

State of Colorado
Energy & Carbon Management Commission

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Document Number:
404307204
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 ECOM 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		Phone: (720) 929-4306
City: DENVER	State: CO	Zip: 80217-3779
Contact Person: Erik Mickelson	Email: Erik_Mickelson@oxy.com	Mobile: ()

PROJECT, PURPOSE & SITE INFORMATION

PROJECT INFORMATION

Remediation Project #: 18304 Initial Form 27 Document #: 402685858

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 #: 123-28062	County Name: WELD
Facility Name: WILLIAMS 18-29	Latitude: 40.114894	Longitude: -105.029864	
** correct Lat/Long if needed: Latitude: _____		Longitude: _____	
QtrQtr: NENW	Sec: 29	Twp: 2N	Range: 68W Meridian: 6 Sensitive Area? Yes

Facility Type: WELL	Facility ID: _____	API #: 123-28067	County Name: WELD
Facility Name: WILLIAMS 36-20	Latitude: 40.115017	Longitude: -105.029806	
** correct Lat/Long if needed: Latitude: _____		Longitude: _____	
QtrQtr: NENW	Sec: 29	Twp: 2N	Range: 68W Meridian: 6 Sensitive Area? Yes

Facility Type: WELL	Facility ID: _____	API #: 123-28068	County Name: WELD
Facility Name: WILLIAMS 14-20	Latitude: 40.114986	Longitude: -105.029819	
** correct Lat/Long if needed: Latitude: _____		Longitude: _____	
QtrQtr: NENW	Sec: 29	Twp: 2N	Range: 68W Meridian: 6 Sensitive Area? Yes

Facility Type: WELL	Facility ID: _____	API #: 123-28069	County Name: WELD
Facility Name: WILLIAMS 13-20	Latitude: 40.114949	Longitude: -105.029840	
** correct Lat/Long if needed: Latitude: _____		Longitude: _____	
QtrQtr: NENW	Sec: 29	Twp: 2N	Range: 68W Meridian: 6 Sensitive Area? Yes

Facility Type: TANK BATTERY	Facility ID: 444978	API #: _____	County Name: WELD
Facility Name: MILTON H. NELSON 'K'-62N68W 29NENW	Latitude: 40.114465	Longitude: -105.029723	
** correct Lat/Long if needed: Latitude: _____		Longitude: _____	
QtrQtr: NENW	Sec: 29	Twp: 2N	Range: 68W Meridian: 6 Sensitive Area? Yes

Facility Type: SPILL OR RELEASE	Facility ID: 480279	API #: _____	County Name: WELD
Facility Name: WILLIAMS 18-29, 36-30	Latitude: 40.114894	Longitude: -105.029864	
** correct Lat/Long if needed: Latitude: _____		Longitude: _____	
QtrQtr: NENW	Sec: 29	Twp: 2N	Range: 68W Meridian: 6 Sensitive Area? Yes

Facility Type: SPILL OR RELEASE	Facility ID: 480355	API #: _____	County Name: WELD
Facility Name: Williams Pad 29-2N-68W	Latitude: 40.114894	Longitude: -105.029864	
** correct Lat/Long if needed: Latitude: _____		Longitude: _____	
QtrQtr: NENW	Sec: 29	Twp: 2N	Range: 68W Meridian: 6 Sensitive Area? Yes

Facility Type: SPILL OR RELEASE	Facility ID: 488069	API #: _____	County Name: WELD
Facility Name: Williams 18-29 Facility	Latitude: 40.114465	Longitude: -105.029723	
** correct Lat/Long if needed: Latitude: _____		Longitude: _____	
QtrQtr: NENW	Sec: 29	Twp: 2N	Range: 68W Meridian: 6 Sensitive Area? Yes

SITE CONDITIONS

General soil type - USCS Classifications ML Most Sensitive Adjacent Land Use Water Resources and Rangeland

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

Retention pond located approximately 170 feet (ft) west; Idaho Creek located approximately 500 ft east; Groundwater approximately 11 ft below ground surface; Three monitoring/sampling wells located within 1/4 mile of the site; The site is located within a Bald Eagle Winter Roost High Priority Habitat (HPH).

