

State of Colorado  
Oil and Gas Conservation Commission

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403347341  
Receive Date:  
03/15/2023  
Report taken by:  
Krystal Heibel

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: FUNDARE RESOURCES OPERATING COMPANY Operator No: 10773  
LLC  
Address: 5251 DTC PKWY STE 950  
City: GREENWOOD VILLAGE State: CO Zip: 80111  
Contact Person: Sydney Smith Email: ssmith@fundareresources.com  
Phone Numbers  
Phone: (303) 910-4511  
Mobile: ( )

PROJECT, PURPOSE & SITE INFORMATION

PROJECT INFORMATION

Remediation Project #: 9147 Initial Form 27 Document #: 2314935

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: SPILL OR RELEASE Facility ID: 441436 API #: County Name: WELD  
Facility Name: SPILL/RELEASE POINT Latitude: 40.172282 Longitude: -104.874173  
\*\* correct Lat/Long if needed: Latitude: Longitude:  
QtrQtr: NWNE Sec: 3 Twp: 2N Range: 67W 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? Yes  
Is groundwater less than 20 feet below ground surface? Yes

**Other Potential Receptors within 1/4 mile**

An occupied building is located approximately 550 feet north of the release location.

**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 sampling and laboratory analysis
Yes	SOILS	39' (N-S) x 30' (E-W) x 3' bgs	Excavation, soil sampling, and laboratory 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 March 31, 2015, historical impacts were discovered adjacent to the Richardson V 3-2 wellhead during abandonment activities. The well was shut in, associated underground infrastructure removed, and excavation activities were initiated. Groundwater was encountered in the excavation at approximately 3 feet below ground surface (bgs). The COGCC has issued Spill/Release Point ID 441436 for this release.

**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 ):

Soil samples were collected as described in the Initial Form 27. Based on the data presented, impacted soils in the excavation area were remediated to be in full compliance with State standards. Soil sample analytical data is presented in Table 1, and soil sample locations are illustrated on Figure 1.

**Proposed Groundwater Sampling**

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

Groundwater samples were collected as described herein. Based on the data presented, hydrocarbon impacts to groundwater were remediated to be in full compliance with State standards. Groundwater analytical data is presented in Table 2. The excavation groundwater sample location is illustrated on Figure 1, and the temporary groundwater monitoring well locations are illustrated on Figure 2. The laboratory analytical reports are included as Attachment A.

**Proposed Surface Water Sampling**

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

[Empty text box for surface water sampling details]

**Additional Investigative Actions**

Additional alternative investigative actions described in attached Site Investigation Plan ( summary ):

[Empty text box for additional investigative actions]

**SITE INVESTIGATION REPORT**

## SAMPLE SUMMARY

### Soil

Number of soil samples collected 9  
Number of soil samples exceeding 915-1 5  
Was the areal and vertical extent of soil contamination delineated? Yes  
Approximate areal extent (square feet) 1170

### NA / ND

ND Highest concentration of TPH (mg/kg) \_\_\_\_\_  
NA Highest concentration of SAR \_\_\_\_\_  
BTEX > 915-1 No  
Vertical Extent > 915-1 (in feet) 3

### Groundwater

Number of groundwater samples collected 37  
Was extent of groundwater contaminated delineated? Yes  
Depth to groundwater (below ground surface, in feet) 5  
Number of groundwater monitoring wells installed 5  
Number of groundwater samples exceeding 915-1 2

-- Highest concentration of Benzene (µg/l) 1740  
-- Highest concentration of Toluene (µg/l) 7470  
-- Highest concentration of Ethylbenzene (µg/l) 494  
-- Highest concentration of Xylene (µg/l) 6660  
NA Highest concentration of Methane (mg/l) \_\_\_\_\_

### Surface Water

0 Number of surface water samples collected  
0 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?

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.

Between March 31 and April 8, 2015, approximately 110 cubic yards of impacted soil were excavated and transported to the Front Range Regional Landfill in Erie, Colorado for disposal. Laboratory analytical results indicated that constituent concentrations in the soil samples collected from the final lateral extent of the excavation area were in full compliance with State standards. Soils were excavated into the phreatic zone to address potential hydrocarbon impacts that may have been present below the current groundwater table due to seasonal fluctuations. Groundwater was encountered in the excavation at approximately 3 feet bgs. A groundwater sample (GW01) was collected from the excavation following the removal of approximately 50 barrels of groundwater, and submitted for laboratory analysis of BTEX. Groundwater analytical results received on April 1, 2015, indicated that the benzene, toluene, and total xylenes concentrations in sample GW01 were out of compliance with State standards. A second groundwater sample (GW02) was collected from the excavation following the removal of approximately 50 additional barrels of groundwater, and submitted for laboratory analysis of BTEX. Analytical results received on April 10, 2015, indicated that the benzene, toluene, and total xylenes concentrations in sample GW02 remained out of compliance with State standards.

