FORM 27 Rev 3/16

State of Colorado
Oil and Gas Conservation Commission

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Document Number: 402143603
Receive Date:
Report taken by:

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 INFORMATON

Name of Operator: SRC ENERGY INC Operator No: 10311
Address: 1675 BROADWAY SUITE 2600
City: DENVER State: CO Zip: 80202
Contact Person: David Castro Email: dcastro@srcenergy.com

Phone Numbers
Phone: (970) 4755220
Mobile: ( )

PROJECT, PURPOSE & SITE INFORMATION

PROJECT INFORMATION

Remediation Project #:
Initial Form 27 Document #: 402143603

PURPOSE INFORMATION

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

SITE INFORMATION

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

Facility Type: SPILL OR RELEASE Facility ID: 466613 API #: County Name: WELD
Facility Name: Warren McMillan 2 Historic Spill Latitude: 40.293236 Longitude: -104.711610
** correct Lat/Long if needed: Latitude: Longitude:
QtrQtr: SWSW Sec: 19 Twp: 4N Range: 65W Meridian: 6 Sensitive Area? Yes

SITE CONDITIONS

General soil type - USCS Classifications SM
Most Sensitive Adjacent Land Use crop
Is domestic water well within 1/4 mile? Yes
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

SITE INVESTIGATION PLAN

TYPE OF WASTE:

- [x] **E&P Waste**
  - [x] Produced Water
  - [ ] Oil
  - [ ] Condensate
  - [ ] Drilling Fluids
  - [ ] Drill Cuttings
- [ ] **Other E&P Waste**
  - [ ] Workover Fluids
  - [ ] Tank Bottoms
  - [ ] Pigging Waste
  - [ ] Rig Wash
  - [ ] Spent Filters
  - [ ] Pit Bottoms
  - [ ] Other (as described by EPA) _____
- [ ] **Non-E&P Waste** _____

DESCRIPTION OF IMPACT

Impacted?	Impacted Media	Extent of Impact	How Determined
Yes	GROUNDWATER	TBD	sampling
Yes	SOILS	TBD	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.

During production facility demo and equipment removal, Unlimited Service's roustabout crew observed potential contamination near the separator dump line riser. The soil of concern was sampled and analyzed for BTEX, DRO, and GRO. Results were not within Table 910-1 limits. SRC and Unlimited are in the process of impacted soil extent determination and removal. Groundwater was encountered at approximately 8.5' below ground surface. A groundwater sample was collected and analyzed for BTEX. Those results were also not Table 910-1 compliant. Approximately 240 bbls of impacted groundwater mixed with pivot irrigation water have been removed from the excavation to this point.

PROPOSED SAMPLING PLAN

Proposed Soil Sampling

- [x] Will soil samples be collected as part of this investigation? (Number, type (grab/composite), analyses, and locations of samples):

SRC and Unlimited are in the process of impacted soil extent determination and removal. Sidewall soil samples will be collected at depth around the excavation and analyzed for BTEX, DRO, and GRO to confirm excavation points of compliance.

Proposed Groundwater Sampling

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

An array of MWs will be proposed on an SF27 once impacted soil extents have been determined, more groundwater removed from the excavation, a yet-to-be determined amount of groundwater amendment applied to the excavation, and the excavation backfilled.

Proposed Surface Water Sampling

- [ ] Will surface water samples be collected as part of this investigation? (Number, analyses, and locations of samples):

Additional Investigative Actions

- [x] Additional alternative investigative actions described in attached Site Investigation Plan (summary):

Continued impacted soil extent determination, followed by impacted groundwater extent determination once the excavation is backfilled.

SITE INVESTIGATION REPORT

SAMPLE SUMMARY

Soil

Number of soil samples collected: 2

Number of soil samples exceeeding 910-1: 1

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

Approximate areal extent (square feet): 1000

NA / ND

-- Highest concentration of TPH (mg/kg): 1018

NA Highest concentration of SAR:

BTEX > 910-1: Yes

Vertical Extent > 910-1 (in feet): 9

Groundwater

Number of groundwater samples collected: 1

Was extent of groundwater contaminated delineated? No

Depth to groundwater (below ground surface, in feet): 9`

Number of groundwater monitoring wells installed: 0

Number of groundwater samples exceeding 910-1: 1

-- Highest concentration of Benzene (µg/l): 107

-- Highest concentration of Toluene (µg/l): 11.1

-- Highest concentration of Ethylbenzene (µg/l): 180

-- Highest concentration of Xylene (µg/l): 667

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): 150

Volume of liquid waste (barrels): 240

☒ Is further site investigation required?

impacted soil and groundwater extent determination

REMEDIAL ACTION PLAN

SOURCE REMOVAL SUMMARY

Describe how source is to be removed.

Well has been plugged and equipment removed.

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.

Once impacted soil extents have been determined, SRC plans to remove more groundwater (mixed with pivot irrigation water) from the excavation, then apply groundwater amendment to the excavation before backfilling.

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) 150
  - 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 removal

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.

A proposed MW plan will be submitted on an SF27, with a full summary of impacted soil extent determination and removal, groundwater removal, and groundwater amendment applicaiton.

REMEDIATION PROGRESS UPDATE

PERIODIC REPORTING

Frequency: [X] 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 150

E&P waste (solid) description impacted soil

COGCC Disposal Facility ID #, if applicable:

Non-COGCC Disposal Facility: North Weld Landfill

Volume of E&P Waste (liquid) in barrels 240

E&P waste (liquid) description impacted groundwater mixed with irrigation pivot water

COGCC Disposal Facility ID #, if applicable:

Non-COGCC Disposal Facility: CSI Bennett

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 impacted soil removal and backfill has been completed, the site will be reclaimed.

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).

Date of commencement of Site Investigation. 07/30/2019

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 IF27 is to begin the impacted soil and groundwater spill remediation project in order to submit the related SF19 for spill closure to continue under this remediation project. Impacted soil extent determination and removal is ongoing. A proposed MW plan will be submitted on an SF27, with a full summary of impacted soil extent determination and removal, groundwater removal, and groundwater amendment applicaiton.

It is also to advise that SRC is considering putting work at the site on hold until the farmer shuts down the pivot to begin corn harvest. The lease road and location are within the pivot circle and the farmer will not stop the pivot. It slowly walks the full circle and passes over the location about every 3 days. This is making the soil impact investigation very difficult and keeps raising the water level in the excavation.

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

Signed:` David Castro

Title: Sr. Env. Specialist

Submit Date:`

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:

Date:

Remediation Project Number:

COA Type	Description

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
402143635	ANALYTICAL RESULTS
402143636	ANALYTICAL RESULTS

Total Attach: 2 Files

General Comments

User Group	Comment	Comment Date
		Stamp Upon Approval

Total: 0 comment(s)