

State of Colorado  
Oil and Gas Conservation Commission

1120 Lincoln Street, Suite 801, Denver, Colorado 80203  
Phone: (303) 894-2100 Fax: (303) 894-2109



Document Number:  
403059698  
Receive Date:  
06/01/2022

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 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: <u>KERR MCGEE OIL &amp; GAS ONSHORE LP</u>	Operator No: <u>47120</u>	<b>Phone Numbers</b>
Address: <u>P O BOX 173779</u>		Phone: <u>(970) 336-3500</u>
City: <u>DENVER</u>	State: <u>CO</u>	Zip: <u>80217-3779</u>
Contact Person: <u>Phil Hamlin</u>	Email: <u>Phillip_Hamlin@oxy.com</u>	Mobile: <u>( )</u>

PROJECT, PURPOSE & SITE INFORMATION

PROJECT INFORMATION

Remediation Project #: 205 Initial Form 27 Document #: 1008388

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

No  Multiple Facilities

Facility Type: <u>LOCATION</u>	Facility ID: <u>318170</u>	API #: _____	County Name: <u>WELD</u>
Facility Name: <u>SARATOGA-64N66W 33SWSW</u>	Latitude: <u>40.263639</u>	Longitude: <u>-104.788361</u>	
	** correct Lat/Long if needed: Latitude: <u>40.263023</u>	Longitude: <u>-104.788298</u>	
QtrQtr: <u>SWSW</u>	Sec: <u>33</u>	Twp: <u>4N</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 Agriculture and Livestock  
 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**

Water well located approximately 450 feet (ft) northeast, surface water located approximately 1,200 ft southwest, buildings located approximately 380 ft south, livestock located approximately 50 ft southwest, and groundwater at approximately 6 ft below ground surface (bgs).

# 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	GROUNDWATER	See attached data	Groundwater Samples/Lab Analysis
Yes	SOILS	Unknown	Soil Samples/Lab Analysis

## INITIAL ACTION SUMMARY

Description of initial action or emergency response measures take to abate, investigate, and/or remediate impacts associated with E&P Waste.

On May 20, 1994, the well operator discovered a hole in the side of an oil tank at the Saratoga 1 tank battery. Approximately 92 barrels (bbls) of crude oil were released into the bermed tank area. An unknown volume of crude oil seeped out of the tank berm onto the adjacent lease road. Approximately 40 bbls of oil were recovered from within the tank battery berm and transferred to another production tank. Basin Exploration, Inc. performed the initial site assessment in May 1994. The release was initially reported to the Colorado Oil and Gas Conservation Commission (COGCC) on August 5, 1994 via written notification.

## 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 ):

Details of the site assessment and remediation activities conducted by Basin Exploration, Inc. are summarized in a Spill Assessment and Remediation Status Report submitted to the COGCC on May 23, 1995.

In March 2005, three soil samples (MW01@12-15', MW02@12-15', and MW03@8-12') were collected from assessment soil borings MW01 through MW03 and submitted for laboratory analysis of total petroleum hydrocarbons (TPH). Laboratory analytical results indicated that the TPH concentration in soil sample MW01@12-15' exceeded the COGCC sensitive area allowable level of 1,000 milligrams per kilogram (mg/kg) at a concentration of 1,000 mg/kg. The soil samples were not analyzed for benzene, toluene, ethylbenzene, and total xylenes (BTEX) as the samples were collected prior to the April 1, 2009, COGCC rule changes.

### Proposed Groundwater Sampling

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

Quarterly groundwater monitoring has been conducted at the site since March 2005.

### 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 ):

# SITE INVESTIGATION REPORT

## SAMPLE SUMMARY

**Soil**

Number of soil samples collected 3  
Number of soil samples exceeding 915-1 1  
Was the areal and vertical extent of soil contamination delineated? No  
Approximate areal extent (square feet) 0

**NA / ND**

-- Highest concentration of TPH (mg/kg) 5000  
NA Highest concentration of SAR \_\_\_\_\_  
BTEX > 915-1 Yes  
Vertical Extent > 915-1 (in feet) 15

**Groundwater**

Number of groundwater samples collected 936  
Was extent of groundwater contaminated delineated? Yes  
Depth to groundwater (below ground surface, in feet) 6  
Number of groundwater monitoring wells installed 36  
Number of groundwater samples exceeding 915-1 319

-- Highest concentration of Benzene (µg/l) 19000  
-- Highest concentration of Toluene (µg/l) 230  
-- Highest concentration of Ethylbenzene (µg/l) 2900  
-- Highest concentration of Xylene (µg/l) 21000  
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?