## REMEDICATION 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.

Prior to backfilling, approximately 50 pounds of activated carbon were added to the groundwater within the excavation area to mitigate remaining hydrocarbon impacts in groundwater. Based on the analytical data presented herein, remediation is complete at this site and Kerr-McGee is requesting a No Further Action (NFA) determination for this release.

### Soil Remediation Summary

In Situ

Ex Situ

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

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

\_\_\_\_\_ Chemical oxidation

If Yes: Estimated Volume (Cubic Yards) \_\_\_\_\_ 110

\_\_\_\_\_ 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

No \_\_\_\_\_ Bioremediation ( or enhanced bioremediation )

No \_\_\_\_\_ Chemical oxidation

No \_\_\_\_\_ Air sparge / Soil vapor extraction

Yes \_\_\_\_\_ Natural Attenuation

Yes \_\_\_\_\_ Other Activated carbon adsorption \_\_\_\_\_

### 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.

Between February 16, 2016 and March 27, 2017, five (5) temporary groundwater monitoring wells (BH01 - BH05) were installed at the site to assess the extent of groundwater impacts. However, due to landowner constraints, the 5 temporary monitoring wells were abandoned prior to the Fourth Quarter 2017 sampling event. Groundwater monitoring activities were continued at 5 temporary grab sampling points (BH01R - BH05R) that were installed via hand auger in the locations of the initial 5 temporary monitoring wells each quarter, sampled, and abandoned the same day. Groundwater samples were collected on a quarterly basis and submitted for laboratory analysis of BTEX. Analytical results for the groundwater samples collected from the temporary monitoring wells and temporary grab sampling points indicated that constituent concentrations were in full compliance with State standards for a minimum of four consecutive quarters. Temporary monitoring well and temporary grab groundwater sample locations are illustrated on Figure 2, and quarterly groundwater contour maps for the Second Quarter 2016 through First Quarter 2017 are presented on Figures 3, 4, 5, and 6. Groundwater contour maps for subsequent sampling events are not included, as the temporary grab groundwater sampling points were not surveyed. Well completion logs for the initial temporary monitoring wells (BH01 - BH05) are included as Attachment B.

# 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.

Operator anticipates the remaining cost for this project to be: \$ \_\_\_\_\_

## 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 110

E&P waste (solid) description Hydrocarbon impacted soil

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

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

Volume of E&P Waste (liquid) in barrels 100

E&P waste (liquid) description Hydrocarbon impacted groundwater

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

Non-COGCC Disposal Facility: Licensed 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? Yes

Does the previous reply indicate consideration of background concentrations? No

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 has been restored to its pre-release grade. Kerr-McGee will consult with the surface owner to determine reclamation specifics to properly conduct reclamation activities in accordance with COGCC 1000 Series Rules.

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. \_\_\_\_\_

Actual Spill or Release date, or date of discovery. \_\_\_\_\_

### SITE INVESTIGATION DATES

Date of Initial Actions described in Site Investigation Plan (start date). 03/31/2015

Proposed site investigation commencement. 03/31/2015

Proposed completion of site investigation. 03/27/2017

### REMEDIAL ACTION DATES

Proposed start date of Remediation. 03/31/2015

Proposed date of completion of Remediation. 06/28/2018

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: Sydney Smith

Title: Director EHSR

Submit Date: 03/15/2023

Email: ssmith@fundareresources.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: 9147

**COA Type****Description**

	<p>Note: for the Fundare Remediation Project #9146 associated with Fundare Spill ID #441208. Operator shall:</p> <ul style="list-style-type: none"> <li>-Submit a replacement Form 27 referencing the correct Remediation Project # and Spill ID # and fully populate the form with the correct and relevant information</li> <li>-Return MW-9 through MW-11, MW-26, MW-28 through MW-31 to the monitoring program as data provided indicates the need for additional site characterization and quarterly monitoring to ensure point of compliance is maintained.</li> <li>-adhere to Table 915-1 Cleanup Concentrations and begin sampling for all Organic Compounds in Groundwater (benzene, toluene, ethylbenzene, xylenes, naphthalene, 1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene) and the Groundwater Inorganic Parameters (total dissolved solids, chloride, sulfate).</li> </ul>
1 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**

403347341	FORM 27 DENIED
403347342	MONITORING REPORT
403451070	FORM 27-SUPPLEMENTAL-SUBMITTED
403451071	DENIED FORM 27 DENIED

Total Attach: 4 Files

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

Environmental	This Form 27 cannot be approved based on the information submitted. Therefore Document ID #403347341 will be denied. The Operator is directed to submit a replacement form.	03/23/2023
Environmental	Subject form references Kerr McGee Remediation Project #9147 and Kerr McGee Spill ID #441436 for the Richardson V 3-2 wellhead; However, the Operator is listed as Fundare and the supporting documentation attached references the Fundare Remediation Project #9146 and Fundare Spill ID #441208.	03/23/2023

Total: 2 comment(s)