

State of Colorado
Oil and Gas Conservation Commission

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401642858
Receive Date:
06/29/2018

Report taken by:
RICK ALLISON

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: <u>BONANZA CREEK ENERGY OPERATING COMPANY LLC</u>	Operator No: <u>8960</u>	Phone Numbers
Address: <u>410 17TH STREET SUITE #1400</u>	City: <u>DENVER</u> State: <u>CO</u> Zip: <u>80202</u>	Phone: <u>(720) 4406100</u>
Contact Person: <u>Brian Dodek</u>	Email: <u>BDodek@Bonanzacr.com</u>	Mobile: <u>()</u>

PROJECT, PURPOSE & SITE INFORMATION

PROJECT INFORMATION

Remediation Project #: 11496 Initial Form 27 Document #: 401642858

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 _____

SITE INFORMATION

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

Facility Type: <u>SPILL OR RELEASE</u>	Facility ID: <u>454242</u>	API #: _____	County Name: <u>WELD</u>
Facility Name: <u>DOW 23-28 RTB</u>	Latitude: <u>40.367885</u>	Longitude: <u>-104.445422</u>	
** correct Lat/Long if needed: Latitude: _____		Longitude: _____	
QtrQtr: <u>NESW</u>	Sec: <u>28</u>	Twp: <u>5N</u>	Range: <u>63W</u> Meridian: <u>6</u> Sensitive Area? <u>Yes</u>

SITE CONDITIONS

General soil type - USCS Classifications SM Most Sensitive Adjacent Land Use Grassland
 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? Yes

Other Potential Receptors within 1/4 mile

Wetlands ~20', Occupied building ~1425'

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
Yes	GROUNDWATER	Unknown	Laboratory Analysis
Yes	SOILS	50'L x 50' W x 6'D	Laboratory Analysis

INITIAL ACTION SUMMARY

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

The production tank load line separated at a 4" valve and released the tank contents inside the lined containment. However, upon removing the ballast from the containment, several large holes were discovered in the poly containment liner. The tank battery was decommissioned and all of the impacted soil was removed. Groundwater was encountered and impact was observed.

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):

Eight grab samples were collected and submitted for laboratory analysis. The soil samples were analyzed for TPH (DRO-GRO) and BTEX. Analytical results indicate compliance with COGCC Table 910-1.

Proposed Groundwater Sampling

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

One grab groundwater sample was collected from the open excavation and submitted for laboratory analysis. The sample was analyzed for BTEX and analytical results indicate benzene concentrations above COGCC Table 910-1. Six groundwater monitoring well locations are proposed in Figure 3.

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 0
Was the areal and vertical extent of soil contamination delineated? Yes
Approximate areal extent (square feet) 2500

NA / ND

-- Highest concentration of TPH (mg/kg) 0.84
NA Highest concentration of SAR
BTEX > 910-1 No
Vertical Extent > 910-1 (in feet) 6

Groundwater

Number of groundwater samples collected 1
Was extent of groundwater contaminated delineated? No
Depth to groundwater (below ground surface, in feet) 4'
Number of groundwater monitoring wells installed 0
Number of groundwater samples exceeding 910-1 1

-- Highest concentration of Benzene (µg/l) 120
-- Highest concentration of Toluene (µg/l) 170
-- Highest concentration of Ethylbenzene (µg/l) 7.9
-- Highest concentration of Xylene (µg/l) 120
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

SOURCE REMOVAL SUMMARY

Describe how source is to be removed.

The impacted soil was excavated and hauled off to Buffalo Ridge landfill.

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.

All of the impacted soil was been removed. The only remaining impact of the release is to the groundwater. BCEI plans to install six groundwater monitoring wells around the perimeter of the release. Please see the attached Figure 3 for proposed well placement. Once installed, BCEI will sample the six monitoring wells on a quarterly basis until four consecutive sampling events indicate compliance with COGCC Table 910-1.

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) 370
 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

Yes Bioremediation (or enhanced bioremediation)
 No Chemical oxidation
 No Air sparge / Soil vapor extraction
 Yes Natural Attenuation
 No 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.

After all of the impacted soil was removed, 300 pounds of activated carbon were added to the exposed groundwater to help adsorb residual hydrocarbon impact and promote bacterial degradation. BCEI has proposed to install 6 groundwater monitoring wells around the release perimeter. Monitoring wells will be sampled on a quarterly basis and analyzed for benzene. Please see Figure 2 for proposed monitoring well placement.

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? 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: _____

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.

The facility was decommissioned and all of the road base was removed. The pad sat on relatively level topography and was ripped, seeded, and crimped with straw.

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 approve the seed mix? Yes

If NO, does the seed mix comply with local soil conservation district recommendations? Yes

IMPLEMENTATION SCHEDULE

PRIOR DATES

Date of Surface Owner notification/consultation, if required. 03/07/2018

Actual Spill or Release date, if known. _____

SITE INVESTIGATION DATES

Date of Initial Actions described in Site Investigation Plan (start date). 03/07/2018

Date of commencement of Site Investigation. 03/07/2018

Date of completion of Site Investigation. _____

REMEDIAL ACTION DATES

Date of commencement of Remediation. 03/08/2017

Date of completion of Remediation. _____

SITE RECLAMATION DATES

Date of commencement of Reclamation. 04/10/2018

Date of completion of Reclamation. 04/12/2018

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: ` Brian Dodek _____

Title: Env Manager _____

Submit Date: ` 06/29/2018 _____

Email: BDodek@Bonanzacrk.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: 07/04/2018 _____

Remediation Project Number: 11496 _____

COA Type**Description**

	Operator shall submit Annual Monitoring Reports including all laboratory analytical reports for all samples collected during the reporting period. The Operator may, at the Operator's option, submit Monitoring Reports on a more frequent basis in lieu of Annual Reports.
	Operator indicated that groundwater samples will be analyzed for benzene. All groundwater samples shall be analyzed for benzene, toluene, ethylbenzene and total xylenes.

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**

401642858	FORM 27-INITIAL-SUBMITTED
401671111	ANALYTICAL RESULTS

Total Attach: 2 Files

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

Environmental	Changed related facility from Location 447280 to Spill 454242	07/04/2018
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Total: 1 comment(s)