

December 9, 2014

UNITED STATES OF AMERICA
NUCLEAR REGULATORY COMMISSION

BEFORE THE ATOMIC SAFETY AND LICENSING BOARD

In the Matter of)	
)	
POWERTECH (USA) INC.,)	Docket No. 40-9075-MLA
)	ASLBP No. 10-898-02-MLA-BD01
(Dewey-Burdock In Situ Uranium Recovery)	
Facility))	

NRC STAFF'S BRIEF IN SUPPORT OF ANSWERING TESTIMONY

INTRODUCTION

The NRC Staff responds to the Oglala Sioux Tribe's Motion to Admit Supplemental Testimony from Dr. Hannan LaGarry. Dr. LaGarry's supplemental testimony (Ex. OST-029) and supporting exhibits (Exs. OST-030 through OST-041) concern the testimony that the NRC Staff submitted on October 14, 2014. In that testimony (Ex. NRC-174), the Staff explained how it reviewed the well log data that Powertech disclosed to the parties on September 13, 2014, as well as the conclusions it reached. Dr. LaGarry challenges the methodology the Staff used to conduct its review, along with the Staff's conclusions.

The Staff does not oppose the Tribe's motion to admit Dr. LaGarry's supplemental testimony and supporting exhibits into evidence. As the Staff explains in its attached testimony, however, Dr. LaGarry fails to call into question the conclusions in the Final Supplemental Environmental Impact Statement (FSEIS) that the Staff prepared for the Dewey-Burdock Project. In particular, Dr. LaGarry's testimony fails to support the Tribe's arguments in Contention 3, which alleges that the Staff insufficiently analyzed the hydrogeology in the Dewey-Burdock area.

DISCUSSION

To answer Dr. LaGarry's testimony, the Staff is submitting testimony from Jim Prikryl and Thomas Lancaster, two experts who have previously testified several times in this hearing. Both

Mr. Prikryl and Mr. Lancaster were involved in reviewing the well log data that Powertech disclosed on September 13, 2014. Below, the Staff summarizes the key points Mr. Prikryl and Mr. Lancaster make in their attached testimony (Ex. NRC-175).

I. The Staff Reviewed Powertech’s Well Log Data Far More Extensively than the Tribe Acknowledges

Dr. LaGarry suggests that the Staff’s review of Powertech’s well log data consisted of no more than a “spot check” of the data Powertech disclosed on September 13, 2014 (Ex. OST-029 at 4–5). In fact, the Staff’s review was far more extensive, with two main components.

First, the Staff extensively reviewed the well log data Powertech submitted with its application, including the data Powertech submitted in response to the Staff’s requests for additional information. As part of its review, the Staff closely evaluated the structure and isopach maps Powertech presented in its revised Technical Report. Ex. NRC-175 at A23; see *also* Hearing Transcript at 942–947 (testimony of Mr. Prikryl discussing the Staff’s review of well log data incorporated in Powertech’s application). The Staff focused on these maps in order to assess the environmental impacts that site-specific geologic and hydrologic features could have on groundwater resources. *Id.* As the Staff explains in its testimony, Powertech constructed the structure and isopach maps in its revised Technical Report using information from over 1,800 well logs. *Id.* Accordingly, when preparing the FSEIS the Staff carefully considered what the well log data available at that time showed regarding the potential environmental impacts of the Dewey-Burdock Project.

Second, the Staff conducted a focused review of the newly acquired well log data that Powertech disclosed on September 13, 2014. The Staff first compared the digitized borehole logs on the DVD that Powertech provided to all parties with the locations listed in Appendix 2.6-A of Powertech’s Technical Report. Ex. NRC-175 at A24. The Staff then conducted an onsite review of well logs at Powertech’s headquarters in Edgemont in order to evaluate the validity of the structure and isopach maps presented in its revised Technical Report. *Id.* As the Staff explains in its testimony, during its review it focused on specific statements Powertech made in support of its

application, as well as specific claims the Intervenor's experts made in support of Contention 3. *Id.* at A24, A27. For example, the Staff looked at whether there was evidence of significant displacement or thickness variations that could confirm the presence of faulting or fracturing of the Fuson Shale. *Id.* The Staff also reviewed logs to help evaluate claims that Dr. LaGarry and Dr. Moran had made concerning secondary porosity, breccia pipes, and sinkholes. *Id.* at A24; Ex. NRC-158 at A9, A10.

In brief, the Staff took a hard look at Powertech's well log data. The Staff reviewed Powertech's Technical Report extensively when preparing the FSEIS. When new well log data became available eight months after the Staff issued the FSEIS, the Staff's experts conducted a focused review of the data to test the conclusions in the FSEIS and the claims made by the Intervenor's experts. The Staff's approach complied fully with the requirements of the National Environmental Policy Act (NEPA) and the NRC's NEPA-implementing regulations.

