

State of Colorado Oil and Gas Conservation Commission

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Receive Date:

03/30/2023

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

PROJECT, PURPOSE & SITE INFORMATION

PROJECT INFORMATION

Remediation Project #: 15397 Initial Form 27 Document #: 402363826

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: <u>LOCATION</u>	Facility ID: <u>460754</u>	API #: _____	County Name: <u>WELD</u>
Facility Name: <u>Terrace Gas Plant</u>	Latitude: <u>40.845550</u>	Longitude: <u>-103.908040</u>	
** correct Lat/Long if needed: Latitude: _____		Longitude: _____	
QtrQtr: <u>NENW</u>	Sec: <u>18</u>	Twp: <u>10N</u>	Range: <u>58W</u> Meridian: <u>6</u> Sensitive Area? <u>Yes</u>

Facility Type: <u>SPILL OR RELEASE</u>	Facility ID: <u>468836</u>	API #: _____	County Name: <u>WELD</u>
Facility Name: <u>Terrace Gas Plant</u>	Latitude: <u>40.845550</u>	Longitude: <u>-103.908040</u>	
** correct Lat/Long if needed: Latitude: _____		Longitude: _____	
QtrQtr: <u>NENW</u>	Sec: <u>18</u>	Twp: <u>10N</u>	Range: <u>58W</u> Meridian: <u>6</u> Sensitive Area? <u>Yes</u>

SITE CONDITIONS

General soil type - USCS Classifications GM

Most Sensitive Adjacent Land Use Rangeland

Is domestic water well within 1/4 mile? No

Is surface water within 1/4 mile? No

Is groundwater less than 20 feet below ground surface? No

Other Potential Receptors within 1/4 mile

A review of Colorado's DWR Well Permit Resource data identified one (1) geophysical log well approximately 410 feet southeast from the Site. The indicating depth to non-alluvial groundwater based on this well is 104 feet bgs. Surface water is present in the area in the form of ephemeral streams and small reservoirs, but notable drainages are more than ¼ mile from the Site.

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	Full extent unknown; known MW1	Monitor well
Yes	SOILS	~100'x100'	soil borings

INITIAL ACTION SUMMARY

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

A Form 19 (Release Point ID 468836) was previously submitted. Hydrocarbon impacted soils was discovered during decommissioning of the facility. The historical impacts were removed via mechanical excavation. Due to the depth of the impacts, soil borings were advanced to delineate the impacts.

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):

During the decommissioning of the facility soil impacts were discovered. A minimum of two bottom hole and four sidewall grab samples will be collected and analyzed for BTEX and TPH.

Proposed Groundwater Sampling

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

Quarterly groundwater monitoring will be conducted at this site to include gauging and sampling of all monitor wells that do not contain phase separated hydrocarbons (PSH). Groundwater will be analyzed for BTEX.

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 41

Number of soil samples exceeding 915-1 4

Was the areal and vertical extent of soil contamination delineated? No

NA / ND

-- Highest concentration of TPH (mg/kg) 4300

NA Highest concentration of SAR

BTEX > 915-1 Yes

Approximate areal extent (square feet) 10000

Vertical Extent > 915-1 (in feet) 35

Groundwater

Number of groundwater samples collected 35

-- Highest concentration of Benzene (µg/l) 5500

Was extent of groundwater contaminated delineated? No

-- Highest concentration of Toluene (µg/l) 8600

Depth to groundwater (below ground surface, in feet) 49

-- Highest concentration of Ethylbenzene (µg/l) 1900

Number of groundwater monitoring wells installed 6

-- Highest concentration of Xylene (µg/l) 4800

Number of groundwater samples exceeding 915-1 15

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) 3

Volume of liquid waste (barrels) 1

☒ Is further site investigation required?

The COGCC requested on Form 27 Doc# 403159053 the COAs to install additional monitoring wells to fully define the horizontal extent of impacts to groundwater and to also collect soil samples from intervals displaying the highest degree of impacts during monitoring well installation. Further site investigation is needed to adequately address these COAs, which will include confirm of groundwater gradient by resurveying each monitoring well top of casing and conduct a bail-down test to determine PSH transmissivity (if possible). These items are needed to determine the optimal placement of additional monitoring wells and develop an effective remediation strategy moving forward. Fundare is requesting to propose monitoring well locations, as required, on the next quarterly report pending results of this investigation. COGCC Table 915-1 contaminants of concern and cleanup concentration limits will be used for soil samples during monitoring well installation.

