



to **POWERTECH (USA) INC.** ✓  
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**RICHARD E. BLUBAUGH**  
Vice President – Health  
Safety & Environment Resources

**NON CONFIDENTIAL** ✓

March 9, 2010

Allen C. Sorenson  
Reclamation Specialist  
to Division of Reclamation, Mining and Safety ✓  
1313 Sherman Street, Room 215  
Denver, Colorado 80203

**RE: Powertech Responses to Third Review of Notice of Intent Modification MD-03, File No. P-2008-043, Centennial Project, Weld County, Colorado** ✓

Dear Mr. Sorenson:

Please find included the Powertech (USA) Inc. (Powertech) responses to the Division of Reclamation, Mining and Safety (DRMS) comments contained in its Third Review of Notice of Intent (NOI) File Number P-2008-043 MD-03, dated March 4, 2010.

*DRMS Comment #1:*

*Powertech's October 28, 2009 submittal states "All cleaning and inspection procedures outlined in the Powertech Produced Water Vessel Cleaning and Inspection Procedure will be adhered to and will be certified as complete before water containment vessels are brought on the site. All manifolds, valves, and transfer pumps will be cleaned as described in the attached procedure. Additionally piping will be new and National Sanitation Foundation or otherwise certified for potable water"*

*Provide a commitment to provision to DRMS of the certifications described in the preceding statement and a commitment that the tanks will not be used to store produced groundwater until after the certifications have been accepted by DRMS in writing.*

**Powertech Response to DRMS Comment #1:**

Powertech commits to provide to the DRMS the certifications described in its Comment #1. Powertech will not begin storing produced groundwater within the water containment vessels until after certifications outlined in the Powertech Produced Water Vessel Cleaning and Inspection Procedure have been accepted by the DRMS in writing.

*DRMS Comment #2:*

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*Powertech's October 28, 2009 submittal states "initially natural background radiation levels shall be measured and recorded" at the pump test site, and that "radiological measurements using an alpha and gamma probe shall be conducted on the containment vessel before it is utilized onsite and, again, after onsite use; all readings will be documented on the appropriate Powertech form." Provide a commitment to provision to DRMS of the results of these required radiological measurements and a commitment that the tanks will not be used to store produced groundwater until after the results have been accepted by DRMS in writing. Provide a commitment to notify DRMS in advance of the schedule for collecting the radiological measurements, as DRMS may opt to inspect and audit the procedures.*

**Powertech Response to DRMS Comment #2:**

Powertech commits to provide to the DRMS the results of the radiological measurements specified in Powertech's October 28, 2009 submittal and the DRMS Comment #2. Produced water will not be stored in the water containment vessels until initial radiological measurements are provided to the DRMS, and accepted in writing. Powertech also commits to notify the DRMS in advance of the schedule for collecting radiological measurements.

*DRMS Comment #3:*

*Powertech's February 2, 2010 submittal states "Rain for Rent keeps a detailed history of the previous contents of tanks. The water holding tanks to be used by Powertech and provided by Rain for Rent will have been previously used to contain water only, at least back one tank use event." Provide a commitment to provision to DRMS of Rain for Rents detailed history of the previous contents of tanks, at least back one tank event, and a commitment that the tanks will not be used to store produced groundwater until after the detailed history has been accepted by DRMS in writing.*

**Powertech's Response to DRMS Comment #3:**

Powertech's February 2, 2010 submittal stated that water containment vessels to be used would have been previously used to contain water only, at least back one tank use event. This was a reasonable commitment prior to Powertech learning that geochemical analyses of rinsate would be required by the DRMS during cleaning of the water containment vessels to be used to store produced water. The necessity of assuring usage of tanks that have previously held only water during their last usage is questionable since Powertech now will be required to analyze tank rinsate for certain volatile and semi-volatile organic compounds, total petroleum hydrocarbons, and RCRA metals.

Although Powertech will request from Rain for Rent tanks that have held only water during the last usage event, Powertech would like the flexibility to utilize any tank available regardless of its previously stored contents. Because Powertech will commit to the rinsate sample analysis protocol required by DRMS, Powertech suggests that the "previous contents" provision outlined in the DRMS Comment #3 be removed. However, if the DRMS finds the "previous contents"

provision necessary even with the rinsate sampling analysis requirements, Powertech will commit to the requirement in DRMS' Comment #s3.

