

State of Colorado  
Oil and Gas Conservation Commission

1120 Lincoln Street, Suite 801, Denver, Colorado 80203  
Phone: (303) 894-2100 Fax: (303) 894-2109



Document Number:  
401881320  
Receive Date:  
12/31/2018

Report taken by:  
Steven Arauza

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: <u>URSA OPERATING COMPANY LLC</u>	Operator No: <u>10447</u>	<b>Phone Numbers</b>
Address: <u>792 BUCKHORN DR</u>		
City: <u>RIFLE</u>	State: <u>CO</u>	Zip: <u>81650</u>
Contact Person: <u>Dwayne Knudson</u>	Email: <u>dknudson@ursaresources.com</u>	
	Phone: <u>(970) 3294367</u>	
	Mobile: <u>(970) 4563335</u>	

PROJECT, PURPOSE & SITE INFORMATION

**PROJECT INFORMATION**  
Remediation Project #: 12168 Initial Form 27 Document #: 401855724

**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 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: <u>TANK BATTERY</u>	Facility ID: <u>335054</u>	API #: _____	County Name: <u>GARFIELD</u>
Facility Name: <u>CSF-67S91W 8SESW</u>	Latitude: <u>39.454919</u>	Longitude: <u>-107.578976</u>	
** correct Lat/Long if needed: Latitude: <u>39.454503</u>		Longitude: <u>-107.578658</u>	
QtrQtr: <u>SESW</u>	Sec: <u>8</u>	Twp: <u>7S</u>	Range: <u>91W</u> Meridian: <u>6</u> Sensitive Area? <u>No</u>

**SITE CONDITIONS**

General soil type - USCS Classifications CL Most Sensitive Adjacent Land Use Rangeland

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**

# 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	SOILS	TBD	site investigation 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.

Upon discovery of the release, flow to the W1 tank was stopped and vac trucks dispatched to the location to begin recovering loss fluids within the containment, as well as remove fluids within the tank to prevent additional fluids from leaking out. The tank was taken off line and out of service. Once the tank was removed, initial sampling of the soils directly below the tank indicated impacts were present up to 1ft based off of field screening and visual observations.

## 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 ):

Initial sampling from below the tank has been submitted to the lab for analysis. Additional samples were collected from different depths and locations around the containment to determine vertical and horizontal extent of impacts. Refer to attached sample location map (also submitted with the Form 19s). Results from SP 1 indicate that the soils exceed COGCC Table 910-1 standards for TPH and BTEX. The additional samples (SP 2-8) and confirmation samples will be analyzed for TPH (DRO & GRO) and BTEX as those are the only constituents exceeding COGCC Table 910-1.

### 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 ):

Additional site investigation activities may be required depending on the results from SP 1-8. Field screening instruments indicate that impacts may be present within 1ft below the ground surface. Confirmation samples have be collected at 1ft. If the analysis at 1ft exceed COGCC Table 910-1, then additional site investigation activities may be necessary to determine actual depth of impacts.

# SITE INVESTIGATION REPORT

## SAMPLE SUMMARY

### Soil

Number of soil samples collected 8

Number of soil samples exceeding 910-1 1

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

Approximate areal extent (square feet) 1350

### NA / ND

--            Highest concentration of TPH (mg/kg) 3242

--            Highest concentration of SAR 0.646

BTEX > 910-1 Yes

Vertical Extent > 910-1 (in feet) 1

### Groundwater

Number of groundwater samples collected 0

Was extent of groundwater contaminated delineated? No

Depth to groundwater (below ground surface, in feet) 400'

Number of groundwater monitoring wells installed 0

Number of groundwater samples exceeding 910-1 0

           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 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?

three (3) background samples collected from an undisturbed location adjacent to the pad

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?

TBD - pending analytical data results.

# 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.

Analytical results indicate that the soils on the surface exceed COGCC Table thresholds for TPH and BTEX. Follow-up samples will be analyzed for the same constituents to determine vertical and horizontal extent of impacts. Upon confirmation of the vertical and horizontal extent, soils will be excavated via backhoe/trackerhoe.

## 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.

Soils impacted by the released produced water will be excavated and hauled off site for disposal to Greenleaf Environmental. Upon removing the impacted soils, the excavation will be backfilled with clean native material (or imported fill material if needed) and capped with fill material necessary to support upright tank placement.

## Soil Remediation Summary

In Situ

Ex Situ

\_\_\_\_\_ Bioremediation ( or enhanced bioremediation )

Yes \_\_\_\_\_ Excavate and offsite disposal

\_\_\_\_\_ Chemical oxidation

If Yes: Estimated Volume (Cubic Yards) \_\_\_\_\_ 100

\_\_\_\_\_ Air sparge / Soil vapor extraction

Name of Licensed Disposal Facility or COGCC Facility ID # \_\_\_\_\_ 0

\_\_\_\_\_ Natural Attenuation

No \_\_\_\_\_ Excavate and onsite remediation

\_\_\_\_\_ Other \_\_\_\_\_

\_\_\_\_\_ Land Treatment

\_\_\_\_\_ Bioremediation (or enhanced bioremediation)

\_\_\_\_\_ Chemical oxidation

\_\_\_\_\_ Other \_\_\_\_\_

## Groundwater Remediation Summary

No \_\_\_\_\_ Bioremediation ( or enhanced bioremediation )

No \_\_\_\_\_ Chemical oxidation

No \_\_\_\_\_ Air sparge / Soil vapor extraction

No \_\_\_\_\_ Natural Attenuation

No \_\_\_\_\_ 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.