II. The Staff's Review Focused on the Best Available Information Regarding Site Stratigraphy

The Staff and Dr. LaGarry took different approaches to reviewing the well log data that Powertech disclosed on September 13, 2014. The Staff focused its review on the borehole geophysical logs—the gamma and resistivity logs—that were relevant to evaluating the claims made by the Intervenor in Contention 3. Ex. NRC-175 at A24, A27. As the Staff explains in its testimony, these geophysical logs provide quantitative information about subsurface geology that can be used by geologists and hydrologists to map geologic units. *Id.* at A8. These logs are generated using calibrated instruments that provide reliable information on subsurface stratigraphy, such as the location of formation contacts and formation thicknesses. *Id.*

Dr. LaGarry and his assistants, on the other hand, focused their review not on the geophysical logs, but on the drillers' notes accompanying the logs. Ex. OST-029 at 2. As the Staff explains, however, drillers' notes cannot be relied upon to evaluate structural features such as faults and fractures. Ex. NRC-175 at A7. This is in part because drillers' notes are typically recorded by the driller himself, rather than by a trained geologist. *Id.* In addition, the quality of

drillers' notes varies depending on the drillers' knowledge of the local subsurface geology, the quality of the cuttings, and the driller's experience in interpretation. *Id.*

During the August 19–21, 2014 oral hearing, the Intervenor's experts stressed the importance of reviewing Powertech's recently acquired geophysical logs, making no mention of drillers' notes. Hearing Transcript at 940–942, 1069, 1075. Furthermore, in his declaration accompanying the Tribe's October 9, 2014 motion for an extension of time to submit testimony on the well logs, Dr. LaGarry again emphasized the importance of geophysical logs. See Declaration at 2 ¶ 9 (stating that a review of the geophysical logs “may provide a sufficient number of data points for me to create stratigraphic cross-sections and geologic maps that support the Oglala Sioux Tribe and Consolidated Intervenor's position that there is a lack of adequate confinement”). Accordingly, the statements of the Intervenor's own experts support the Staff's decision to focus its review on the geophysical logs Powertech made available on September 13, 2014.

III. The Drillers' Notes upon which Dr. LaGarry Relies Provide Minimal Support for the Tribe's Position

Even if drillers' notes were a reliable guide to structural features such as faults and fractures, the particular notes submitted by the Tribe as exhibits provide minimal support for their position. Dr. LaGarry cites drillers' notes referring to open boreholes and artesian flow in the Dewey-Burdock area. Ex. OST-029 at 3. The Staff was fully aware of these issues when it prepared the FSEIS, however, and it considered them when assessing the environmental impacts of the Dewey-Burdock Project. Ex. NRC-175 at A10 through A15. The Staff also considered issues such as open boreholes and artesian flow when developing Powertech's license conditions and other mitigation measures. *Id.*

Dr. LaGarry also points to certain drillers' notes as evidence of faulting or fractures in the Dewey-Burdock area. Ex. OST-029 at 3. As the Staff explains, however, these notes are not strong evidence that such features exist. Ex. NRC-175 at A16, A17. In some of the drillers' notes cited by Dr. LaGarry, there is a question mark after the word “fault” or “fault-

fracture”; in another note, the word “probable” precedes the word “fault.” *Id.* at A16. Although Dr. LaGarry interprets the statement “very broken up and caving” in another drillers’ note as evidence of faulting, the note more likely refers to disruption of sandstone units during drilling. *Id.* Furthermore, while Dr. LaGarry interprets references to “offsets” or “displacements” in three drillers’ notes as evidence of faulting, the notes provide no other information concerning the possible offsets or displacements, nor do they mention the geologic formations affected by these features. *Id.*

In sum, even if the drillers’ notes could be considered a reliable guide to structural features in the Dewey-Burdock area, they would provide minimal support for the Tribe’s arguments in Contention 3.

CONCLUSION

Dr. LaGarry’s November 21, 2014 supplemental testimony fails to support the Tribe’s position that there is a lack of hydrological confinement in the Dewey-Burdock area. Accordingly, his testimony fails to support the Tribe’s arguments in Contention 3.

Respectfully submitted,

*/Signed (electronically) by/
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Dated at Rockville, Maryland
this 9th day of December 2014

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CERTIFICATE OF SERVICE

Pursuant to 10 C.F.R. § 2.305, I certify that counsel for the NRC Staff served copies of the “NRC Staff’s Brief in Support of Answering Testimony,” “NRC Staff’s Answering Testimony,” and the “Staff’s Revised Exhibit List,” via the NRC’s Electronic Information Exchange (EIE) on December 9, 2014. Counsel for the Staff served those representatives exempted from filing through the EIE with copies of its motion by electronic mail, also on December 9, 2014.

***/Signed (electronically) by/
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