

State of Colorado Oil and Gas Conservation Commission

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401642070

Receive Date:

05/18/2018

Report taken by:

RICK ALLISON

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 INFORMATION

Name of Operator: <u>GREAT WESTERN OPERATING COMPANY LLC</u>	Operator No: <u>10110</u>	Phone Numbers
Address: <u>1801 BROADWAY #500</u>		Phone: <u>(303) 398-0478</u>
City: <u>DENVER</u>	State: <u>CO</u>	Zip: <u>80202</u>
Contact Person: <u>Ben Huggins</u>	Email: <u>bhuggins@gwogco.com</u>	Mobile: <u>()</u>

PROJECT, PURPOSE & SITE INFORMATION

PROJECT INFORMATION

Remediation Project #: 11294 Initial Form 27 Document #: 401623783

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

Y Multiple Facilities (in accordance with Rule 909.c.)

Facility Type: <u>SPILL OR RELEASE</u>	Facility ID: <u>454672</u>	API #: _____	County Name: <u>WELD</u>
Facility Name: <u>Pierce Unit 2 flowline 23SWSW</u>		Latitude: <u>40.641880</u>	Longitude: <u>-104.751510</u>
		** correct Lat/Long if needed: Latitude: <u>40.645499</u>	Longitude: <u>-104.751450</u>
QtrQtr: <u>SWSW</u>	Sec: <u>23</u>	Twp: <u>8N</u>	Range: <u>66W</u> Meridian: <u>6</u> Sensitive Area? <u>Yes</u>
Facility Type: <u>SPILL OR RELEASE</u>	Facility ID: <u>455020</u>	API #: _____	County Name: <u>WELD</u>
Facility Name: <u>Historic Priddy 1</u>		Latitude: <u>40.645498</u>	Longitude: <u>-104.751295</u>
		** correct Lat/Long if needed: Latitude: <u>40.645462</u>	Longitude: <u>-104.751310</u>
QtrQtr: <u>NWNW</u>	Sec: <u>23</u>	Twp: <u>8N</u>	Range: <u>66W</u> Meridian: <u>6</u> Sensitive Area? <u>Yes</u>

SITE CONDITIONS

General soil type - USCS Classifications CL Most Sensitive Adjacent Land Use Pasture and agricultural

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? No

Other Potential Receptors within 1/4 mile

Rural residential properties.

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 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
No	GROUNDWATER	None	Subsurface Invest.
Yes	SOILS	70x40	Subsurface Invest.

INITIAL ACTION SUMMARY

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

Recent Release:

The flowline was shut-in and excavation work was initiated on 3/30/18. Following soil removal, Olsson Associates (Olsson) collected soil samples from the stockpiled soil, the base of the excavation beneath the flowline at a depth of 6 feet bgs, and from the side walls of the excavation at depths of 4 feet to 4.5 feet bgs. Origins Laboratory in Denver, CO analyzed the soil samples for analysis of benzene, toluene, ethylbenzene, and total xylene (BTEX), gasoline range organics (GRO), and diesel range organics (DRO) to compare to the COGCC Table 910-1 concentration levels. Approximately 29 cubic yards of soil were stockpiled onsite. One additional soil sample was collected on 4/23/18 during excavation and flowline repair activities. The sample was collected from 11 feet bgs from a pothole in the base of the excavation, between the north sidewall and north flowline. The recent release was delineated both vertically and laterally during the limited subsurface investigation on 5/9/18 and groundwater was not encountered.

Historic Release:

An historic release of an unknown, small volume was discovered on 5/9/18 during drilling associated with the limited subsurface investigation of the recent flowline release. The historic release was delineated both vertically and laterally and groundwater was not encountered.

