

State of Colorado Oil and Gas Conservation Commission

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Report taken by:

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: GREAT WESTERN OPERATING COMPANY LLC	Operator No: 10110	Phone Numbers Phone: (720) 595-2132 Mobile: ()
Address: 1001 17TH STREET #2000		
City: DENVER	State: CO Zip: 80202	
Contact Person: Jason Davidson	Email: jdavidson@gwp.com	

PROJECT, PURPOSE & SITE INFORMATION

PROJECT INFORMATION

Remediation Project #: 16770 Initial Form 27 Document #: 402600970

PURPOSE INFORMATION

- ☐ Rule 913.c.(1): Pit or Cuttings Trench closure.
- ☐ Rule 913.c.(2): Buried or partially buried vessel closure, which will be by removal.
- ☐ Rule 913.c.(3): Remediation of Spill and Releases pursuant to Rule 912.
- ☐ Rule 913.c.(4): Land treatment of Oily Waste pursuant to Rule 905.e.
- ☐ Rule 913.c.(5): Closure of Centralized E&P Waste Management Facilities pursuant to Rule 907.h.
- ☐ Rule 913.c.(6): Remediation of impacted Groundwater pursuant to Rule 915.e.(3).D, and the contaminant concentrations in Table 915-1.
- ☐ Rule 913.c.(7): Investigation and remediation of natural gas in soil or Groundwater.
- ☐ Rule 913.c.(8): When requested by the Director due to any potential risk to soil, Groundwater, or surface water.
- ☒ Rule 913.c.(9): Decommissioning of Oil and Gas Facilities.
- ☐ Rule 913.g: Changes of Operator.
- ☐ Rule 915.b: Request to leave elevated inorganics in situ.
- ☐ Other: _____

SITE INFORMATION

No Multiple Facilities

Facility Type: WELL	Facility ID: _____	API #: 001-06503	County Name: ADAMS
Facility Name: DAVIS 1-30		Latitude: 39.845298	Longitude: -104.472466
		** correct Lat/Long if needed: Latitude: 39.845228	Longitude: -104.472455
QtrQtr: NESE	Sec: 30	Twp: 2S	Range: 63W Meridian: 6 Sensitive Area? Yes

SITE CONDITIONS

General soil type - USCS Classifications SC Most Sensitive Adjacent Land Use Agricultural

Is domestic water well within 1/4 mile? No 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

The Davis 1-30 wellhead and associated 542-foot flowline are surrounded by agricultural fields in all directions. The flowline runs southeast from the wellhead to the tank battery. The tank battery, which is addressed under a separate Form 27 (Document #402601098), is located approximately 565 feet to the southeast of the wellhead. West Sand Creek, an ephemeral drainage, is in place ~¼ mile to the west. There are no groundwater wells mapped within ¼ mile of the wellhead and flowline. Depth to groundwater is expected to be encountered at ~70 feet below ground surface. There are no additional sensitive areas or wildlife habitats identified within a quarter mile of the wellhead and flowline. See the attached Figure 1 for an illustration of the location of the Site.

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
No	SOILS	Not impacted	Confirmation Soil 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.

Great Western proposes to conduct closure of the Davis 1-30 wellhead and flowline. Plugging and abandonment of the well is scheduled to commence on 3/16/2021 and be completed by 3/18/2021. Flowline removal activities and cut and cap activities are planned to commence on 3/24/2021 and be completed by 3/26/2021. Great Western will conduct site investigation activities, field screening, and confirmation soil sampling activities during closure in accordance with COGCC 900 Series Rules. Discreet soil samples will be collected and analyzed pursuant to Rule 915, following the general sample collection guidance in Rule 915.e.(2). All waste generated during the closure activities will be managed and disposed of at Waste Connections' Denver Regional Landfill in Erie, CO in accordance with Rules 905 and 906.

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):

Four discreet soil samples will be collected for field screening at the wellhead. At least one of the field screening samples will be submitted to an accredited laboratory for analysis. Soil samples will be analyzed for benzene, toluene, ethylbenzene, total xylenes (BTEX), naphthalene, and Total Volatile Petroleum Hydrocarbons (TVPH [C6-C10]) by EPA Method 8260 and Total Extractable Petroleum Hydrocarbons (TEPH [C10-C36]) by EPA Method 8015. Analytical results for TVPH and TEPH will be added together to calculate Total Petroleum Hydrocarbons (TPH). See the attached Figure 2 for an illustration of the wellhead layout and proposed discreet soil sample locations for field screening and for laboratory analysis. See the Additional Investigative Actions section below for a summary of the flowline investigation and sampling activities.

