

State of Colorado  
Oil and Gas Conservation Commission

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Document Number:  
401312875  
Receive Date:  
06/22/2017

Report taken by:  
CHRIS CANFIELD

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: GREAT WESTERN OPERATING COMPANY LLC	Operator No: 10110	<b>Phone Numbers</b>
Address: 1801 BROADWAY #500		Phone: (303) 398-0537
City: DENVER	State: CO Zip: 80202	Mobile: ( )
Contact Person: Scot Donato	Email: sdonato@gwogco.com	

PROJECT, PURPOSE & SITE INFORMATION

PROJECT INFORMATION

Remediation Project #: 10344 Initial Form 27 Document #: 401312875

PURPOSE INFORMATION

- 901.e. Sensitive Area Determination
- 909.c.(1), Rule 905: Pit or PW vessel closure
- 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
- 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 Limited subsurface investigation

SITE INFORMATION

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

Facility Type: LOCATION	Facility ID: 336384	API #: _____	County Name: WELD
Facility Name: STANLEY OLSON-62N68W 14SWNE	Latitude: 40.141470	Longitude: -104.966310	
	** correct Lat/Long if needed: Latitude: 40.141381	Longitude: -104.966060	
QtrQtr: SWNE	Sec: 14	Twp: 2N	Range: 68W Meridian: 6 Sensitive Area? Yes

SITE CONDITIONS

General soil type - USCS Classifications SC Most Sensitive Adjacent Land Use Agriculture  
 Is domestic water well within 1/4 mile? Yes Is surface water within 1/4 mile? Yes  
 Is groundwater less than 20 feet below ground surface? Yes

Other Potential Receptors within 1/4 mile

Occupied building and livestock in place 1000 ft northeast (cross-gradient).

# 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 checked="" 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	Unknown	Discovered during due diligence investigation
Yes	SOILS	Unknown	Discovered during due diligence investigation

## INITIAL ACTION SUMMARY

Description of initial action or emergency response measures take to abate, investigate, and/or remediate impacts associated with E&P Waste.

Soil and groundwater impacts were discovered during initial subsurface investigation activities associated with due diligence. Refer to Figure 1 and the laboratory analytical results included in the attached Form 27 that was submitted to COGCC via email on July 22, 2016. The operator did not receive a response from the COGCC with regard to the approval or disapproval of the Form 27. An additional limited subsurface investigation is scheduled to be conducted on July 5-6, 2017.

## 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 borings are proposed to be advanced during a subsurface investigation scheduled for July 5-6, 2017. Discrete soil samples are proposed to be collected utilizing a geoprobe for Total Petroleum Hydrocarbon - Gasoline and Diesel Range Organics (TPH-GRO and TPH-DRO) analysis. Refer to the attached Figure 1 for the proposed soil boring locations.

### Proposed Groundwater Sampling

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

The operator proposes to install up to three groundwater monitoring wells to sample for benzene, toluene, ethylbenzene, and total xylenes (BTEX) during the subsurface investigation scheduled for July 5-6, 2017. The estimated proposed well locations are depicted on the attached Figure 1. Additional groundwater samples may be collected from select soil borings during the proposed subsurface investigation.

### 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 8  
Number of soil samples exceeding 910-1 4  
Was the areal and vertical extent of soil contamination delineated? No  
Approximate areal extent (square feet) 15000

### NA / ND

-- Highest concentration of TPH (mg/kg) 5550  
NA Highest concentration of SAR           
BTEX > 910-1 Yes  
Vertical Extent > 910-1 (in feet) 8

### Groundwater

Number of groundwater samples collected 8  
Was extent of groundwater contaminated delineated? No  
Depth to groundwater (below ground surface, in feet) 8'  
Number of groundwater monitoring wells installed 0  
Number of groundwater samples exceeding 910-1 2

-- Highest concentration of Benzene (µg/l) 3970  
ND Highest concentration of Toluene (µg/l)           
-- Highest concentration of Ethylbenzene (µg/l) 1700  
-- Highest concentration of Xylene (µg/l) 6390  
NA 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?

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?

The operator proposes to conduct a limited subsurface investigation to provide an increased understanding of the vertical and lateral distribution of impacted soil around boring SB-3. The operator proposes to install up to three groundwater monitoring wells to sample for BTEX.

# REMEDIAL ACTION PLAN

## SOURCE REMOVAL SUMMARY

Describe how source is to be removed.

Operator will either dig and haul or treat any soils onsite that exceed Table 910-1 concentration levels.

## 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.

A soil remediation plan will be developed based on the results of the limited subsurface investigation scheduled to be conducted on July 5-6, 2017. Groundwater remediation is addressed below.

## 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
- 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.

The operator proposes to install up to three groundwater monitoring wells to monitor until four consecutive quarters of analytical results below Table 910-1 concentration levels for BTEX are obtained. The well locations are depicted on the attached Figure 1.

# 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: \_\_\_\_\_

## 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.

If necessary, the site will be reclaimed in accordance with COGCC 1000 series rules.

Is the described reclamation complete?  Yes  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. 06/22/2017

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. 07/05/2017

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**

Subsequent to this Form 27, the operator submitted an associated Form 19 (Initial w/ Supplemental), document #401312425, on June 20, 2017.

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

Signed: Jason Davidson \_\_\_\_\_

Title: Project Geologist \_\_\_\_\_

Submit Date: 06/22/2017 \_\_\_\_\_

Email: jdavidson@olssonassociates.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: CHRIS CANFIELD \_\_\_\_\_

Date: 08/09/2017 \_\_\_\_\_

Remediation Project Number: 10344 \_\_\_\_\_

**COA Type****Description**

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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**

401312875	FORM 27-INITIAL-SUBMITTED
401313018	FORM 27 (INITIAL)
401313315	SOIL SAMPLE LOCATION MAP

Total Attach: 3 Files

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

		Stamp Upon Approval
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Total: 0 comment(s)