Groundwater is estimated to be between 400-500 feet based on nearest groundwater well located ~ 1 mile to the west/southwest and elevation.

## 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? \_\_\_\_\_

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.

The area excavated will be backfilled with clean native material (or imported fill if needed) and capped with material sufficient to support production tank operations. Impacts are no anticipated to extent off well pad.

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? Yes \_\_\_\_\_

If NO, does the seed mix comply with local soil conservation district recommendations? Yes \_\_\_\_\_

## IMPLEMENTATION SCHEDULE

### **PRIOR DATES**

Date of Surface Owner notification/consultation, if required. 11/16/2018

Actual Spill or Release date, if known. 11/16/2018

### **SITE INVESTIGATION DATES**

Date of Initial Actions described in Site Investigation Plan (start date). 11/20/2018

Date of commencement of Site Investigation. 12/06/2018

Date of completion of Site Investigation. 12/21/2018

### **REMEDIAL ACTION DATES**

Date of commencement of Remediation. 12/19/2018

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

### **SITE RECLAMATION DATES**

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

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

**OPERATOR COMMENT**

Attached is revised analytical data tracking spreadsheet to show the results for SP 1-8 with the appropriate depths at which samples were collected as outlined in the COA's on the Supplemental Form 27 (12/4/18 – Doc # 401855724). Sample results at SP 1 & 5, which were directly below where the release occurred, indicated that impacts were present within 1ft of soil, as well as field screening results indicated surface soils exceeded TPH concentrations as outlined in the Initial Site Investigation Map.

It was requested that the vertical and horizontal extent of impacts be further delineated as outlined in Supplemental Form 27 (12/4/18 – Doc # 401855724).

On 12/19/18 an excavator was used to excavate the impacted material outlined in the attached Excavation & Remediation Map. Soil was excavated to a depth of 1.5-2 feet starting at SP 6 and continued north/northeast to SP 3 & SP 2, using field screening instruments to guide the vertical and horizontal excavation. Impacted soils were encountered at SP 1 & SP 5 to a vertical depth of approximately 3.5ft, then gradually decreased in depth as the excavation progressed towards SP 3 and SP 2. As discussed with the COGCC via phone on December 20, 2018, confirmation samples were collected each of the four (4) excavation side walls (SP 10-13), and one (1) of the bottom (SP 14) to be analyzed for full COGCC Table 910-1.

Additionally, an Area of Concern (AOC) was noted in the northeast corner of the excavation, with discolored soils containing a moderate hydrocarbon odor. Soils were excavated in a north east direction to the edge of the containment but had to be stopped due to the limitations of the 811 line locates and the presence of an active pipeline in the vicinity. Further investigation & excavation was conducted on the following day (12/21/18) utilizing a hydro-excavator to remove soils in the northeast corner to 3.5ft (within the containment) and as well as a pot hole was completed outside the containment to a depth of 4ft. Impact soils were not observed at 3.5ft within the containment, as well as within the pot hole outside of containment. Confirmation samples were collected from the AOC at 3.5ft inside the containment (SP 15) as well as outside of containment at 4ft (SP 16). Samples were submitted for full COGCC Table 910-1.

Lastly additional samples from outside the containment were collect at SP 7 and analyzed for inorganics (SAR/EC/pH) and will be noted as SP 7A, as well as another sample was collected from outside the containment in the southeast corner and has been labeled as SP 9, which will also be analyzed for inorganics (SAR/EC/pH).

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

Signed: ` Kris Rowe \_\_\_\_\_

Title: Env. Consultant \_\_\_\_\_

Submit Date: ` 12/31/2018 \_\_\_\_\_

Email: krowe@hrlcomp.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: Steven Arauza \_\_\_\_\_

Date: 04/30/2019 \_\_\_\_\_

Remediation Project Number: 12168 \_\_\_\_\_

**COA Type****Description**

	Submit analytical results (Analytical Summary Table and complete laboratory reports) for soil samples collected on 12/19/2018 through 12/21/2018 as well as a project status update via Supplemental eForm 27.
	Operator shall also include laboratory reports for samples BKGD 1, BKGD 2, BKGD 3, collected on 11/20/2018 as an attachment to the Supplemental eForm 27.

**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**

401881320	FORM 27-SUPPLEMENTAL-SUBMITTED
401884625	ANALYTICAL RESULTS
401884632	ANALYTICAL RESULTS
401884711	SITE MAP
401889234	ANALYTICAL RESULTS

Total Attach: 5 Files

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

Environmental	Analytical summary table indicates sample SP 1 has an electrical conductivity of 4.19 mmhos/cm, according to laboratory report, actual electrical conductivity is 0.419 mmhos/cm.	12/31/2018
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Total: 1 comment(s)