

State of Colorado Oil and Gas Conservation Commission

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Document Number:

401835745

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 INFORMATION

Name of Operator: GREAT WESTERN OPERATING COMPANY LLC	Operator No: 10110	Phone Numbers Phone: (720) 5952078 Mobile: ()
Address: 1001 17TH STREET #2000		
City: DENVER	State: CO Zip: 80202	
Contact Person: Ben Huggins	Email: bhuggins@gwogco.com	

PROJECT, PURPOSE & SITE INFORMATION

PROJECT INFORMATION

Remediation Project #: Initial Form 27 Document #: 401835745

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 Facilities (in accordance with Rule 909.c.)

Facility Type: SPILL OR RELEASE	Facility ID: 458600	API #:	County Name: WELD
Facility Name: Colorado State #2 Flowline		Latitude: 40.615700	Longitude: -104.830620
		** correct Lat/Long if needed: Latitude:	Longitude:
QtrQtr: SW SW	Sec: 31	Twp: 8N	Range: 66W Meridian: 6 Sensitive Area? Yes

SITE CONDITIONS

General soil type - USCS Classifications GM Most Sensitive Adjacent Land Use Livestock Watering

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

Coalbank Creek drainage.

SITE INVESTIGATION PLAN

TYPE OF WASTE:

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

DESCRIPTION OF IMPACT

Impacted?	Impacted Media	Extent of Impact	How Determined
UNDETERMINED	GROUNDWATER	unknown extent	Visual
Yes	SOILS	Unknown extent	Visual

INITIAL ACTION SUMMARY

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

Colorado State #2 well and associated flowline were shut-in. Great Western Operating excavated impacts and used a hydrovac to remove fluid. A historic flowline release was also encountered during excavation of the Colorado State #2 flowline release.

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):

Great Western Operating Company retained Olsson and Site Services to conduct a subsurface investigation to delineate the lateral and vertical extent of impact from a historic flowline release and recent release. The subsurface investigation is scheduled for November 15, 2018.

Proposed Groundwater Sampling

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

If groundwater is encountered at a total depth of 10 feet to 15 feet below ground surface, if groundwater is encountered direct-push borings will be completed as temporary piezometers to enable collection of groundwater samples. A sample diagram will be included with a supplemental eForm 27.

Proposed Surface Water Sampling

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

Surface water was not observed - Coalbank Creek is a dry wash.

Additional Investigative Actions

☒ Additional alternative investigative actions described in attached Site Investigation Plan (summary):

Impacted soils will be excavated, stockpiled, and hauled offsite to a commercial disposal facility. The stockpile will be placed on plastic and covered with plastic pending delivery to the disposal facility. Groundwater impacts if present will be assessed to determine potential for additional investigative actions.

SITE INVESTIGATION REPORT

SAMPLE SUMMARY

Soil

Number of soil samples collected _____ 0
Number of soil samples exceeding 910-1 _____
Was the areal and vertical extent of soil contamination delineated? _____
Approximate areal extent (square feet) _____

NA / ND

_____ Highest concentration of TPH (mg/kg) _____
_____ Highest concentration of SAR _____
_____ BTEX > 910-1 _____
_____ Vertical Extent > 910-1 (in feet) _____

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 _____
Number of groundwater samples exceeding 910-1 _____

_____ 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
_____ 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?

A historic release was identified to the northwest of the Colorado State #2 flowline release.

☒ Were background samples collected as part of this site investigation?

A background soil sample, SS9 @ 0-0.2 ft NE, was collected to assess background levels/concentrations of inorganic soil parameters.

☐ 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?

A limited subsurface investigation is required to delineate the lateral and vertical extent of impacts.

REMEDIAL ACTION PLAN

SOURCE REMOVAL SUMMARY

Describe how source is to be removed.

Excavation of impacted soils is proposed.

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.

Remediation will be performed once site characterization is complete. Remediation is expected to be conducted by excavation of impacted soils.

Soil Remediation Summary

☒ In Situ

Yes Bioremediation (or enhanced bioremediation)

No Chemical oxidation

No Air sparge / Soil vapor extraction

No Natural Attenuation

No Other _____

☒ Ex Situ

Yes Excavate and offsite disposal

If Yes: Estimated Volume (Cubic Yards) 60

Name of Licensed Disposal Facility or COGCC Facility ID # _____

No 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.

Four temporary piezometers will be completed using 1-inch diameter PVC pipe and grab groundwater samples will be collected to assess impacts.

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.

Reclamation will be performed following completion of the excavation of impacted soils.

Is the described reclamation complete? _____

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. 10/26/2018

Actual Spill or Release date, if known. _____

SITE INVESTIGATION DATES

Date of Initial Actions described in Site Investigation Plan (start date). 11/26/2018

Date of commencement of Site Investigation. 11/15/2018

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

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

Signed: ` James Hix - Agent

Title: Olsson Sr. Geologist

Submit Date: `

Email: jhix@olsson.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**

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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**

401835801	ANALYTICAL RESULTS
401835803	ANALYTICAL RESULTS
401835804	ANALYTICAL RESULTS
401835805	ANALYTICAL RESULTS
401835807	MAP
401835808	SITE MAP

Total Attach: 6 Files

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

		Stamp Upon Approval
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Total: 0 comment(s)