



**Department of Energy**  
Richland Operations Office  
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AUG 03 2012

12-HAB-0029

Ms. S. L. Leckband, Chair  
Hanford Advisory Board  
Enviroissues Hanford Project Office  
713 Jadwin, Suite 4  
Richland, Washington 99352

Dear Ms. Leckband:

HANFORD ADVISORY BOARD (HAB) JUNE 8, 2012, CONSENSUS ADVICE #257,  
"300 AREA RI/FS AND PROPOSED PLAN"

Thank you for advice #257 on the 300 Area Remedial Investigation/Feasibility Study (RI/FS) and Proposed Plan (enclosure). The U.S. Department of Energy (DOE) appreciates the opportunity to discuss these draft documents with the River and Plateau committee members and hear their issues and suggestions. We recognize the time HAB members dedicated to reviewing and providing advice on these large complex documents.

Below are the responses to the points in your advice:

**Advice Point #1:** The Board advises the TPA agencies to modify the milestone schedule for the 300 Area RI/FS decision to proceed with poly-phosphate sequestration as an Interim Remedial Measure/ Expedited Response Action, until such time that this phosphate sequestration or some other technology can be tested and proven to be effective before proceeding to writing the final ROD and Proposed Plan.

**Response:** DOE committed to submitting a proposed plan supporting a record of decision for the 300 Area (M-015-72-T01, December 2011) in support of Tri-Party Agreement (TPA) Milestone M-015-00D to complete the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) RI/FS process for the 100/300 Areas by December 2012. DOE recognizes there are significant technical challenges in the development and implementation of a strategy to protect and restore the aquifer impacted by the residual uranium, primarily residing in the periodically rewetted zone (PRZ). A "phased approach" for implementation, consistent with the Office of Solid Waste and Emergency Response Guidance (EPA 540-R-98-031) is proposed to address these uncertainties and determine whether the technology is viable at a field scale application.

**Advice Point #2:** In the event the poly-phosphate sequestration technology testing is shown to be unsuccessful, the Board does not support monitored natural attenuation (MNA) as a solution. The Board advises the TPA agencies to consider the HAB's longstanding commitment to RTD values, especially to remove contaminants from near the river, when the next alternative selection is being made.

**Response:** DOE finds it difficult to support a decision to remove the residual uranium from the 300 Area that occurs in the deep vadose zone and the PRZ. The National Contingency Plan provides guidance for meeting or waiving “applicable or relevant and appropriate requirements” (300.430(f)(1)(ii)(C)(2)) in cases where compliance with requirements will result in greater risk to human health and the environment than other alternatives. In the past, the HAB also endorsed the concept of “do no harm.” Remove, Treat, and Dispose (RTD) is simply not realistic considering the harm caused from the large volume of soil that needs to be removed, the unintended consequences of additional uranium release to the river and the volume of backfill that would be required for reclamation. The feasibility study evaluation determined that sequestration of uranium in-situ with phosphates is the only potentially viable active remediation technology. Through interim actions 281,000 cubic yards of uranium-contaminated soils have been excavated from the liquid waste disposal facilities, costing approximately \$25,000,000. An additional investment of approximately \$72,000,000 will be expended to excavate and remove the pipelines that carried the uranium-bearing waste water to these facilities. Large-scale excavation-based technologies that would be utilized for removing the residual uranium from the 300 Area will have adverse unintended consequences, potentially releasing more uranium to the river than the no action alternative. To be effective, the remedial alternative must focus on uranium in the PRZ. Excavation technologies require dust control. Dust control will release uranium to the underlying groundwater as evidenced in the excavation of the 618-7 Burial Ground where a significant new uranium plume was created by excavation-based remediation. The scope of excavation is enormous and the cost prohibitive, in excess of \$1,000,000,000. In-Situ sequestration meets CERCLA goals of treating the waste and is a “green technology” compared to RTD technologies. Excavation and subsequent backfill of the uranium source in the vadose zone and PRZ is estimated to be 11,000,000 cubic yards of soil to be removed requiring approximately 53,000,000 miles of truck haulage, will burn 28,432,000 gallons of diesel fuel, and generate 367,000 tons of CO<sub>2</sub> and 3,000 tons of NO<sub>x</sub>.

**Advice Point #3:** The Board advises the TPA agencies to develop future RI/FS documents that adequately reflect a comprehensive risk assessment (following the CERCLA process) and that address cleanup levels based on Model Toxics Control Act (MTCA) Method B, or Safe Drinking Water Act maximum contaminant levels. The Board advises the TPA agencies that cleanup plans should be developed assuming reasonably foreseeable future scenario exposures for people other than industrial workers and on contaminants of concern to which people, flora, and fauna are or may be exposed because of contact with Hanford groundwater and riparian habitat.

**Response:** DOE completed risk assessments in accordance with CERCLA. The Model Toxics Control Act is appropriately considered in the CERCLA Applicable or Relevant and Appropriate Requirements selection process. Only a small portion of the 300 Area, the currently heavily industrialized core zone and 618-11, are proposed to have cleanup levels protective of industrial uses. The majority of the 300 Area will reflect cleanup levels consistent with the 100 Area.

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**Advice Point #4:** The Board advises the TPA agencies to finalize RI/FS documents, including all supporting documents, prior to the development of any Proposed Plan.

**Response:** Relative to the 300 Area documents, the supporting documents for the 300 Area proposed plan and RI/FS report are final except for the Columbia River Component Human Health Risk Assessment, which should be final prior to signing the 300 Area Proposed Plan. The documents are completed in accordance with approval procedures under the TPA.

**Advice Point #5:** The Board advises the TPA agencies to work to present RI/FS and supporting document information, including the data and details which support decisions, in a manner that is easy to read, concise, transparent, and readily accessible within the decision document.

**Response:** The proposed plan and supporting RI/FS report are written in compliance with applicable guidance. The size and complexity of the documents are commensurate with the size and complexity of the scope to be addressed and available pertinent information.

Thank you for your continued interest and involvement in Hanford cleanup work. If you have any questions, please contact me or Tiffany Nguyen at (509) 376-3361.

Sincerely,



Matt McCormick  
Manager

HAB:TLN

Enclosure

cc w/encl: See page 4



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