Proposed Groundwater Sampling

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

Depth to groundwater in the vicinity of the facility has been determined to be approximately 70 feet below ground surface based on ground elevation and alluvial groundwater elevation contours from the 2010 Lost Creek Basin Aquifer Recharge and Storage Study. Groundwater or a pathway to groundwater are not expected to be encountered during facility closure activities. However, if groundwater is encountered, one groundwater sample will be collected in accordance with COGCC Rule 915.e.(3), and will be submitted to an accredited laboratory for analysis of BTEX, naphthalene, 1,2,4-trimethylbenzene, and 1,3,5-trimethylbenzene by EPA Method 8260.

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):

Great Western will remove the flowline by cutting it in 50' to 100' sections and pulling it from the subsurface. Up to four discreet soil samples will be collected for field screening during flowline abandonment. If indications of soil impacts are present, the samples will be submitted to an accredited laboratory for analysis as discussed in the Proposed Soil Sampling section above. If indications of groundwater impacts are present, samples will be collected and submitted to an accredited laboratory for analysis as discussed in the Proposed Groundwater Sampling section above. See the attached Figure 3 for an illustration of the wellhead, flowline, and associated tank battery and proposed field screening sample locations.

SITE INVESTIGATION REPORT

SAMPLE SUMMARY

Soil

Number of soil samples collected 1
Number of soil samples exceeding 915-1 0
Was the areal and vertical extent of soil contamination delineated? Yes
Approximate areal extent (square feet) 0

NA / ND

ND Highest concentration of TPH (mg/kg) _____
NA Highest concentration of SAR _____
BTEX > 915-1 No
Vertical Extent > 915-1 (in feet) 0

Groundwater

Number of groundwater samples collected 0
Was extent of groundwater contaminated delineated? No
Depth to groundwater (below ground surface, in feet) 0
Number of groundwater monitoring wells installed _____
Number of groundwater samples exceeding 915-1 _____

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 915-1
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?

Background soil samples were collected in association with facility closure activities at the tank battery, COGCC Remediation Project #16788.

☐ 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? No

SOURCE REMOVAL SUMMARY

Describe how source is to be removed.

Based on site investigation activities and laboratory analytical results for confirmation soil sample SS3-1 collected adjacent to the Davis 1-30 wellhead, source removal is not needed.

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.

Based on site investigation activities and laboratory analytical results for confirmation soil sample SS3-1 collected adjacent to the Davis 1-30 wellhead, a remediation plan is not needed.

Soil Remediation Summary

☐ In Situ

☐ Ex Situ

____ Bioremediation (or enhanced bioremediation)

____ Excavate and offsite disposal

_____ Chemical oxidation
_____ Air sparge / Soil vapor extraction
_____ Natural Attenuation
_____ Other _____

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 site investigation activities.

REMEDIATION PROGRESS UPDATE

PERIODIC REPORTING

Approved Reporting Schedule:

☐ Quarterly ☐ Semi-Annually ☐ Annually ☐ Other _____

☐ Request Alternative Reporting Schedule:

☐ Semi-Annually ☐ Annually ☐ Other _____

Rule 913.e:

After initial approval of a Form 27, the Operator will provide quarterly update reports in a Supplemental Form 27 to document progress of site investigation and remediation, unless an alternative reporting schedule has been requested by the Operator and approved by the Director. The Director may request a more frequent reporting schedule based on site-specific conditions.

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? No

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? Yes _____

If YES:

☒ Compliant with Rule 913.h.(1).

☐ Compliant with Rule 913.h.(2).

☐ Compliant with Rule 913.h.(3).

Do all soils meet Table 915-1 standards? Yes _____

Does the previous reply indicate consideration of background concentrations? Yes _____

Does Groundwater meet Table 915-1 standards? Yes _____

Is additional groundwater monitoring to be conducted? No _____

Operator shall comply with the COGCC 1000-Series Reclamation Requirements for all impacted and disturbed areas.

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.

