

#7037

FOR OGCC USE ONLY

FORM
27
Rev 6/99State of Colorado
Oil and Gas Conservation Commission

1120 Lincoln Street, Suite 801, Denver, Colorado 80203 (303) 894-2100 Fax 894-2109

RECEIVED
5/14/2012

SITE INVESTIGATION AND REMEDIATION WORKPLAN

This form shall be submitted to the Director for approval prior to the initiation of site investigation and remediation activities. Form 27 is intended to be used whenever possible. Additional documentation will be required when large volumes of soil and groundwater have been impacted or involve large facilities with multiple source areas. See Rule 910. Attach as many pages as needed to fully describe the proposed work.

CAUSE OF CONDITION BEING INVESTIGATED AND REMEDIATED

☒ Spill or Release ☐ Plug & Abandon ☐ Central Facility Closure ☐ Site/Facility Closure ☐ Other (describe): _____

OGCC Employee: _____

☐ Spill ☐ Complaint
☐ Inspection ☐ NOAV

Tracking No: _____

GENERAL INFORMATION

OGCC Operator Number: 8960		Contact Name and Telephone	
Name of Operator: Bonanza Creek Energy, Inc.		Name: Tom Peterson	
Address: 410 17th Street, Suite 1500		No: 720-440-6113	
City: Denver State: CO Zip: 80202		Fax: 720-279-2331	
API/Facility No: Not Applicable 428915		County: Jackson	
Facility Name: Walden Water Flood Facility		Facility Number: 428915	
Well Name: Not Applicable		Well Number: _____	
Location (QtrQtr, Sec, Twp, Rng, Meridian): SENW & NESW 2-T9N-R79W		Latitude: 40.779829 Longitude: -106.233427	

TECHNICAL CONDITIONS

Type of Waste Causing Impact (crude oil, condensate, produced water, etc.):		Unknown	
Site Conditions: Is location within a sensitive area (according to Rule 901e)?		<input checked="" type="checkbox"/> Y <input type="checkbox"/> N If yes, attach evaluation. Groundwater < 20 ft.	
Adjacent land use (cultivated, irrigated, dry land farming, industrial, residential, etc.):		BLM Rangeland	
Soil type, if not previously identified on Form 2A or Federal Surface Use Plan:		Unknown - to be determined	
Potential receptors (water wells within 1/4 mi, surface waters, etc.):		Surface water approximately 2,500' southwest of the site, water wells approximately 680' southwest of the site and, groundwater at approximately 7' bgs.	
Description of Impact (if previously provided, refer to that form or document):			
Impacted Media (check):	Extent of Impact:	How Determined:	
<input checked="" type="checkbox"/> Soils	Unknown	Soil samples will be collected for laboratory analysis.	
<input type="checkbox"/> Vegetation	_____	_____	
<input checked="" type="checkbox"/> Groundwater	Unknown	Groundwater samples will be collected for laboratory analysis.	
<input type="checkbox"/> Surface water	_____	_____	

REMEDIALATION WORKPLAN

Describe initial action taken (if previously provided, refer to that form or document):

Bonanza Creek Energy, Inc. was notified by the COGCC on May 4, 2012 of a potential petroleum hydrocarbon release from their Walden Water Flood Facility. Assessment activities conducted by Praxair at their adjoining CO₂ facility, identified petroleum hydrocarbon impacts at their facility that could potentially have resulted from operations at Bonanza Creek's facility. In response to this notification, Bonanza Creek representatives met on-site with Praxair and COGCC personnel on May 7, 2012.

Describe how source is to be removed:

Bonanza Creek will pressure test all underground pipelines at this site to identify any potential sources of the release. A subsurface soil and groundwater assessment will be conducted to determine if the petroleum hydrocarbon impacts originated from Bonanza Creek's site. Soil and groundwater samples will be collected from the assessment borings for laboratory analysis. Results from the pressure tests and subsurface soil and groundwater assessment will be provided to the COGCC.

See Attachment 1 for additional details.

Describe how remediation of existing impacts is to be accomplished, including removal and disposal at an injection well or licensed facility, land treatment on site, removal of impacted groundwater, insitu bioremediation, burning of oily vegetation, etc.:

See Attachment 1.

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Tracking Number: _____
Name of Operator: Bonanza Creek Energy, Inc.
OGCC Operator No: 8960
Received Date: _____
Well Name & No: Not Applicable
Facility Name & No: Walden Water Flood Facility

REMEDATION WORKPLAN (CONT.)

OGCC Employee: _____

If groundwater has been impacted, describe proposed monitoring plan (# of wells or sample points, sampling schedule, analytical methods, etc.).
Based on the assessment results, additional details will be provided in a subsequent Form 27 update report.
See Attachment I.

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. Use additional sheet for description if required.
Will be provided in a subsequent Form 27 update report.

