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October 26, 2004

Mr.William Taylor
Ohio Field Office
Fernald Closure Project
175 Tri-County Parkway
Springdale, Ohio 45246

RE: COMMENTS - TRANSMITTAL OF RESPONSES TO THE OHIO ENVIRONMENTAL PROTECTION AGENCY COMMENTS ON THE 2003 SITE ENVIRONMENTAL REPORT

Dear Mr. Taylor:

Ohio EPA has reviewed the Transmittal of Responses to the Ohio Environmental Protection Agency Comments on the 2003 Site Environmental Report submitted by DOE on October 6, 2004. Ohio EPA's comment's on DOE's responses are enclosed.

If there are any questions, please contact me at (937) 285-6466 or Donna Bohannon at (937) 285-6543.

Sincerely,

Donna Bohannon for

Thomas A. Schneider
Fernald Project Manager
Office of Federal Facilities Oversight

cc: Jim Saric U.S. EPA
Michelle Cullerton, Tetratech
Ruth Vandegrift, ODH
Mark Schupe, HSI Geotrans

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2003 Site Environmental Report

Comments:

1. Commenting Organization: Ohio EPA Commentor: GeoTrans, Inc.
Section: Attachment A.5 Pg#: A.5-5 Line#: 32 Code: C
Original Comment# 4
Comment: The common ion data are not proposed to be used directly for leak detection. The common ion data are proposed to assess groundwater aging beneath each waste cell and to assist in establishing an effective statistical protocol for leak detection analysis. Specifically, the objective of monitoring common ions in the HTWs (both pre and post baselines) is twofold. First, the results will serve as verification that "aging water" processes are truly active at the site and are a valid explanation for the observed trends in site constituent concentrations. Second, the observed trends in the common ions will assist in delineating when aging effects have dissipated and data collection for background characterization can proceed. The presence of the 11 suggested parameters (magnesium, manganese, potassium, iron, chloride, sulfate, phosphate, alkalinity, and pH) in OSDF fill materials does not preclude their use in the groundwater aging assessment. Similarly, the rate at which an ion's concentration is affected by groundwater aging and the ion's background concentration relative to its leachate concentration do not preclude its use to assess groundwater aging. What is important is that the ions are ubiquitous in background groundwater and are in significant concentrations before the given cell is constructed. The common ions satisfy both conditions. The data should be used to establish before-construction concentration levels. Given that the other leak detection information (flow rates, etc.) indicates that no leak is occurring, the common ion data would be used for assessment of any post-construction concentration trends and determination of final equilibrium concentrations. Once all parameters achieve stability, baseline statistical parameters for each leak detection constituent can then be estimated and control limits reliably calculated. The drawback to relying solely on uranium for aging assessment is that uranium concentrations in the leachate are significantly greater than background concentrations in the till. Consequently, although till uranium concentrations are certainly affected by aging, the possibility of a system leak complicates interpretation of the uranium data in the till.

2. Commenting Organization: Ohio EPA Commentor: GeoTrans, Inc.
Section: Attachment A.5 Pg#: A.5-7 Line#: 1 Code: C
Original Comment# 7
Comment: DOE notes in the comment response that flow information must always be factored into the overall leak detection evaluation process. The hypothetical leak simulation provided in the comment response indicates that a worst case leakage

rate will result in a very small impact to the down gradient GMA monitoring wells after 10 years. Although the LCS and LDS flow data are useful for assisting with overall interpretation in the short term, the bottom line critical measures for leak detection are the concentrations of leachate constituents in till and GMA groundwater down gradient from the OSDF. Should a leak occur, its flow rate will most likely be very small, certainly less than the rate used in the hypothetical scenario. However, a properly formulated, statistically appropriate data analysis strategy, such as control charts, will detect an active source, whatever its strength. Once DOE can demonstrate that the effects of groundwater aging have diminished and that statistically defensible baseline parameters have been determined for each monitored constituent, the control limits for each constituent must be revised and control charts (or a similarly rigorous statistical method) must then be the primary leak detection tool. In the interim period, when arbitrarily specified control limits are in use (such as 75 percent of the FRL), greater weight can be given to LCS and LDS flow data during leak detection data analysis. Over the long term, however, when the final statistical methodology is operational, the flow data significance becomes diminished as the time for activity of a potential leak increases. DOE's hypothetical scenario lasted only 10 years, a far shorter time with respect to the planned service life of the OSDF.

3. Commenting Organization: Ohio EPA Commentor: GeoTrans, Inc.
Section: Attachment A.5 Pg#: A.5-9 Line#: 33 Code: C
Original Comment# 17
Comment: The original comment indicated that a leak detection issue may exist for total organic halogens at Cell 1. DOE's response states that the current control limits are not appropriate because groundwater aging processes have interfered with the establishment of a stable baseline data set. The total organic halogen's analysis provides a cumulative concentration for all halogenated organic compounds, both those that are potentially naturally occurring (humic and fulvic acids) and those that originate from contamination. Groundwater aging could explain any increases seen in the natural compounds but not for compounds such as organic solvents, PCBs, etc. To enable correct interpretation of the TOX data, DOE should perform a follow up VOC scan to verify the conclusion that the current control limits are inappropriate and that any upward TOX trends observed result from groundwater aging.