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STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY

3100 Port of Benton Blvd • Richland, WA 99354 • (509) 372-7950

July 10, 2009
Reissue

Mr. Briant L. Charboneau
Richland Operations Office
United States Department of Energy
P.O. Box 550, MSIN: A6-33
Richland, Washington 99352

Re: "Aquifer Tube" Data Validation Expectations

Dear Mr. Charboneau:

This letter communicates the Department of Ecology's (Ecology) data quality expectations associated with "aquifer tubes," which could be used to meet compliance requirements for the new target milestone for river protection.

Ecology commends the United States Department of Energy (USDOE) for developing the "aquifer tube" design and maintaining the monitoring program extensively used along the Columbia River. Aquifer-tube well design and construction has evolved. Currently, aquifer-tube wells are intended to provide permanent resource protection well sampling ports. To date, there are several hundred aquifer-tube wells installed along the Hanford shoreline. Ecology acknowledges that aquifer-tube wells provide useful and important data and requests continuation of the program into the future.

Recently, tentative agreements on milestone changes (*Tentative Agreement on Hanford Federal Facility Agreement and Consent Order Modifications Regarding Accelerated Groundwater and Soils Milestones/FY2009 Funding/Waste Management/K Basins and Other Issue Solutions*, February 2009) were completed. M-016-110-T01 includes achievement of ambient water quality standards for hexavalent chromium in the hyporheic zone.

We believe that a large amount of technically defensible data can be obtained from properly constructed aquifer-tube wells with adequate quality assurance, quality control, and data validation procedures. These data could be used to meet compliance and cleanup goals. In this context, it is important to verify that the water sampled from the aquifer-tube wells is representative of the target horizon and is not affected by mixing with other systems from elsewhere along the apparatus. Ecology has previously raised questions regarding the effects on contaminant concentrations from aquifer-tube wells (see our general comments on *Hanford Site Groundwater Monitoring for Fiscal Year 2008*).

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To ensure that data quality objectives are achieved, Ecology requests that USDOE implement recommendations made by the technical review panel, which convened April 16 - 18, 2008, to discuss groundwater-surface water interactions.

The panel recommended the evaluation of conceptual models and data collection methodologies associated with the analysis of groundwater-surface water interactions. Their report (Section 3.2, *Technical Evaluation of the Interaction of Groundwater with the Columbia River at the Department of Energy Hanford Site, 100-D Area, SGW-39305*), identifies needs and recommendations for evaluating the construction of aquifer-tube wells and the data obtained there from, in order to support any use of aquifer-tube well data for compliance and remediation purposes. The panel's recommendations include integrity testing of aquifer tube installations to determine if samples are impacted by river water infiltration and additional evaluation of the application of specific conductance to imply mixing.

Ecology expects USDOE to take actions to implement the panel's recommendations for any aquifer-tube well data that USDOE intends to use in any way to support compliance or remediation decisions.

If there are any questions, contact me at 509-372-7972.

Sincerely,



Cheryl Whalen
Cleanup Section Manager
Nuclear Waste Program

js/jc

cc: Dennis Faulk, EPA
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Mark French, USDOE
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Mike Thompson, USDOE
Stuart Harris, CTUIR
Gabriel Bohnee, NPT
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Administrative Record: H011 -- Groundwater Vadose Zone
Environmental Portal
Hanford Operating Record General File
USDOE-RL Correspondence Control