

State of Colorado Oil and Gas Conservation Commission

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10/16/2020

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>1001 17TH STREET #2000</u> | | Phone: <u>(720) 595-2132</u> |
| City: <u>DENVER</u> | State: <u>CO</u> | Zip: <u>80202</u> |
| Contact Person: <u>Jason Davidson</u> | Email: <u>j davidson@gwp.com</u> | Mobile: <u>()</u> |

PROJECT, PURPOSE & SITE INFORMATION

PROJECT INFORMATION

Remediation Project #: 10100Initial Form 27 Document #: 401235959

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: <u>SPILL OR RELEASE</u> | Facility ID: <u>445284</u> | API #: _____ | County Name: <u>WELD</u> |
| Facility Name: <u>SPILL/RELEASE POINT</u> | | Latitude: <u>40.486085</u> | Longitude: <u>-104.870475</u> |
| | | ** correct Lat/Long if needed: Latitude: _____ | Longitude: _____ |
| QtrQtr: <u>NESE</u> | Sec: <u>15</u> | Twp: <u>6N</u> | Range: <u>67W</u> |
| | | Meridian: <u>6</u> | Sensitive Area? <u>Yes</u> |

SITE CONDITIONS

General soil type - USCS Classifications SMMost Sensitive Adjacent Land Use agricultural, residentialIs domestic water well within 1/4 mile? NoIs surface water within 1/4 mile? YesIs groundwater less than 20 feet below ground surface? Yes

Other Potential Receptors within 1/4 mile

Residential development in place approximately 200 feet to the northwest. Greeley No. 2 Canal in place approximately 700 feet to the south.

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 |
|-----------|----------------|----------------------|--|
| Yes | GROUNDWATER | Vicinity of MW-2 | Site Investigation & Groundwater Sampling Activities |
| Yes | SOILS | 43' x 48' x 12' deep | Site Investigation, Excavation, & Soil Sampling Activities |

INITIAL ACTION SUMMARY

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

March 2016 excavation of approximately 250 cubic yards of visibly impacted soil in the vicinity of the former produced water storage vessel. The results of a May 2016 investigation determined that groundwater had been impacted at the site, and that impacted soil remained at the site and additional excavation was needed. In October 2016, the excavation was extended and 650 cubic yards of additional impacted soils were removed. An activated carbon remedial agent was incorporated into the soils and groundwater at the base of the excavation, and slotted PVC pipe was installed horizontally within the excavation to provide access to groundwater for possible future remediation efforts.

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):

Please refer to the attached Fremont Environmental Excavation Report and Groundwater Data Submittal Documents for a summary of soil sampling activities conducted at the Site.

Proposed Groundwater Sampling

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

Please refer to the attached Fremont Environmental Groundwater Data Submittal Documents for a summary of Third Quarter 2020 groundwater sampling activities conducted at the Site.

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 18

Number of soil samples exceeding 910-1 5

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

Approximate areal extent (square feet) 2064

NA / ND

-- Highest concentration of TPH (mg/kg) 2700

NA Highest concentration of SAR

BTEX > 910-1 Yes

Vertical Extent > 910-1 (in feet) 12

Groundwater

Number of groundwater samples collected 6

Was extent of groundwater contaminated delineated? Yes

Depth to groundwater (below ground surface, in feet) 11'

Number of groundwater monitoring wells installed 6

Number of groundwater samples exceeding 910-1 0

ND Highest concentration of Benzene (µg/l)

ND Highest concentration of Toluene (µg/l)

-- Highest concentration of Ethylbenzene (µg/l) 10.5

-- Highest concentration of Xylene (µg/l) 13.3

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.

Please refer to the attached Fremont Environmental Excavation Report for a summary of source removal activities conducted at the Site. Copies of the waste manifests are also attached.

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.

Please refer to the attached Fremont Environmental Excavation Report for a summary of remediation activities conducted at the Site.

Soil Remediation Summary

☐ In Situ

_____ Bioremediation (or enhanced bioremediation)
_____ Chemical oxidation
_____ Air sparge / Soil vapor extraction
_____ Natural Attenuation
_____ Other _____

☒ Ex Situ

Yes _____ Excavate and offsite disposal
If Yes: Estimated Volume (Cubic Yards) _____ 810
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)
Yes _____ 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.

Please refer to the attached Fremont Environmental Groundwater Data Submittal Documents for a summary of the Third Quarter 2020 groundwater monitoring activities conducted at the Site.

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? Yes _____

Describe beneficial use, if any, of E&P Waste derived from this remediation project:

None

Volume of E&P Waste (solid) in cubic yards 810

E&P waste (solid) description Hydrocarbon impacted soil

COGCC Disposal Facility ID #, if applicable: _____

Non-COGCC Disposal Facility: Waste Management's North Weld
Landfill in Ault, Colorado

Volume of E&P Waste (liquid) in barrels 0

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? Yes _____

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

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? Yes _____

Is additional groundwater monitoring to be conducted? Yes _____

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? 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. 03/22/2016

Actual Spill or Release date, if known. _____

SITE INVESTIGATION DATES

Date of Initial Actions described in Site Investigation Plan (start date). 03/15/2016

Date of commencement of Site Investigation. 05/03/2016

Date of completion of Site Investigation. 10/04/2016

REMEDIAL ACTION DATES

Date of commencement of Remediation. 10/04/2016

Date of completion of Remediation. 09/18/2020

SITE RECLAMATION DATES

Date of commencement of Reclamation. _____

Date of completion of Reclamation. _____

OPERATOR COMMENT

The next quarterly groundwater sampling event is scheduled for mid-December 2020.

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: 10/16/2020

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: RICK ALLISON

Date: 10/22/2020

Remediation Project Number: 10100

COA Type

Description

| | |
|--|--|
| | |
|--|--|

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

| | |
|-----------|--------------------------------|
| 402510970 | FORM 27-SUPPLEMENTAL-SUBMITTED |
| 402511076 | DISPOSAL MANIFESTS |
| 402512687 | ANALYTICAL RESULTS |
| 402512689 | REMEDIAL PROGRESS REPORT |

Total Attach: 4 Files

General Comments

User Group

Comment

Comment Date

| | | |
|--|--|---------------------|
| | | Stamp Upon Approval |
|--|--|---------------------|

Total: 0 comment(s)