposal. Following the collection of groundwater samples 10-36-GW01 and 24-36-GW01, approximately 320 barrels of non-impacted groundwater were removed from the Northglenn ST 10-36 and 24-36 wellhead excavation areas via vacuum truck, for sidewall stability and backfill management purposes, and transported to the Kerr-McGee Aggregate Recycle Facility in Weld County, Colorado for recycling. The excavation areas were subsequently backfilled and contoured 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 indicate that impacted soils in the Northglenn ST 40-36 wellhead excavation areas have been remediated to be in compliance with the ECMC Table 915-1 standards and/or within the range of site-specific background levels. Laboratory analytical results indicate that constituent concentrations in the remaining soil samples collected during wellhead cut and cap and flowline riser removal activities were in compliance with the ECMC Table 915-1 standards and/or within the range of site-specific background levels, following subsequent verification sampling. Laboratory analytical results indicate that constituent concentrations in the groundwater samples collected from the Northglenn ST 10-36 and 24-36 wellhead excavation areas were below laboratory detection limits, and therefore in compliance with the ECMC Table 915-1 standards. Groundwater was not encountered in the remaining wellhead excavation areas or flowline riser removal potholes. Therefore, impacted soil in the Northglenn ST 40-36 wellhead excavation area is not in contact with groundwater. 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

Ex Situ

       Bioremediation ( or enhanced bioremediation )

Yes Excavate and offsite disposal

       Chemical oxidation

       If Yes: Estimated Volume (Cubic Yards)        120

       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

## 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:

Approximately 320 barrels of non-impacted groundwater were removed from the Northglenn ST 10-36 and 24-36 wellhead excavation areas via vacuum truck, and transported to the Kerr-McGee Aggregate Recycle Facility in Weld County, Colorado for recycling.

Volume of E&P Waste (solid) in cubic yards 120

E&P waste (solid) description Impacted soil

COGCC Disposal Facility ID #, if applicable: \_\_\_\_\_

Non-COGCC Disposal Facility: Front Range Landfill - Erie, Colorado

Volume of E&P Waste (liquid) in barrels 320

E&P waste (liquid) description Non-impacted groundwater

COGCC Disposal Facility ID #, if applicable: 434766

Non-COGCC 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 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 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. 01/31/2024

Proposed date of completion of Reclamation. 03/31/2024

## 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. 08/02/2023

Actual Spill or Release date, or date of discovery. 08/01/2023

### SITE INVESTIGATION DATES

Date of Initial Actions described in Site Investigation Plan (start date). 07/31/2023

Proposed site investigation commencement. 07/31/2023

Proposed completion of site investigation. 09/25/2023

### REMEDIAL ACTION DATES

Proposed start date of Remediation. 09/12/2023

Proposed date of completion of Remediation. 09/12/2023

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**

Based on the analytical and field screening data provided herein, assessment is complete 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: Gregory Hamilton

Title: Environmental Lead

Submit Date: 10/27/2023

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: \_\_\_\_\_

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

Remediation Project Number: 29284

**COA Type****Description**

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**

403573584	SITE MAP
403573585	OTHER
403574573	ANALYTICAL RESULTS
403574579	PHOTO DOCUMENTATION
403574580	SOIL SAMPLE LOCATION MAP
403574581	SOIL SAMPLE LOCATION MAP
403574582	SOIL SAMPLE LOCATION MAP
403574583	ANALYTICAL RESULTS
403574584	OTHER

Total Attach: 9 Files

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

User Group	Comment	Comment Date
		Stamp Upon Approval

Total: 0 comment(s)