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) Thermogenic gas

DESCRIPTION OF IMPACT

Impacted?	Impacted Media	Extent of Impact	How Determined
No	GROUNDWATER	N/A	Groundwater Samples/Lab Analytical Results
Yes	SOILS	Previously Reported	Soil Vapor Samples/Lab 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 & cap operations were completed at the Williams 14, 36-20 and 18-29 wellheads on 6/30/21 and 8/13/24. Re-entry cut and cap of the Williams 13-20 was completed on 8/13/24. The well was originally cut & capped under Rem# 20922. Samples from 2021 were submitted for analysis of full list Table 915-1 constituents to determine if a release occurred. Results indicated electrical conductivity (EC) and pH impacts were present at the 36-20 wellhead. A Form 19 Report (Doc# 402742587) was submitted on 7/9/21 & the ECOMC issued Spill ID 480279. The flowlines associated with the wellheads were removed on 6/30/21 & 8/13/24 & samples were collected from the wellhead risers, the separator risers, & from where the flowlines changed directions (FL03@5', FL04@5', and FL05@4'). Flowline samples were in compliance with allowable levels or backgrounds.

Decommissioning activities were completed at the Williams 18-29 on 8/13/24. Visual inspection & field screening of soil at three aboveground storage tanks (ASTs), one produced water vessel (PWV), one separator, & two dumphine potholes (FL01@3' and FL02@3') were conducted and soil samples were submitted for analysis of full list Table 915-1 constituents to determine if a release occurred. Results indicated that impacts exceeding the allowable levels & background for arsenic &/or pH were present at the former AST03 & PWV locations. A Form 19 Report (Doc# 403928869) was submitted on 9/23/24 & the ECOMC issued Spill ID 488069.

During plugging and abandoning activities at the Williams 18-29 & Williams 36-20 wellheads at the Williams Pad 29-2N-68W site, ten shallow soil vapor points were installed in the vicinity of the wellheads to assess the subsurface for stray gas. On 7/15/21, thermogenic gas (C2-C5) was detected in the subsurface in the vicinity of the wellheads. A Form 19 Report (Doc# 402750901) was submitted on 8/3/21 & the ECOMC issued Spill ID 480355

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):

Between June 30, 2021 and October 2, 2024, excavation activities were conducted to address the impacts at the former 36-20 wellhead and the former tank battery. Confirmation soil samples were collected at depths ranging from 2 ft bgs to 11 ft bgs. The samples were submitted for analysis of the excavation-specific waste profile, developed using the approved method at the time of each excavation, including total petroleum hydrocarbons, benzene, toluene, ethylbenzene, xylenes, 1,2,4- and 1,3,5-trimethylbenzene, PAHs, electrical conductivity (EC), sodium adsorption ratio (SAR), pH, boron, and/or select Table 915-1 metals, using ECOMC-approved methods. Analytical results indicate that soil is in compliance with Table 915-1 allowable levels or within background levels at the extents of the excavations.

Proposed Groundwater Sampling

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

Groundwater was encountered in the Williams 36-20 cut and cap excavation at a depth of approximately 11 ft bgs and one groundwater sample (GW01) was collected for laboratory analysis of full list Table 915-1 constituents in groundwater. One background groundwater sample was collected for Table 915-1 inorganic constituents. Results indicate sulfate ion exceeding the Table 915-1 allowable level and background was present. All organic constituents were below the laboratory reporting limits. Based on practices at the time of sampling, no further groundwater monitoring was required and the ECOMC approved Document No. 402886216 which stated that groundwater meets 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):

Between 6/30/21 and 8/13/24, visual inspection & field screening of soil were conducted at 4 sidewall locations within the 36-20 cut & cap excavation area, 2 flowline potholes, the hatch, loadout, &/or base of each AST, 3 sidewalls within the PWV excavation, the meter house, & the emission control device. Based on inspection & screening results, impacted soil was not observed at the screening locations, & no samples were submitted for analysis from these areas, in accordance with the ECMC Operator Guidance.

The soil vapor investigation is ongoing. The former soil vapor wells (SVWs) and soil vapor points (SVPs) were abandoned in preparation for decommissioning activities. New soil vapor points were installed on July 7, 2025 to evaluate the soil vapor conditions following wellhead cut and cap and re-entry activities. On July 15, 2025, Ensolum, LLC. (Ensolum) visited the site to screen and sample the SVPs using the pump on a Landtec GEM 5000 (GEM). Methane was non-detect.

SITE INVESTIGATION REPORT

SAMPLE SUMMARY

Soil

Number of soil samples collected 40
 Number of soil samples exceeding 915-1 35
 Was the areal and vertical extent of soil contamination delineated? Yes
 Approximate areal extent (square feet) 3109

NA / ND

ND Highest concentration of TPH (mg/kg) _____
 -- Highest concentration of SAR 5.8
 BTEX > 915-1 No
 Vertical Extent > 915-1 (in feet) 11

Groundwater

Number of groundwater samples collected 3
 Was extent of groundwater contaminated delineated? Yes
 Depth to groundwater (below ground surface, in feet) 11
 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?

