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DEC 6 1999

Mr. Patrick Sobotta
Nez Perce Tribe
P.O. Box 365
Lapwai, Idaho 83540-0365

Dear Mr. Sobotta:

SITEWIDE GROUNDWATER/VADOSE ZONE INTEGRATION PROJECT

In response to your letter dated July 21, 1999, regarding the "Sitewide Groundwater/ Vadose Zone Integration Project." The U.S. Department of Energy, Richland Operations Office (RL), and the Groundwater Vadose Zone Integration Project share your commitment to protect the Columbia River and all of its users and uses. RL appreciates the cooperative approach you take to provide input and advice. 51562

It was decided to wait until the detailed work planning for Fiscal Year (FY) 2000 was complete before responding to your letter. The recommendations you presented were evaluated and considered as the Integration Project workplans were prepared.

The Integration Project has given near-term priority to sitewide geologic modeling, system assessment capability development, characterization of systems, and science and technology development. As the Integration Project matures, it is expected that emphasis will shift to additional characterization and monitoring.

RL agrees on the importance of a Sitewide geologic model to serve as the basis for Hanford characterization activities and vadose zone and groundwater modeling. The development of a single geologic model will contribute greatly to the integration of these activities.

As mentioned in your letter, considerable work has been done to document the geology of the Hanford Site. This work will provide the basis for the Characterization of Systems activities to be initiated in FY 2000. Site geologic information will be assembled into a single configuration controlled database and a geologic conceptual model for the site will be developed to serve as the basis for all future work.

In your letter, you recommend that the laterals under the tanks be geophysically logged and that the logging would serve as the basis for many decisions and uses.

RL agrees that the geophysical logging information from laterals underneath some of the A and SX tanks could be quite valuable. Gamma-ray detectors were regularly deployed in these laterals for a number of years. The information has already been used in planing our characterization efforts and in estimating the extent of plumes.

However, four important steps should be completed prior to investing in additional geologic logging.

- Completion of the analysis of the existing lateral data, particularly in conjunction with the existing drywell data.
- A worker health and safety study must be prepared to determine the impact of deploying detectors in the laterals.
- An engineering study must be prepared to determine whether such logging can physically occur and what restrictions on instrumentation are imposed by environmental conditions.
- A cost analysis must be completed.

Only a small amount of the existing lateral geophysical data has been analyzed. Unlike the drywell geophysical data, the lateral data were not recorded electronically in an easily recoverable format. Therefore, the analysis of the existing data has not yet been completed. Previous experience analyzing such data indicates that these data should be combined with the similar data taken from the nearby drywells to obtain a more complete understanding.

To access the lateral holes underneath the tanks, workers must use caissons located near the tanks. These caissons are classified as underground, confined spaced structures. Hence, there are many restrictions on worker access and use. Moreover, some of the caissons are thought to be both thermally (temperatures above 120 °F) and radiologically (doses above 1 rem/hour) "hot." Therefore, a worker health and safety study must be conducted before the caissons are used. Such a study will be performed in the next six months.

An engineering study is required to determine the engineering feasibility of actually logging the existing lateral holes. One of the reasons that lateral geophysical logging was discontinued was that the lateral holes were starting to collapse. Moreover, the lateral holes have curvatures that forbid use of the current standard instrument strings.

In view of the limitations, spectral gamma logging is being conducted on a limited basis where the data provides information as part of a broader investigation.

If you have any questions, please contact me at (509)373-9626.

Sincerely,

R. Douglas Hildebrand, Project Manager
Groundwater/Vadose Zone

GWVZ:RDH

cc: M. J. Graham, BHI