ATTACHMENT 3

**From:** Yilma, Haimanot
**Sent:** Thursday, September 30, 2010 3:17 PM
**To:** Richard Blubaugh
**Cc:** DeweyBurdHrgFile Resource; Yilma, Haimanot
**Subject:** RAI Clarifications for RAI-WR2 (2).docx
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Mr. Blubaugh

Here are the questions we would like clarification for per our conversation last Friday. Please let me know if you have any questions or concerns.

Haimanot

As part of its response to RAI-WR2, PowerTech (USA) Inc. provided electronic and hard copies of an updated isopach map of the Fuson member of the Lakota Formation (Supplemental Exhibit 3.2-3 - Revised). Included in the electronic files are four versions of the isopach map. These electronic files were labeled as:

(i) Exhibit 3.2-3 Fuson Isopach (R644).pdf,
(ii) Exhibit 3.2-3 Fuson Isopach (R645).pdf,
(iii) Exhibit 3.2-3 Fuson Isopach (R646).pdf,
(iv) R641_Fuson Isopach Exhibit 3.2-3.pdf.

Versions R644, R645, and R646 appear to be similar to each other while version R641 appears to be substantially different from the other three files. The hard copy of the isopach map appears to be equivalent to the file "Exhibit 3.2-3 Fuson Isopach (R646).pdf" within the RAI response folder. Staff requires clarification of several aspects of the isopach maps provided and has a request for additional information.

1. The isopach map shown in "R641_Fuson Isopach Exhibit 3.2-3.pdf" contains a greater number of TVA borehole locations/data (shown as black dots) than the isopach map shown in "Exhibit 3.2-3 Fuson Isopach (R646).pdf".

   a) What is the basis for omitting or deleting the TVA borehole locations (shown on R641_Fuson Isopach Exhibit 3.2-3.pdf) from "Exhibit 3.2-3 Fuson Isopach (R646).pdf"?
   b) Both the TVA and the more recent PowerTech (USA) Inc. data appear to be important in constraining the interpretation of contour lines on the isopach maps. How can versions R641 and R646 have such similar contours given the missing TVA borehole data in version R646?
   c) The 40 ft- contour in Section 3, T7S, R1E (the northwest portion of the Initial Burdock Unit 1) is closed in "Exhibit 3.2-3 Fuson Isopach (R646).pdf", whereas the same contour was left open in "R641_Fuson Isopach Exhibit 3.2-3.pdf". Which interpretation is correct, and what is the basis for the difference between the two maps?
   d) It is not clear why the applicant has omitted from version R646 several boreholes located in the southwest quadrant of Section 2 (T7S, R1E) and southeast quadrant of Section 3 (T7S, R1E). These boreholes are shown in R641 and appear to be in an area where there is large uncertainty in the thickness of the Fuson member. What is the basis for omitting these data?

2. Given that (i) the applicant has noted that the Fuson shale is thinnest in the Burdock area, (ii) there is a higher uncertainty in the thickness of the Fuson shale to the immediate north of the Initial Burdock Mine Unit, (iii) there is convergence of the potentiometric surface of the Fall River and Lakota aquifers in the Burdock area, and (iv) pump tests have indicated the potentially leaky nature of the Fuson shale in the Burdock area, it is important that staff develop a clear independent understanding of the thickness and extent of the Fuson shale in this region to adequately evaluate the potential environmental impacts from ISR activities.

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Therefore, staff requests that the applicant provide the data used to construct isopach maps of the Fuson shale in the Burdock area (the Burdock area includes Sections 1, 2, 3, 10, 11, 12, 14, and 15 of T7S,

R1E, and Sections 34 and 35 of T6S, R1E). The data should include that from TVA and PowerTech (USA) Inc. boreholes and any other data PowerTech (USA) Inc. has used to construct isopachs for the Fuson shale in Supplemental Exhibit 3.2-3 – Revised (all versions) and Supplemental Exhibit 3.2-13. An appropriate format for the requested data would include borehole identification numbers, location of boreholes, and the thickness of the Fuson Shale at the designated borehole location.