Attach samples and analytical results taken to verify remediation of impacts. Show locations of samples on an onsite schematic or drawing.
Is further site investigation required? ☐ Y ☐ N If yes, describe:
Will be provided in a subsequent Form 27 update report.

Final disposition of E&P waste (landtreated and disposed onsite, name of licensed disposal facility, recycling, reuse, etc.):
Will be provided in a subsequent Form 27 update report.

IMPLEMENTATION SCHEDULE

Date Site Investigation Began: <u>5/7/12</u>	Date Site Investigation Completed: <u>Active</u>	Remediation Plan Submitted: _____
Remediation Start Date: <u>5/7/12</u>	Anticipated Completion Date: <u>12/31/12</u>	Actual Completion Date: _____

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

Print Name: Tom Peterson

Signed: Tom Peterson Title: Engineering Technician Date: 5/14/12

OGCC Approved: Cheryl J. Finner Title: Envir. Sup. Date: 5/15/12

Provide schedule with time line of pipeline testing, and the subsurface soil and groundwater assessment and any other related investigative activities.

AOE 5/15/12

ATTACHMENT 1

Bonanza Creek Energy, Inc.

Walden Water Flood Facility Subsurface Assessment

Background

On May 4, 2012, the Colorado Oil and Gas Conservation Commission (COGCC) notified Bonanza Creek Energy, Inc. (Bonanza Creek) of a potential petroleum hydrocarbon release at their Walden Water Flood Facility. Praxair's CO₂ facility is located approximately 500 feet west of Bonanza Creek's water flood facility. During Praxair's site assessment activities, petroleum hydrocarbon impacts to groundwater were discovered. Bonanza Creek's adjoining facility was identified as a possible source of the impacts. In response to COGCC's notification of the potential release, Bonanza Creek representatives met on-site with Praxair and COGCC personnel on May 7, 2012.

Bonanza Creek agreed to complete pressure tests on all underground lines in order to identify any potential sources of the release. Bonanza Creek will also conduct a subsurface soil and groundwater assessment to determine if the petroleum hydrocarbon impacts originated from their site.

It should be noted that Praxair has recently decommissioned a septic leach field under Colorado Department of Public Health and Environment's (CDPHE) hazardous waste authority and currently has a remediation system operating to treat previous releases at their facility.

Assessment Scope of Work

Bonanza Creek has contracted LT Environmental, Inc. (LTE) to review available Praxair and Bonanza Creek historical site information and conduct a subsurface assessment at the site. The findings and analytical results obtained from this assessment will be used to select and design a remedial approach for the site, if required. The assessment scope of work (SOW) is described below.

LTE proposes to install up to sixteen shallow soil borings at the site using a truck-mounted GeoProbe[®] rig. The proposed borehole locations are presented on Figure 1. If necessary, and at the discretion and judgment of the field geologist, additional soil boreholes may be advanced in order to determine the aerial extent of any soil impacts encountered.

The Utility Notification Center of Colorado (UNCC) will be contacted to request the marking of underground utilities a minimum of 48 hours (two business days) prior to mobilizing to the site. The boreholes will be continuously sampled and an LTE geologist will log each borehole from ground surface to total depth. Soil type, odors, staining, and other observable soil characteristics will be recorded on the drilling logs. Each sample interval will also be screened using a photoionization detector (PID). The soil interval from each borehole with the highest PID

reading will be submitted for laboratory analysis of TPH by Environmental Protection Agency (EPA) Method 8015 and BTEX analysis by EPA Methods 8260B and 8015. If elevated PID readings (>background) or staining are not encountered in a borehole, a soil sample will be collected immediately above the groundwater table and submitted for laboratory analysis.

The proposed soil borings will be advanced into the shallow groundwater table. A groundwater sample will be collected from each soil boring and submitted for laboratory analysis of BTEX by EPA Method 8260B. If stained soil and/or elevated PID readings extend into the water table, the boreholes will be completed as groundwater monitoring wells. Soil borings not completed as monitoring wells will be properly abandoned and sealed with a hydrated bentonite plug. Prior to exiting the site, the locations of the assessment boreholes/monitoring wells and site infrastructure will be recorded using a hand-held global positioning system unit. Groundwater monitoring wells will be professionally surveyed to determine vertical and horizontal location so that local groundwater flow direction can be calculated.

The soil and groundwater samples will be collected in laboratory supplied jars, immediately placed in an ice-filled cooler, and delivered to the contract laboratory under completed chain of custody. The soil and groundwater samples will be run under a standard 10 business day turnaround time.

Reporting

Upon receipt of the analytical results from the contract laboratory, LTE will prepare a letter report summarizing the assessment findings and analytical results. The letter report will include the pressure test results, an updated Site Map showing the completed borehole locations, an analytical results summary table, copies of the boring logs, and the laboratory analytical report. The letter report will be presented to the COGCC as an update to this Form 27 and will include, depending on the assessment findings, a recommended remedial approach or a request for no further action.