One tank battery background sample was collected from the soil used to construct the tank battery for comparison to shallow samples collected in the fill. Twenty background samples were collected from native material outside of the excavations and 16 were collected as part of the Williams 7, 8, 23, 25-20 Wellheads decommissioning (Rem# 35018). The background soil samples were submitted for analysis of pH, EC, SAR, boron, and Table 915-1 metals. Results indicate that pH and arsenic are high in the soil used to construct the tank battery and EC, SAR, pH, boron, arsenic, barium, cadmium, hexavalent chromium, lead, nickel, and selenium are high in native soil.

One background groundwater sample was collected for Table 915-1 inorganic constituents in groundwater.

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. The former SVWs and SVPs were abandoned in preparation for decommissioning activities. New soil vapor points (SVP72 through SVP95) were installed on July 7, 2025 to evaluate the soil vapor conditions following wellhead cut and cap and re-entry activities. On July 15, 2025, Ensolum visited the site to screen and sample the SVPs using the pump on a GEM. SVP85 and SVP91 were destroyed and could not be screened. Methane was non-detect at all remaining SVPs. Samples were submitted to Isotech Laboratories (Isotech) for gas chromatography analysis. Laboratory analytical results from the July 2025 sampling event are pending and will be summarized in a subsequent Form 27 Supplemental report. The current and former SVP and SVW locations are depicted on Figure 1. The current and historical soil vapor screening data is presented in Tables 1A and 1B. The historical soil vapor analytical results are summarized in Table 2.

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.

Approximately 215 barrels of hydrovac water were removed from the site and transported to the Aggregate Recycle Facility in Weld County, Colorado for recycling. Approximately 600 cubic yards of impacted soil were removed from the site and transported to the Front Range Landfill in Erie, Colorado for disposal. Disposal records are kept on file and are available upon request. The excavation areas were 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 soil impacts exceeding the ECMC Table 915-1 allowable levels and background levels at the Williams 36-20 wellhead and Williams 18-29 facility have been remediated to be within allowable levels or within background levels. Groundwater was encountered in the 36-20 wellhead cut and cap excavations at approximately 11 ft bgs. Groundwater was in compliance with allowable levels at the time of sampling with only sulfate being above background and all organic constituents were below the laboratory reporting limits.

The soil vapor investigation is ongoing. The former SVWs and SVPs were abandoned in preparation for decommissioning activities. New soil vapor points (SVP72 through SVP95) were installed on July 7, 2025 to evaluate the soil vapor conditions following wellhead cut and cap and re-entry activities. On July 15, 2025, Ensolum visited the site to screen and sample the SVPs using the pump on a GEM. SVP85 and SVP91 were destroyed and could not be screened. Methane was non-detect at all remaining SVPs. Samples were submitted to Isotech for gas chromatography analysis. Laboratory analytical results from the July 2025 sampling event are pending and will be summarized in a subsequent Form 27 Supplemental report. The current and former SVP and SVW locations are depicted on Figure 1. The current and historical soil vapor screening data is presented in Tables 1A and 1B. The historical soil vapor analytical results are summarized in Table 2.

Soil Remediation Summary

In Situ

Ex Situ

_____ Bioremediation (or enhanced bioremediation)

Yes _____ Excavate and offsite disposal

_____ Chemical oxidation

If Yes: Estimated Volume (Cubic Yards) _____ 600

_____ 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

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 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: \$ 50000 _____

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 215 barrels of hydrovac water were removed from the site and transported to the Aggregate Recycle Facility in Weld County, Colorado for recycling.

Volume of E&P Waste (solid) in cubic yards _____ 600

E&P waste (solid) description _____ Impacted Soil _____

ECMC Disposal Facility ID #, if applicable: _____

Non-ECMC Disposal Facility: _____ Front Range Landfill in Erie, CO _____

Volume of E&P Waste (liquid) in barrels _____ 215

E&P waste (liquid) description _____ Hydrovac water _____

ECMC Disposal Facility ID #, if applicable: _____ 434766 _____

Non-ECMC 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? _____

Does the previous reply indicate consideration of background concentrations? _____

Does Groundwater meet Table 915-1 standards? _____

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.

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. 09/20/2024

Actual Spill or Release date, or date of discovery. 09/20/2024

SITE INVESTIGATION DATES

Date of Initial Actions described in Site Investigation Plan (start date). 06/30/2021

Proposed site investigation commencement. 06/30/2021

Proposed completion of site investigation. 12/31/2025

REMEDIAL ACTION DATES

Proposed start date of Remediation. 01/01/2024

Proposed date of completion of Remediation. 12/31/2025

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

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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: 18304

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**

404307242	ANALYTICAL DATA SUMMARY TABLE(S)
404309275	SITE MAP

Total Attach: 2 Files

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

		Stamp Upon Approval
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Total: 0 comment(s)