

**State of Colorado
Oil and Gas Conservation Commission**

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Document Number:

402183100

Receive Date:

09/20/2019

Report taken by:

ROB YOUNG

Site Investigation and Remediation Workplan (Initial 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.

Refer to Rules 340, 905, 906, 907, 908, 909, and 910

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>		
City: <u>ADDISON</u>	State: <u>TX</u>	Zip: <u>75001</u>
Contact Person: <u>Alyssa Beard</u>	Email: <u>abeard@foundationenergy.com</u>	
		Phone: <u>(303) 244-8114</u>
		Mobile: <u>(720) 257-2302</u>

PROJECT, PURPOSE & SITE INFORMATION

PROJECT INFORMATION

Remediation Project #: 14234 Initial Form 27 Document #: 402183100

PURPOSE INFORMATION

- | | |
|--|--|
| <input type="checkbox"/> 901.e. Sensitive Area Determination | <input type="checkbox"/> 909.c.(5), Rule 910.b.(4): Remediation of impacted ground water |
| <input type="checkbox"/> 909.c.(1), Rule 905: Pit or PW vessel closure | <input type="checkbox"/> Rule 909.e.(2)A.: Notice completion of remediation in accordance with Rule 909.b. |
| <input type="checkbox"/> 909.c.(2), Rule 906: Spill/Release Remediation | <input type="checkbox"/> Rule 909.e.(2)B.: Closure of remediation project |
| <input type="checkbox"/> 909.c.(3), Rule 907.e.: Land treatment of oily waste | <input checked="" type="checkbox"/> Rule 906.c.: Director request |
| <input type="checkbox"/> 909.c.(4), Rule 908.g.: Centralized E&P Waste Management Facility closure | <input type="checkbox"/> Other _____ |

SITE INFORMATION

N Multiple Facilities (in accordance with Rule 909.c.)

Facility Type: <u>PIT</u>	Facility ID: <u>112069</u>	API #: _____	County Name: <u>WELD</u>
Facility Name: <u>SOONER UNIT (24 WELLS)</u>	Latitude: <u>40.651460</u>	Longitude: <u>-103.869821</u>	
** correct Lat/Long if needed: Latitude: _____		Longitude: _____	
QtrQtr: _____	Sec: <u>21</u>	Twp: <u>8N</u>	Range: <u>58W</u>
Meridian: _____		Sensitive Area? <u>No</u>	

SITE CONDITIONS

General soil type - USCS Classifications SM Most Sensitive Adjacent Land Use Private land and Riverine Habitat

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

Wild Horse Creek located approximately 950 north of the Site which is classified as a Riverine Habitat (R4SBC) in the National Wetlands Inventory and is an intermittent streambed that contains flowing water only part of the year. When the water is not flowing, it may remain in isolated pools or surface water may be absent.

SITE INVESTIGATION PLAN

TYPE OF WASTE:

- | | | |
|--|--|--|
| <input checked="" type="checkbox"/> E&P Waste | <input type="checkbox"/> Other E&P Waste | <input type="checkbox"/> Non-E&P Waste |
| <input checked="" type="checkbox"/> Produced Water | <input type="checkbox"/> Workover Fluids | _____ |
| <input checked="" type="checkbox"/> Oil | <input type="checkbox"/> Tank Bottoms | |
| <input type="checkbox"/> Condensate | <input type="checkbox"/> Pigging Waste | |
| <input type="checkbox"/> Drilling Fluids | <input type="checkbox"/> Rig Wash | |
| <input type="checkbox"/> Drill Cuttings | <input type="checkbox"/> Spent Filters | |
| | <input type="checkbox"/> Pit Bottoms | |
| | <input type="checkbox"/> Other (as described by EPA) | _____ |

DESCRIPTION OF IMPACT

Impacted?	Impacted Media	Extent of Impact	How Determined
Yes	SOILS	Approximately 40' x 30' x 10' deep	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 June 18, 2015, COGCC issued Inspection 667400704 for the site indicating that remediation of the pit was required. On September 8, 2015, Foundation Energy performed impacted soil excavation activities and removed approximately 23 tons (18cy) of soil from the site for disposal. Soil samples were collected from the extents of the excavation at the locations illustrated on Figure 2 and submitted for laboratory analysis of BTEX, TPH-GRO/DRO, pH, EC, SAR, Organics, and Geochemical analysis. The laboratory results are summarized on Table 1 and the laboratory analytical report is attached. Based on the laboratory analytical results, Foundation energy performed additional soil removal activities and on February 1, 2016, a supplemental soil sampling event was conducted at the locations illustrated on Figure 2. The soil sample analytical data are summarized on Table 1 and the laboratory analytical report is attached. In accordance with the August 30, 2019 COGCC Inspection Document #688000335, Foundation Energy is requesting closure of Remediation #9288 and issuance of a new Remediation Number for closure of the tinhorn (culvert) and the partially buried oil skim tank.

