

State of Colorado
Energy & Carbon Management Commission

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Document Number:
403571437
Receive Date:
10/31/2023

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>FOUNDATION ENERGY MANAGEMENT LLC</u>	Operator No: <u>10112</u>	Phone Numbers
Address: <u>5057 KELLER SPRINGS RD STE 650</u>		Phone: <u>(972) 707-2523</u>
City: <u>ADDISON</u>	State: <u>TX</u>	Zip: <u>75001</u>
Contact Person: <u>Afton Iiams</u>	Email: <u>aiiams@foundationenergy.com</u>	
		Mobile: <u>()</u>

PROJECT, PURPOSE & SITE INFORMATION

PROJECT INFORMATION

Remediation Project #: 18082 Initial Form 27 Document #: 402672665

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>303271</u>	API #: _____	County Name: <u>YUMA</u>
Facility Name: <u>GROSECLOSE-64S43W 30SWNE</u>		Latitude: <u>39.682895</u>	Longitude: <u>-102.222671</u>
		** correct Lat/Long if needed: Latitude: _____	Longitude: _____
QtrQtr: <u>SWNE</u>	Sec: <u>30</u>	Twp: <u>4S</u>	Range: <u>43W</u> Meridian: <u>6</u> Sensitive Area? <u>Yes</u>

SITE CONDITIONS

General soil type - USCS Classifications SM Most Sensitive Adjacent Land Use Cropland
 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? No

Other Potential Receptors within 1/4 mile

The site lies within a Designated Groundwater Management Area and a Designated Basin. An intermittent tributary of Sand creek is 0.22 miles north of 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
UNDETERMINED	SOILS	TBD	Field screening and sampling

INITIAL ACTION SUMMARY

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

Foundation Energy Management (FEM) has conducted soil sampling to document conditions beneath former equipment locations at the Groseclose 32-30 well location (ID:303271) through observation, field screening, and laboratory analysis.

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):

A total of 10 samples were collected via hand auger at 5 locations on 6/29/23 (Figure 2). Samples were taken at multiple depths to delineate the affected area and analyzed for Table 915-1 soil suitability, metals, and TPH analyses. Previous results did not indicate VOCs were present onsite and they were therefore not analyzed. Groundwater was not encountered onsite and online DWR investigation into nearby wells showed depths to water greater than 100 ft. FEM is requesting to adhere to Residential Standards. The metals lab results were all below Residential Standards, except arsenic. However, arsenic is believed to be indicative of natural conditions at the site (Appendix A). The analytical results are attached in Tables 1-2.

Based on the information provided within this report, FEM is proposing a reduced analysis plan consisting of Soil Suitability constituents (pH, EC, SAR and boron) and metals with exceedances (Table 3), as well as adhering to Residential Standards.

Proposed Groundwater Sampling

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

FEM does not anticipate performing groundwater monitoring at the Site. Groundwater has not been encountered onsite and an online DWR investigation into nearby monitoring wells showed depths to groundwater at over 200 feet. FEM is requesting Residential Soil 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):

SITE INVESTIGATION REPORT

SAMPLE SUMMARY

Soil

Number of soil samples collected 5
Number of soil samples exceeding 915-1 5
Was the areal and vertical extent of soil contamination delineated? Yes
Approximate areal extent (square feet) 0

NA / ND

ND Highest concentration of TPH (mg/kg) _____
NA Highest concentration of SAR _____
BTEX > 915-1 No
Vertical Extent > 915-1 (in feet) 2

Groundwater

Number of groundwater samples collected 0
Was extent of groundwater contaminated delineated? No
Depth to groundwater (below ground surface, in feet) _____
Number of groundwater monitoring wells installed _____
Number of groundwater samples exceeding 915-1 _____

_____ Highest concentration of Benzene (µg/l) _____
_____ Highest concentration of Toluene (µg/l) _____
_____ Highest concentration of Ethylbenzene (µg/l) _____
_____ Highest concentration of Xylene (µg/l) _____
_____ 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?

FEM proposes a reduced soil sampling suite based on analytical results not showing detections of Table 915 organics (Table 3). Based on additional background collection, if warranted, FEM would also request removal of certain metals from the sampling plan, specifically arsenic and barium.

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.

FEM has conducted soil sampling beneath former equipment locations at the Groseclose 32-30 well site with the goal of delineating any potential impacts at the Site. June 2023 analytical results indicate no impacts above Residential standards and/or local background concentrations for inorganic or organic results.

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.

Soil sampling conducted onsite indicated no impacts above Residential standards and/or local background concentrations. Following ECMC approval of an NFA determination, the Site will be reclaimed in accordance with 1000 series rules.

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

_____ 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.

FEM does not anticipate performing groundwater monitoring at the Site. Groundwater has not been encountered onsite and an online DWR investigation into nearby monitoring wells showed depths to groundwater at over 200 feet. FEM is requesting Residential Soil Standards.

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 FEM is requesting an NFA determination for this Site. _____

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.

Foundation carries both pollution liability insurance and an umbrella policy over that for a total of \$11,000,000. Cost provided below is an estimate and may be adjusted based on Site observations.

Operator anticipates the remaining cost for this project to be: \$ 0 _____

WASTE DISPOSAL INFORMATION

Was E&P waste generated as part of this remediation? _____

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? 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.

