

State of Colorado
Oil and Gas Conservation Commission

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Document Number:
401909528
Receive Date:
01/17/2019

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	Phone Numbers
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 #: 11384 Initial Form 27 Document #: 401654942

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: SPILL OR RELEASE	Facility ID: 455228	API #: _____	County Name: WELD
Facility Name: Keto Tank Battery	Latitude: 40.321034	Longitude: -104.930732	
** correct Lat/Long if needed: Latitude: _____		Longitude: _____	
QtrQtr: swse	Sec: 7	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? Yes

Is groundwater less than 20 feet below ground surface? No

Other 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	tank battery	sampling
Yes	SOILS	tank battery	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.

7 monitoring wells were installed, per approved document number 401654942. Soil samples were collected and tested for BTEX, DRO, and GRO. Groundwater samples were collected from all 7 MWs and sampled for BTEX. Those results and sample location figures are attached.

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):

The tank battery facility is going to be demo'd within the next two weeks. Once the surface is clear, SRC and Eagle plan to excavate all contaminated soil from under the current tank battery location excavation sidewall samples will be collected to confirm all contaminated soil is removed. Those soil samples will be sent to Origins Laboratory and analyzed for BTEX/DRO/GRO.

Proposed Groundwater Sampling

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

No further MW installation activities are planned at this time. Only quarterly monitoring of the existing 9 MWs will continue.

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):

2018Q3 quarterly groundwater monitoring showed impacts in MW-3. Two more MWs were installed, MW-8 and MW-9, to the south and southeast of MW-3. Those MWs were compliant in the 2018Q4 quarterly groundwater monitoring sample.

SITE INVESTIGATION REPORT

SAMPLE SUMMARY

Soil

Number of soil samples collected 13
Number of soil samples exceeding 910-1 3
Was the areal and vertical extent of soil contamination delineated? Yes
Approximate areal extent (square feet) 1500

NA / ND

-- Highest concentration of TPH (mg/kg) 27450
-- Highest concentration of SAR 0.58
BTEX > 910-1 Yes
Vertical Extent > 910-1 (in feet) 15

Groundwater

Number of groundwater samples collected 24
Was extent of groundwater contaminated delineated? Yes
Depth to groundwater (below ground surface, in feet) 20'
Number of groundwater monitoring wells installed 9
Number of groundwater samples exceeding 910-1 6

-- Highest concentration of Benzene (µg/l) 250
-- Highest concentration of Toluene (µg/l) 1400
-- Highest concentration of Ethylbenzene (µg/l) 599
-- Highest concentration of Xylene (µg/l) 5450
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) 100 Volume of liquid waste (barrels) 0

Is further site investigation required?

Once the tank battery facility has been cleared in a couple of weeks, SRC and Eagle plan to excavate all contaminated soils, using previously mentioned sidewall samples for confirmation. Carbon and Gypsum groundwater amendment will be dumped into the exposed groundwater in the excavation before it is backfilled with clean structural fill dirt.

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.

Partially buried produced water vault was removed and hauled to North Weld Landfill.

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.

Contaminated soil excavated from Eagle's initial investigation was hauled off to North Weld Landfill. The excavation was being backfilled with clean dirt. Eagle has since installed 9 MWs to define the the extents and concentrations of the impacted groundwater. Now that the tank battery facility will be demo'd, SRC and Eagle plan to move forward with excavation and removal of contaminated soil along with groundwater amendment application before excavation backfill.

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)
Yes _____ Chemical oxidation
 Air sparge / Soil vapor extraction
 Natural Attenuation
Yes _____ Other carbon/gypsum groundwater amendment _____

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 plan to move forward with excavation and removal of contaminated soil along with application of groundwater amendment before excavation backfill in the next few weeks. Quarterly groundwater monitoring sampling occurs the 3rd month of each quarter. The 9 MWs will be sampled quarterly until all MWs have 4 consecutive quarters of compliance with Table 910-1 limits.

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? Yes

Describe beneficial use, if any, of E&P Waste derived from this remediation project:

none

Volume of E&P Waste (solid) in cubic yards _____ 100

E&P waste (solid) description produced water contaminated 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: _____

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.

The impacted soil excavation will be backfilled with clean structural fill.

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). 04/04/2018

Date of commencement of Site Investigation. 05/18/2018

Date of completion of Site Investigation. _____

REMEDIAL ACTION DATES

Date of commencement of Remediation. 02/08/2019

Date of completion of Remediation. _____

SITE RECLAMATION DATES

Date of commencement of Reclamation. _____

Date of completion of Reclamation. _____

OPERATOR COMMENT

This SF27 is to provide 2018Q3 and 2018Q4 updates. All 2018Q3 and 2018Q4 figures, tables, and lab analytical reports are attached to this document. It is also to advise that SRC and Eagle plan to move forward with further impacted soil excavation and groundwater amendment application when the tank battery facility has been removed from the surface.

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: 01/17/2019 _____

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: 01/22/2019 _____

Remediation Project Number: 11384 _____

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**

401909528	FORM 27-SUPPLEMENTAL-SUBMITTED
401909618	SOIL SAMPLE LOCATION MAP
401909620	SOIL SAMPLE LOCATION MAP
401909621	GROUND WATER SAMPLE LOCATION
401909623	GROUND WATER ELEVATION MAP
401909624	ANALYTICAL RESULTS
401909625	SOIL SAMPLE LOCATION MAP
401909626	GROUND WATER SAMPLE LOCATION
401909627	GROUND WATER ELEVATION MAP
401909628	ANALYTICAL RESULTS
401909629	ANALYTICAL RESULTS
401909630	ANALYTICAL RESULTS

Total Attach: 12 Files

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

		Stamp Upon Approval
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Total: 0 comment(s)