POWERTECH (USA) INC.

JOHN M. MAYS
Chief Operating Officer

November 17, 2014

Ms. Valois Shea
U.S. EPA Region 8
Mail Code: 8P-W-UIC
1595 Wynkoop Street
Denver, CO 80202-1129

Re: Dewey-Burdock Project Class III and Class V Underground Injection Control (UIC) Permit Applications - Follow-Up to October 22, 2014 Meeting

Dear Ms. Shea:

This letter is in response to EPA's questions discussed in our meeting on October 22, 2014. The two issues addressed within this letter include impoundment construction and a non-drinking water, domestic well within the proposed aquifer exemption boundary.

Impoundment Construction

It should be noted that Powertech plans to submit an application to EPA for approval to construct wastewater storage and treatment impoundments in the Dewey-Burdock Project that are regulated under 40 CFR Part 61, Subpart W, as directed by 40 CFR § 61.07. The application will be submitted at least 60 days prior to construction of the impoundments. Due to unique treatment of fluid stored in specific impoundments as well as other factors, this application may include a request for a variance. Regardless, Powertech is committed to abiding by 40 CFR Part 61, Subpart W, for which a recent draft rule revision was issued in 2014, but which has yet to be finalized. Powertech understands that EPA is currently reviewing comments from the interested public, including comments submitted by Powertech. Powertech provided oral comments to EPA on the proposed rule in Denver on September 4, 2014. Written comments also were submitted prior to the October 29, 2014 deadline.

By this letter, Powertech commits to one of the following in regard to its wastewater storage and treatment impoundment construction at the Dewey-Burdock Project:

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1.) Relocate any single-lined impoundments (i.e., those that contain a single synthetic liner overlying a clay liner) that overlie alluvium away from the alluvium such that no single-lined impoundment overlies alluvium.

2.) Remove the alluvial material so that no single-lined impoundment overlies the alluvium.

3.) Construct a hydrologic barrier such as a soil-bentonite slurry wall between any single-lined impoundments that overlie alluvium and the downgradient alluvium to prevent any potential leakage from reaching the alluvial aquifer.

4.) Install dual synthetic liners with leak detection systems for any of the impoundments that overlie alluvium.

These four commitments apply only to wastewater storage and treatment impoundments in the Burdock portion of the project. They do not apply to impoundments in the Dewey portion of the project, which are planned in areas that do not overlie alluvium. Furthermore, these commitments apply only to impoundments that are currently designed with a single synthetic liner overlying a clay liner.

The construction specifications of these impoundments are not described in either UIC application to EPA, but they are described in Powertech's NRC license application for the Dewey-Burdock Project (e.g., in the June 2011 Technical Report [TR] Responses to Request for Additional Information [RAI], NRC Adams Accession No. ML112071064). The impoundments currently designed with single synthetic liners are:

<u>Deep Disposal Well (DDW) Option</u>

- surge pond
- outlet pond

<u>Land Application Option</u>

- treated water storage ponds
- spare storage pond
- outlet pond

While Powertech agrees to make these additional commitments in order to address EPA staff's questions, we respectfully submit that the existing impoundment designs have been thoroughly

reviewed and evaluated by the NRC staff and have been determined by NRC staff to be adequately protective of public health and the environment. More specifically, Section 4.2.3.1.2 of the Safety Evaluation Report (SER), issued by NRC in April 2014, documents NRC staff's review of (a) pond siting, including soil conditions, (b) design and construction details, and (c) operational inspection plans (NRC Adams Accession No. ML14043A347). Regarding the impoundments with dual synthetic liners and leak detection systems, they determined on p. 117 that:

> "A review of the proposed liner system components indicates that the specifications for the radium settling ponds and CPP brine pond comply with the regulations in 10 CFR Part 40, Appendix A, requiring a synthetic liner have a leak detection system. The applicant has adequately described the materials that will be used to construct the liner and leak detection systems."

Regarding the single lined impoundments (including the surge and outlet ponds in the deep disposal well option and the treated water storage, spare storage and outlet ponds in the land application option), NRC staff determined on p. 117 of the SER that:

> "The staff notes that the other ponds have been designed to prevent migration of wastes to groundwater or surface water, which is consistent with standard review plan Section 4.2.3 (NRC, 2003b) and 10 CFR Part 40, Appendix A, Criterion 5A(3)."

