

State of Colorado  
Oil and Gas Conservation Commission

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Document Number:  
401815703  
Receive Date:  
10/30/2018

Report taken by:  
PETER GINTAUTAS

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.

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

OPERATOR INFORMATON

Name of Operator: SRC ENERGY INC	Operator No: 10311	<b>Phone Numbers</b>
Address: 1675 BROADWAY SUITE 2600		Phone: (970) 4755220
City: DENVER State: CO Zip: 80202		Mobile: ( )
Contact Person: Dave Castro	Email: dcastro@srcenergy.com	

PROJECT, PURPOSE & SITE INFORMATION

**PROJECT INFORMATION**  
Remediation Project #: 9949 Initial Form 27 Document #: 200440744

**PURPOSE INFORMATION**

<input type="checkbox"/> 901.e. Sensitive Area Determination	<input checked="" 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 checked="" 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 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 Facilites ( in accordance with Rule 909.c. )

Facility Type: TANK BATTERY	Facility ID: 426021	API #: _____	County Name: WELD
Facility Name: NELSON TANK BATTERY	Latitude: 40.347560	Longitude: -104.907030	
	** correct Lat/Long if needed: Latitude: 40.347524	Longitude: -104.906878	
QtrQtr: NENE	Sec: 5	Twp: 4N	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? No Is surface water within 1/4 mile? No

Is groundwater less than 20 feet below ground surface? Yes

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

no potential receptors within 1/4 mile

# 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 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	GROUNDWATER	excavation	sampling
Yes	SOILS	60ft X 45ft X 9ft deep	excavation/sampling/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.

as described in submitted site investigation plan

## 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, excavation of impacted soil material completed, and soil results and figures submitted with document number 2527567. Excavation was backfilled with clean structural fill material. Eagle Environmental then installed 8 monitoring wells at the site and collected soil samples from 7 of the wellbores. MW-05 was installed in the clean backfilled excavation, so a sample from that wellbore was not collected. The soil samples were tested for BTEX, DRO, and GRO.

### Proposed Groundwater Sampling

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

Eagle Environmental installed 8 monitoring wells at the site to determine groundwater impact extents. Water samples were collected and analyzed for BTEX in all 4 quarters of 2017 and the first 3 quarters of 2018, to-date.

### 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 0

Number of soil samples exceeding 910-1         

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

Approximate areal extent (square feet) 0

### NA / ND

NA Highest concentration of TPH (mg/kg)         

NA Highest concentration of SAR         

BTEX > 910-1 No

Vertical Extent > 910-1 (in feet) 0

### Groundwater

Number of groundwater samples collected 56

Was extent of groundwater contaminated delineated? Yes

Depth to groundwater (below ground surface, in feet) 6'

Number of groundwater monitoring wells installed 8

Number of groundwater samples exceeding 910-1 15

-- Highest concentration of Benzene (µg/l) 231

-- Highest concentration of Toluene (µg/l) 52.6

-- Highest concentration of Ethylbenzene (µg/l) 90.1

-- Highest concentration of Xylene (µg/l) 1710

NA 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)         

Volume of liquid waste (barrels)         

Is further site investigation required?

continued quarterly monitoring

# 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.

Pit was removed, impacted soils excavated, excavation backfilled with clean fill material.

## 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.

SRC and Eagle Environmental plan to continue natural attenuation monitoring through the 4Q2018 sampling event. Based on those results, a decision will be made to continue with natural attenuation or to move forward with an active remediation method.

## Soil Remediation Summary

### In Situ

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

### Ex Situ

- \_\_\_\_\_ Excavate and offsite disposal
- \_\_\_\_\_ 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
- Yes \_\_\_\_\_ 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.

SRC and Eagle Environmental plan to continue natural attenuation monitoring through the 4Q2018 sampling event. Based on those results, a decision will be made to continue with natural attenuation or to move forward with an active remediation method.

## REMEDIATION PROGRESS UPDATE

### PERIODIC REPORTING

Frequency:  Quarterly  Semi-Annually  Annually  Other \_\_\_\_\_

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

Do all soils meet Table 910-1 standards? \_\_\_\_\_

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

Are the only residual soil impacts pH, SAR, or EC at depths greater than 3 feet below ground surface? \_\_\_\_\_

Does Groundwater meet Table 910-1 standards? \_\_\_\_\_

Is additional groundwater monitoring to be conducted? \_\_\_\_\_

## 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.

Facility has been demo'd and turned over to landowner. 8 MWs still exist on location for this remediation project.

Is the described reclamation complete? \_\_\_\_\_

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). \_\_\_\_\_

Date of commencement of Site Investigation. 11/17/2016

Date of completion of Site Investigation. \_\_\_\_\_

### **REMEDIAL ACTION DATES**

Date of commencement of Remediation. \_\_\_\_\_

Date of completion of Remediation. \_\_\_\_\_

### **SITE RECLAMATION DATES**

Date of commencement of Reclamation. \_\_\_\_\_

Date of completion of Reclamation. \_\_\_\_\_

**OPERATOR COMMENT**

This SF27 is for the reporting of quarterly monitoring results. Attached with this document are figures and results for 1Q2017 - 3Q2018 quarterly groundwater monitoring sampling events. SRC and Eagle Environmental plan to continue natural attenuation monitoring through the 4Q2018 sampling event. Based on those results, a decision will be made to continue with natural attenuation or to move forward with an active remediation method.

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

Signed: Dave Castro

Title: Sr. Env. Specialist

Submit Date: 10/30/2018

Email: dcastro@srcenergy.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: PETER GINTAUTAS

Date: 10/30/2018

Remediation Project Number: 9949

**COA Type****Description**

	Submit reports of site investigation and progress of remediation including results of sampling and analysis on an annual basis or more often until remediation is closed.
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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**

401815703	FORM 27-SUPPLEMENTAL-SUBMITTED
401815809	GROUND WATER SAMPLE LOCATION
401815813	ANALYTICAL RESULTS
401815820	GROUND WATER SAMPLE LOCATION
401815821	ANALYTICAL RESULTS
401815830	GROUND WATER SAMPLE LOCATION
401815831	ANALYTICAL RESULTS
401815838	GROUND WATER SAMPLE LOCATION
401815840	ANALYTICAL RESULTS
401815853	GROUND WATER SAMPLE LOCATION
401815854	ANALYTICAL RESULTS
401815860	GROUND WATER SAMPLE LOCATION
401815864	ANALYTICAL RESULTS
401815869	GROUND WATER SAMPLE LOCATION
401815873	ANALYTICAL RESULTS
401815877	OTHER

Total Attach: 16 Files

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

		Stamp Upon Approval
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Total: 0 comment(s)