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):

To address the recent flowline release, the operator plans to excavate further to the north, south, east, and west in the area of the flowlines and collect up to five (5) confirmation soil samples from the four walls and base of the excavation. To address the historic release discovered during the limited subsurface investigation on 5/9/18, the operator plans to spot excavate around soil borings BH08 and BH17 to remove impacts. Up to five (5) confirmation soil samples will be collected from the walls and base of each spot excavation. All confirmation soil samples will be analyzed for BTEX, GRO, and DRO. See attached Figure 2.

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):

SITE INVESTIGATION REPORT

SAMPLE SUMMARY

Soil

Number of soil samples collected 8

Number of soil samples exceeding 910-1 2

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

Approximate areal extent (square feet) 1200

NA / ND

-- Highest concentration of TPH (mg/kg) 14780

NA Highest concentration of SAR

BTEX > 910-1 Yes

Vertical Extent > 910-1 (in feet) 15

Groundwater

Number of groundwater samples collected 0

Was extent of groundwater contaminated delineated? No

Depth to groundwater (below ground surface, in feet)

Number of groundwater monitoring wells installed 0

Number of groundwater samples exceeding 910-1 0

NA Highest concentration of Benzene (µg/l)

NA Highest concentration of Toluene (µg/l)

NA Highest concentration of Ethylbenzene (µg/l)

NA Highest concentration of Xylene (µg/l)

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?

REMEDIAL ACTION PLAN

Does this Supplemental Form 27A include changes to a previously approved Remedial Action Plan? Yes _____

SOURCE REMOVAL SUMMARY

Describe how source is to be removed.

Impacted soils will be excavated for offsite disposal at a licensed facility.

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.

To address the recent flowline release, the operator plans to excavate further vertically and to the north, south, east, and west in the area of the flowlines. The excavation will extent no further than the clean soil borings advanced on 5/9/18. To address the historic release, the operator plans to spot excavate around soil borings BH08 and BH17. The extent of the excavations will be determined by field screening and confirmation soil sample results. Soil samples will be analyzed for BTEX, GRO, and DRO using an expedited turn around time. Excavation activities are planned for the week of 5/20/18, pending weather.

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.

Groundwater was not encountered during the limited subsurface investigation on 5/9/18.

REMEDATION 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: _____

REMEDATION COMPLETION REPORT

REMEDATION 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.

If necessary, the site will be reclaimed in accordance with COGCC Rule 1004.

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. 03/23/2018

Actual Spill or Release date, if known. _____

SITE INVESTIGATION DATES

Date of Initial Actions described in Site Investigation Plan (start date). 03/30/2018

Date of commencement of Site Investigation. 05/03/2018

Date of completion of Site Investigation. 05/09/2018

REMEDIAL ACTION DATES

Date of commencement of Remediation. 05/24/2018

Date of completion of Remediation. _____

SITE RECLAMATION DATES

Date of commencement of Reclamation. 06/04/2018

Date of completion of Reclamation. _____

OPERATOR COMMENT

The flowline excavation is expected to measure approximately 20' N/S by 30' E/W by 12' deep. The spot excavation around soil boring BH08 is expected to measure approximately 15' N/S by 20' E/W by 12' deep. The spot excavation around soil boring BH17 is expected to measure approximately 15' N/S by 20' E/W by 16' deep. Clean overburden will be segregated and stockpiled on site and placed as backfill following impacted soil removal.

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

Signed: Jason Davidson

Title: Senior Geologist

Submit Date: 05/18/2018

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: RICK ALLISON

Date: 05/21/2018

Remediation Project Number: 11294

COA Type

Description

	Surface reclamation in the release area must be conducted in accordance with Rule 1004.
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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

401642070	FORM 27-SUPPLEMENTAL-SUBMITTED
401642290	SOIL SAMPLE LOCATION MAP
401642291	ANALYTICAL RESULTS
401642295	ANALYTICAL RESULTS

Total Attach: 4 Files

General Comments

User Group

Comment

Comment Date

Environmental	COGCC changed related facility from Location 405190 (the former Priddy 2 well location) to Spill ID 445020 (the historical impacts release point).	05/21/2018
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Total: 1 comment(s)