Following ECOM approval of an NFA determination, final reclamation will be performed in accordance with the 1000 series rules. If warranted, FEM will mix in topsoil and reseed the location with a seed mix approved by the surface owner during the next favorable season, and weed spraying will be utilized for weed prevention until final reclamation has been achieved.

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. 10/31/2023

Proposed date of completion of Reclamation. 12/31/2024

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. _____

Actual Spill or Release date, or date of discovery. _____

SITE INVESTIGATION DATES

Date of Initial Actions described in Site Investigation Plan (start date). _____

Proposed site investigation commencement. 05/19/2021

Proposed completion of site investigation. 06/29/2023

REMEDIAL ACTION DATES

Proposed start date of Remediation. 05/19/2021

Proposed date of completion of Remediation. 06/29/2023

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

This Supplemental Form 27 is being submitted to outline the site plan for the no further action of the Groseclose 32-30 facility (Location ID:303271). A summary of the June 29, 2023 analytical results, as well as historical results, is presented in Tables 1-2 and shown in Figure 2. Photographs from the four cardinal directions during the September 29, 2023 Site visit are included in Appendix B.

All samples were below Table 915 Residential Standards for organic and inorganic analysis, except for arsenic and barium. All five samples were above the Residential Standard for arsenic, while all 5 samples only exceeded the Protection of Groundwater Standard for barium. Colorado's arsenic guidelines show the lower range of background concentrations for Colorado native grassland, rangeland, or agriculture at 3-14 mg/kg (Appendix A). The USGS's survey data shows the average barium concentration in northeastern Colorado at greater than 574-647 mg/kg.

The site topography is level across the site and the lithology is typical for the eastern plains and consistent onsite composed primarily of dry, clayey sand to sandy clay. With groundwater not being encountered onsite and depths to water shown at greater than 200 feet (Figure 3), FEM is requesting to adhere to Residential Standards. FEM believes that the metals are representative of native conditions and requests that organics and TPH be removed from the future analysis plan at this Site since they do not pose a risk to human health or the environment. A proposed sampling analysis plan is shown in Table 3 which includes Table 915 soil suitability parameters, as well as arsenic and barium. Based on additional background collection, if warranted, FEM would also request removal of certain metals from the sampling plan, specifically arsenic and barium. Barium is already below the ECMC Residential Standard.

In addition and based on 10/12/23 discussion with ECMC and in response to the conditions of approval noted on Document (#403510714), FEM has provided a bulleted list of the COAs with more information for each one to assist ECMS with any clarification of FEM requests and discussion topics as an attachment to this document. If further information is needed, please don't hesitate to contact FEM. Site progress reports will continue to be provided to the ECMC in subsequent quarterly Supplemental Form 27 reports.

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

Signed: Afton Iiams

Title: HSE/Regulatory Specialist

Submit Date: 10/31/2023

Email: aiiams@foundationenergy.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: 01/05/2024

Remediation Project Number: 18082

COA Type

Description

	It appears that the "Tank" sample from the 6/9/2021 sampling event expressed pH and SAR exceedances, and the "Tank @ 12-24" - Groseclose" from the 6/29/2023 sampling event didn't have pH and SAR exceedances. Operator shall put in writing if "Tank @ 12-24" - Groseclose" was a confirmation sample and/or if the Tank location was remediated.
	Per Doc #403510714, Operator shall indicate if the flowlines at this location will be abandoned-in-place or removed. Additional soil sampling and documentation may be required depending on the Operators plan with the flowlines. Operators will collect and submit for laboratory analysis a soil sample collected from the areas most likely to have been impacted during the operational life of the flowline. These areas include, but are not limited to: where Flowlines connect to the wellhead, surface equipment, risers, valves, or manifolds; where Flowlines bend or were repaired in the past and at joints and hammer unions; where Flowlines connect to Flowlines or equipment of different material; and where Flowlines crossed drainages or surface water or are in contact with shallow groundwater.
	Operator shall update the soil remediation program on the Remediation Action Plan tab with the next Form 27 Supplemental Report.

3 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

403571437	INVESTIGATION/REMEDATION WORKPLAN (SUPPLEMENTAL)
403571496	ANALYTICAL RESULTS

403571498	MAP
403571499	OTHER
403571501	OTHER
403646229	FORM 27-SUPPLEMENTAL-SUBMITTED

Total Attach: 6 Files

General Comments

<u>User Group</u>	<u>Comment</u>	<u>Comment Date</u>
Environmental	<p>ECMC agrees to the reduced analyte list of sampling for Table 915-1 Soil Suitability for Reclamation and Metals in Soils.</p> <p>Since background sample(s) were not collected, ECMC cannot remove Table 915-1 Metals in Soils analytes from the analyte list. Background sampling locations should be sufficiently away from the impacted area to reflect conditions not impacted by oil and gas activity, and should be obtained from similar depths and soil horizons or lithologic materials for comparison to confirmation soil samples.</p>	01/05/2024
Environmental	ECMC approves Operator's request for use of Residential SSLs based on the depth to groundwater and the local lithology suggesting a pathway to groundwater at this location is not likely.	01/05/2024

Total: 2 comment(s)