REMEDIAL ACTION PLAN

Does this Supplemental Form 27A include changes to a previously approved Remedial Action Plan? Yes

SOURCE REMOVAL SUMMARY

Describe how source is to be removed.

Impacted soils were excavated to a depth of 20 feet below ground surface (bgs) and remediated on site. Impacted soils continued deeper than 20 feet bgs and beyond what could be safely excavated. so it was determined remediated would commence in-situ. Stockpiled soils from the excavation were sampled and used to backfill the excavation. Six (6) groundwater monitoring wells have been installed.

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.

Further site investigation in 1Q2023 will provide basis for further investigation with additional monitoring wells and development of an aggressive remediation strategy in 2Q2023 that will commence in 3Q2023.

Soil Remediation Summary☐ In Situ☐ Ex Situ

Bioremediation (or enhanced bioremediation)

Excavate and offsite disposal

Chemical oxidation

If Yes: Estimated Volume (Cubic Yards) 300

Air sparge / Soil vapor extraction

Name of Licensed Disposal Facility or COGCC Facility ID #

Natural Attenuation

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.

Groundwater sampling is to occur in wells that do not contain PSH. Quarterly monitoring will continue in 1Q2023.

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.

Fundare Resources has the following listed bonds in place with the COGCC.

20210060 ACTIVE SURFACE \$25,000.00 BLANKET 8/31/2021 INSURANCE B013680

20210061 ACTIVE PLUGGING \$100,000.00 BLANKET 8/31/2021 INSURANCE B013670

20210062 ACTIVE GAS FACILITY \$50,000.00 BLANKET 8/31/2021 INSURANCE B013675

20210063 ACTIVE PLUGGING \$240,000.00 EXCESS INACTIVE 8/31/2021 INSURANCE B013671

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 2700

E&P waste (solid) description Impacted Soil

COGCC Disposal Facility ID #, if applicable:

Non-COGCC Disposal Facility: Pawnee Waste

Volume of E&P Waste (liquid) in barrels 1

E&P waste (liquid) description Purge water

COGCC Disposal Facility ID #, if applicable: 440165

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?

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 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.

A reclamation plan will be prepared pending the outcome of site and remediation investigation.

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. 10/21/2019

Actual Spill or Release date, or date of discovery. 10/21/2019

SITE INVESTIGATION DATES

Date of Initial Actions described in Site Investigation Plan (start date). 10/21/2019

Proposed site investigation commencement. 10/21/2019

Proposed completion of site investigation. 06/30/2023

REMEDIAL ACTION DATES

Proposed start date of Remediation. 07/01/2023

Proposed date of completion of Remediation. 07/01/2026

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

A narrative report and supportive information are attached to this Form 27 Supplemental Report to provide a summary of 4Q2022 quarterly monitoring and proposed actions for Remediation Project 15397.

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: 03/30/2023

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: Krystal Heibel

Date: 04/28/2023

Remediation Project Number: 15397

COA Type**Description**

	Operator shall submit a minimum of one soil sample for laboratory analysis of Table 915 - 1 Parameters from each soil boring advanced during monitoring well installation. The sample collected will be from the interval(s) displaying the highest degree of impacts.
	Groundwater monitoring will continue quarterly until four consecutive quarters of results below Table 915-1 standards are achieved. Operator shall submit Quarterly Monitoring Reports including all laboratory analytical reports for all samples collected during the reporting period.
	As previously requested in Doc # 403159053, to be in accordance with Rule 915 additional monitoring well(s) are required to define the horizontal extent of impacts to groundwater. A downgradient well to the southwest of MW-1 is required to establish point of compliance. Note: More than one well may be required to obtain a point of compliance depending on laboratory analytical results and changes in groundwater flow direction. This shall be completed within 90 days July 26, 2023.
	Operator shall provide a comprehensive list of all potential receptors within ¼ mile on the subsequent Supplemental Form 27. Location lies within the following mapped High Priority Habitat(s): Mule Deer Severe Winter Range
4 COAs	

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**

403360478	FORM 27-SUPPLEMENTAL-SUBMITTED
403360483	MONITORING REPORT

Total Attach: 2 Files

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

		Stamp Upon Approval
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Total: 0 comment(s)