GWOC has conducted final reclamation of the land and soil affected by the wellhead and flowline in accordance with COGCC 1000-Series Rules. The wellhead and flowline are wholly situated in cropland. All disturbed areas have been reclaimed as nearly as practical to their original condition and the wellhead excavation and flowline trenches have been backfilled. All areas compacted by oil and gas operations have been cross-ripped. GWOC has applied topsoil and compost, the land has been adequately tilled to re-establish a proper seedbed, stabilized to minimize erosion, and returned to the landowner for agricultural use. The landowner will reincorporate the area into the agricultural field and plant crops.

Is the described reclamation complete? Yes _____

Does the reclamation described herein constitute interim or final reclamation of the Oil and Gas Location?

☐ Interim ☒ Final

Did the Surface Owner provide the seed mix? Yes _____

If YES, does the seed mix comply with local soil conservation district recommendations? Yes _____

Did the local soil conservation district provide the seed mix? No _____

SITE RECLAMATION DATES

Proposed date of commencement of Reclamation. 04/07/2021

Proposed date of completion of Reclamation. 04/09/2021

IMPLEMENTATION SCHEDULE

Per Rule 913.d.(2): Any change from the approved implementation schedule will be requested at least 14 days in advance, and the Operator may not make the change without the Director's approval.

PRIOR DATES

Date of Surface Owner notification/consultation, if required. 02/05/2021

Actual Spill or Release date, or date of discovery. _____

SITE INVESTIGATION DATES

Date of Initial Actions described in Site Investigation Plan (start date). 03/16/2021

Proposed site investigation commencement. 04/07/2021

Proposed completion of site investigation. 04/07/2021

REMEDIAL ACTION DATES

Proposed start date of Remediation. _____

Proposed date of completion of Remediation. _____

Per Rule 913.d.(2): Any change from the approved implementation schedule will be requested at least 14 days in advance, and the Operator may not make the change without the Director's approval.

☐ Change from approved implementation schedule per Rule 913.d.(2).

Basis for change in implementation schedule:

OPERATOR COMMENT

Cut and cap activities, associated site investigation, and confirmation soil sampling at the Davis 1-30 wellhead and flowline occurred on April 7, 2021. Four discrete soil samples were collected from the 0-1 ft-bgs (feet below ground surface) interval in each cardinal direction from the wellhead and field screened using a photo-ionization detector (PID). Field screening results ranged from 0.1 parts per million (ppm) to 1.4 ppm. Confirmation soil sample SS3-1, collected from the east side of the wellhead adjacent to the flowline connection, was submitted to Origins Laboratory, Inc. (Origins) in Denver, CO. Origins analyzed the soil sample for benzene, toluene, ethylbenzene, total xylenes (BTEX), and naphthalene by EPA Method 8260, and Gasoline Range Organics (GRO) [C6-C10], Diesel Range Organics (DRO) [C10-C28], and Residual Range Organics (ORO) [C28-C40] by EPA Method 8015. All analytes were reported below their respective laboratory method detection limits.

Great Western removed the flowline by trenching along the flowline and cutting and pulling it from the subsurface in 50' to 100' sections. A portion of a historic flowline was also removed where it had been previously left in place. Four discrete soil samples were collected along the active flowline and two discrete soil samples were collected along the historic flowline and screened using a PID. Field screening results along the flowlines ranged from 0.0 ppm to 0.5 ppm. Soil impacts were not observed during flowline abandonment activities and no soil samples were submitted for laboratory analysis.

Please refer to the attached Wellhead and Flowline Closure Checklists for a detailed description of the site investigation activities. Soil sample and field screening locations are presented on Figure 2, and analytical results are presented on Table 1. Sample location information is provided on Table 2. A photo log and a copy of the laboratory analytical report are also attached.

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 EHS Specialist

Submit Date: _____

Email: jdavidson@gwp.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: 16770

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

402730717	PHOTO DOCUMENTATION
402730718	SOIL SAMPLE LOCATION MAP
402730719	ANALYTICAL RESULTS
402730720	SITE INVESTIGATION REPORT
402730721	ANALYTICAL RESULTS
402730778	SITE INVESTIGATION REPORT

Total Attach: 6 Files

General Comments

<u>User Group</u>	<u>Comment</u>	<u>Comment Date</u>
		Stamp Upon Approval

Total: 0 comment(s)