Due to the presence of alluvium near the ponds, the NRC license contains a pre-operational condition requiring a shallow groundwater monitoring network for the Dewey and Burdock area impoundments. This is found in license condition 12.25 in NRC license SUA-1600, issued on April 8, 2014 (NRC ADAMS Accession No. ML14043A392):

> "No later than 60 days prior to construction, [Powertech] shall submit to the NRC for review and written verification, a pond detection monitoring plan that contains the number, locations, and screen depths of groundwater monitoring wells to be installed around the Burdock area and Dewey ponds. The plan shall also include sampling frequency and sampling parameters."

NRC staff's authorization for the construction and operation of the impoundments is found in license condition 10.8 in License No. SUA-1600:

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> "The licensee is permitted to construct and operate storage and treatment ponds, as described in Section 4.2 of the approved license application. Routine pond inspections will be conducted consistent with inspection procedures described in Regulatory Guide 3.11."

The pond inspection procedures are found in Section 3.1.6.1.2 of Powertech's approved NRC license application and include the following (p. 90 of the June 2011 TR RAI response):

- Daily inspections of the liner, liner slopes, and other earthwork features
- Daily inspections of pond freeboard
- Monthly inspection of the functionality of leak detection systems
- Daily checks for water accumulation in leak detection systems
- Quarterly inspections of embankment settlement and slope stability. Unscheduled inspections will be performed after occurrence of significant earthquakes, tornadoes, intense local rainfall, or other unusual events

It is also important to note that Powertech will be required, as a condition of its NRC license, to develop a standard operating procedure (SOP) for potential accidents and spills, including pond releases (see license condition 10.4 in SUA-1600). NRC staff will verify the adequacy of all SOPs during the mandatory pre-operational inspection (see license condition 12.3 in SUA-1600). Further, Powertech will be required to document any unplanned releases and report them to NRC staff in accordance with federal regulations in 10 CFR Part 20, Subpart M and 10 CFR § 40.60 (see license condition 11.6 in SUA-1600). In addition, Powertech will be required under its State of South Dakota large scale mine permit and groundwater discharge plan to report any unplanned releases from the ponds (see Pond Leakage Response conditions 1 and 2 in Powertech's recommended large scale mine permit conditions[1]; see also conditions 5 and 14 in Powertech's recommended groundwater discharge plan permit conditions[2]).

Powertech contends that the issues associated with all wastewater storage and treatment impoundments at the project should be regulated only under the proper regulatory authority. The commitments made above are being provided at the oral request of EPA staff and are, in the opinion of Powertech, outside the scope of the UIC applications submitted on the Dewey-Burdock Project.

[1] http://denr.sd.gov/des/mm/powertechminepermitapp.aspx
[2] http://denr.sd.gov/des/gw/Powertech/Powertech_GW_Discharge_Permit.aspx

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Non-Drinking Water Domestic Well (Hydro ID #16)

In reference to well 16, Powertech has an agreement from the current landowner, executed February 9, 2012, that specifies that the well cannot be used for drinking water purposes. Indeed, water quality in this well exceeds drinking water MCLs for gross alpha and radium-226, and exceeds the secondary drinking water standard for sulfate. Please see Table 17.8 (p. 17-26) in the Class III UIC permit application, July 2012 revisions. Powertech has been providing bottled drinking water to the residence since February 2012.

In response to EPA's recent question, Powertech further commits to remove the piping connection from well 16 to the seasonal residence, which is currently only inhabited sporadically as a hunting lodge. Powertech will provide a cistern at the house in order to supply all domestic uses and supply water by hauling drinking water to this cistern as needed. This will ensure that well 16 will only be used for stock water purposes. Prior to operating each well field, all stock wells within ¼ mile of the well field will be removed from private use (see p. 4-15 of the revised Class III UIC permit application). Please also refer to Section 4.11 of the revised Class III UIC permit application, which states that all domestic wells, including well 16, will be removed from private use prior to operation. Powertech will notify EPA when each of the modifications is complete.

Following disconnection, Powertech will further submit paperwork to have the well reclassified as per South Dakota regulations to "stock" use only. Powertech will inform EPA of the submittal and its completion.

A response from EPA indicating whether the commitments herein meet staff's requirements for issuing draft Class III and V UIC permits would be appreciated.

Sincerely,

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cc: Ronald Burrows, NRC
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