*DRMS Comment #4:*

*Powertech's February 2, 2010 submittal describes tank rinsate testing in accordance with previous discussions between Powertech and DRMS held on January 22, 2010. Since the date of those discussions, DRMS has learnt that EPA will be requiring testing of the tanked water prior to injection, and analysis for RCRA metals, certain volatile and semi-volatile organic compounds, total petroleum hydrocarbons, and total coliforms. Based on this information, DRMS has determined that rinsate testing of each tank must be conducted, prior to deployment to the pump test site, as follows.*

- a. Collection of rinse water sample prior to application to tanks for analysis of total organic carbon (TOC).*
- b. Analysis of rinsate for TOC and for dissolved arsenic, barium, cadmium, chromium, lead, mercury, selenium, and silver.*
- c. If the metals concentrations in any samples exceed Colorado groundwater standards, then the DRMS accepts the course of action described in Powertech's February 2, 2010 submittal to re-clean and resample the tank(s).*
- d. If rinse water TOC is above two milligrams per liter (mg/l) and TOC in the rinsate is more than two mg/l above the level measured in the rinse water, or if the rinse water TOC is below two mg/l and the rinsate TOC is above four mg/l, then additional analysis of the rinsate will be required. The tank(s) failing TOC must be re-cleaned and rinsate analyzed for certain volatile and semi-volatile organic compounds (methods SW-846 8260 and 8270) and total petroleum hydrocarbons. If unacceptable levels of contamination are indicated by the test results, then the tank(s) must either be rejected for use at the pump test site, or must again be re-cleaned and re-tested.*

**Powertech's Response to DRMS Comment #4:**

Powertech commits to the sampling procedures outlined in the DRMS Comment #4a through #4d. Additionally, Powertech will inform the DRMS of the sampling schedule for collection of rinse water and rinsate for the cleaning of the water containment vessels.

**Powertech's Response to the DRMS Costs to Reclaim Pump Test Site:**

*Freeze Protection:*

Powertech will not be conducting the Centennial aquifer pumping test until April 15<sup>th</sup>, 2010, at the earliest. The average low temperature at Nunn Colorado on April 15<sup>th</sup> is 36 degrees Fahrenheit, and the record low temperature on April 15<sup>th</sup> is 20 degrees Fahrenheit. It is incredibly unlikely that freezing conditions will exist at the pump test site that will be sufficient enough in magnitude and duration to freeze water within the water containment vessels. With a

Powertech commitment to commence the aquifer pumping test no earlier than April 15<sup>th</sup>, 2010, Powertech feels that the freeze protection portion of the bonding calculation should be removed.

In order to further justify the removal of the freeze protection portion of the aquifer pump test bond, Powertech will commit to monitoring the long range forecast prior to beginning to store water in the tanks. If abnormally sub-freezing air temperatures are to be expected within the long range forecast, Powertech will postpone commencement of the aquifer pumping test until more seasonal conditions are anticipated. Furthermore, Powertech will install valves so that piping from the well head to the water containment vessels can be evacuated, thus eliminating the potential of water freezing within the piping.

*Additional Water Containment Vessel:*

Powertech would like to have the flexibility to bring one more Rain for Rent water containment vessel onsite for use during the proposed aquifer pumping test. Several potential conditions can arise during the aquifer pump test which warrants having an additional water containment vessel onsite, such as a malfunction of the pump or generator. If such a condition were to take place Powertech may need to start the 72 hour test over, which would require additional containment capabilities. In conversations with DRMS personnel, Powertech can have additional tanks on standby for delivery to the pump test site as long as a bond was immediately posted for the additional tank before being brought onsite. However with the geochemical analysis requirements and potential complexities of bond placement, Powertech prefers at this time to add an additional tank to the DRMS reclamation bond calculation. The total number of Rain for Rent water containment vessels to be located at the pump test site now will be five (5). The additional tank will not require the perimeter fence to be any larger.

If you have any questions or require additional information, please feel free to contact myself at (303)790-7528 or Michael Beshore at (970)556-5988.

Sincerely,



Richard E. Blubaugh  
Vice President – Environmental Health & Safety Resources  
Powertech (USA) Inc.

cc: M. Beshore  
T. Walsh