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):

In accordance with the August 30, 2019 COGCC Inspection Document #688000335, Foundation Energy is requesting closure of Remediation #9288 and issuance of a new Remediation Number for closure of the tinhorn (culvert) and the partially buried oil skim tank. Subsequent to removal of the tinhorn and oil skim tank and excavation/removal of impacted soil, samples will be collected from the extents of the excavation and submitted for laboratory analysis of BTEX and TPH-GRO using USEPA Method 8260B and TPH-DRO using USEPA Method 8015 and pH, EC, and SAR. These activities will be performed within 60 days from the submittal date of this document. The Sooner Unit is going to be plugged and the pit is no longer in use. The removal of the tinhorn and vault are being done in conjunction with entire pit closure.

Proposed Groundwater Sampling

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

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 13

Number of soil samples exceeding 910-1 5

Was the areal and vertical extent of soil contamination delineated? Yes

Approximate areal extent (square feet) 1200

NA / ND

-- Highest concentration of TPH (mg/kg) 8280

-- Highest concentration of SAR 18.8

BTEX > 910-1 Yes

Vertical Extent > 910-1 (in feet) 10

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 910-1

 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

 Number of surface water samples exceeding 910-1

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) 18

Volume of liquid waste (barrels) 0

Is further site investigation required?

REMEDIAL ACTION PLAN

SOURCE REMOVAL SUMMARY

Describe how source is to be removed.

The tinhorn (culvert) and the oil skim tank will be removed and potentially impacted soils will be excavated for subsequent disposal.

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.

The tinhorn (culvert) and the oil skim tank were removed 9/19/19. Impacted soils will be excavated for subsequent disposal. Soil samples will be collected from the extents of the excavation and submitted for laboratory analysis of BTEX and TPH-GRO using USEPA Method 8260B, TPH-DRO using USEPA Method 8015, pH, EC, and SAR. These activities will be performed within 60 days from the submittal date of this document.

Soil Remediation Summary

In Situ

- Bioremediation (or enhanced bioremediation)
- Chemical oxidation
- Air sparge / Soil vapor extraction
- Natural Attenuation
- Other _____

Ex Situ

- Yes Excavate and offsite disposal
- If Yes: Estimated Volume (Cubic Yards) _____ 100
- 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.

REMEDIATION PROGRESS UPDATE

PERIODIC REPORTING

Frequency: Quarterly Semi-Annually Annually Other Once the investigation and remediation is complete, a Form 27 will be submitted for COGCC approval.

Report Type: Groundwater Monitoring Land Treatment Progress Report O&M Report
 Other Tinhorn and oil skim tank removal

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:

Disposal

Volume of E&P Waste (solid) in cubic yards 18

E&P waste (solid) description Petroleum hydrocarbon impacted soil

COGCC Disposal Facility ID #, if applicable: _____

Non-COGCC Disposal Facility: North Weld Landfill

Volume of E&P Waste (liquid) in barrels 0

E&P waste (liquid) description _____

COGCC Disposal Facility ID #, if applicable: _____

Non-COGCC Disposal Facility: _____

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.

Once the tinhorn and Oil skim tank are removed and impacted soil is removed, the former pit area will be reclaimed as part of the larger reclamation effort of the entire Sooner Unit.

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 approve the seed mix? _____

If NO, does the seed mix comply with local soil conservation district recommendations? _____

IMPLEMENTATION SCHEDULE

PRIOR DATES

Date of Surface Owner notification/consultation, if required. _____

Actual Spill or Release date, if known. _____

SITE INVESTIGATION DATES

Date of Initial Actions described in Site Investigation Plan (start date). 09/08/2015

Date of commencement of Site Investigation. 09/08/2015

Date of completion of Site Investigation. 11/04/2019

REMEDIAL ACTION DATES

Date of commencement of Remediation. 09/08/2015

Date of completion of Remediation. _____

SITE RECLAMATION DATES

Date of commencement of Reclamation. _____

Date of completion of Reclamation. _____

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: Alyssa Beard _____

Title: EHS Manager _____

Submit Date: 09/20/2019 _____

Email: abeard@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: ROB YOUNG _____

Date: 09/24/2019 _____

Remediation Project Number: 14234 _____

COA Type

Description

	Submit an eForm 27 requesting closure of Rem #9288 referencing the Remediation Project Number from this approved form (402183100).
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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

402183100	FORM 27-INITIAL-SUBMITTED
402184356	ANALYTICAL RESULTS

Total Attach: 2 Files

General Comments

User Group

Comment

Comment Date

		Stamp Upon Approval
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Total: 0 comment(s)