Petroleum hydrocarbon impacts to groundwater are present in monitoring wells in the adjoining agricultural field northwest of the tank battery facility. The monitoring well locations and general site layout are depicted in the Site Map attached as Figure 1.

Were background samples collected as part of this site investigation?

\_\_\_\_\_

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.

Please refer to the Form 27 submitted to the COGCC on May 11, 2015. Details of the site assessment and remediation activities conducted by Basin Exploration, Inc. are summarized in a Spill Assessment and Remediation Status Report submitted to the COGCC on May 23, 1995.

Based on the March 2005 subsurface soil assessment, petroleum hydrocarbon impacts to soil remain in place in the vicinity of soil boring/monitoring well MW01.

**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.

Remedial options are under evaluation.

**Soil Remediation Summary**

In Situ

Ex Situ

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

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

Chemical oxidation  
 Air sparge / Soil vapor extraction  
 Natural Attenuation  
 Other \_\_\_\_\_

If Yes: Estimated Volume (Cubic Yards) \_\_\_\_\_  
 Name of Licensed Disposal Facility or COGCC Facility ID # \_\_\_\_\_  
 Excavate and onsite remediation  
 Land Treatment  
 Bioremediation (or enhanced bioremediation)  
 Chemical oxidation  
 Other \_\_\_\_\_

**Groundwater Remediation Summary**

Yes Bioremediation ( or enhanced bioremediation )  
 No Chemical oxidation  
 No Air sparge / Soil vapor extraction  
 Yes Natural Attenuation  
 Yes Other Groundwater Removal and Microbial/Nutrient Application

**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.

Groundwater monitoring wells MW01R, MW02, MW03R, MW04, MW05, MW07, MW09 through MW14, MW15R, MW17 through MW20, MW21R, and MW22 through MW29 are sampled on a quarterly basis for the full list of analyses for groundwater in Table 915-1. Cross-gradient and historically compliant groundwater monitoring well MW17 was established as a representative background sample for calculating the inorganic parameters in Table 915-1. Based on a comparison to background concentrations, point-of-compliance (POC) monitoring wells MW24, MW25, and MW28 was above the Table 915-1 standards for inorganic constituents during the First Quarter 2022 monitoring event. Kerr-McGee will continue to evaluate POC for Table 915-1 on a quarterly basis based on the site-specific local background concentrations. The monitoring well locations are depicted on Figure 1. The Groundwater Elevation Contour Map generated using the March 2022 survey data is provided as Figure 2. The groundwater analytical results are summarized in Table 1, and the laboratory analytical reports for the June 2021, September 2021, December 2021, and March 2022 groundwater monitoring events are attached.

Groundwater monitoring will continue on a quarterly basis until a No Further Action status request is warranted.

# 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 \_\_\_\_\_

## WASTE DISPOSAL INFORMATION

Was E&P waste generated as part of this remediation?    No

Describe beneficial use, if any, of E&P Waste derived from this remediation project:

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

E&P waste (solid) description \_\_\_\_\_

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

Non-COGCC Disposal Facility: \_\_\_\_\_

Volume of E&P Waste (liquid) in barrels \_\_\_\_\_

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?    No

Does the previous reply indicate consideration of background concentrations? \_\_\_\_\_

Does Groundwater meet Table 915-1 standards?    No

Is additional groundwater monitoring to be conducted?    Yes

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 Kerr-McGee production facility remains at the site.

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? \_\_\_\_\_

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. 11/30/2020

Actual Spill or Release date, or date of discovery. 05/20/1994

### SITE INVESTIGATION DATES

Date of Initial Actions described in Site Investigation Plan (start date). 05/20/1994

Proposed site investigation commencement. 07/14/1994

Proposed completion of site investigation. 12/09/2020

### REMEDIAL ACTION DATES

Proposed start date of Remediation. 05/20/1994

Proposed date of completion of Remediation. 05/31/2027

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**

--

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

Signed: Phil Hamlin

Title: Senior Environmental Rep.

Submit Date: 06/01/2022

Email: Phillip\_Hamlin@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: Kari Brown

Date: 06/21/2022

Remediation Project Number: 205

**Condition of Approval****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**

403059698	FORM 27-SUPPLEMENTAL-SUBMITTED
403059812	SITE MAP
403059813	GROUND WATER ELEVATION MAP
403059815	ANALYTICAL RESULTS

Total Attach: 4 Files

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

		Stamp Upon Approval
--	--	---------------------

Total: 0 comment(s)