U.S. DEPARTMENT OF ENERGY

15-HAB-0002

NOV 25 2014

Mr. S. E. Hudson, Chair
Hanford Advisory Board
Enviroissues Hanford Project Office
713 Jadwin, Suite 4
Richland, Washington 99352

Dear Mr. Hudson:

HANFORD ADVISORY BOARD (HAB) SEPTEMBER 5, 2014, CONSENSUS ADVICE #280, "REMEDIAL INVESTIGATION/FEASIBILITY STUDY AND PROPOSED PLAN FOR THE 100-FR-1, 100-FR-2, 100-FR-3, 100-IU-2 AND 100-IU-6 OPERABLE UNITS; DOE/RL-2012-41, REV 0"

Thank you for advice #280 on the subject documents. The U.S. Department of Energy (DOE) and U.S Environmental Protection Agency (EPA) appreciate the HAB's input on the cleanup work at Hanford. The record of decision (ROD) for these units was finalized by DOE and EPA on September 30, 2014. The ROD includes a responsiveness summary that addresses comments received during the public comment period including the Hanford Advisory Board (HAB) letter dated June 5, 2014, that requested that HAB advice #268 be considered as a public comment. Since HAB advice #280 was received after the public comment period ended, specific responses to HAB advice points from that advice are provided below. The responsiveness summary addressed many of the advice points from #280 so they are included in the responses below. The responses below also include any new advice points that were made as part of #280.

Advice Point #1: The Board advises the TPA agencies to take remedial action as appropriate to significantly reduce the time for cleanup goals to be attained. The Board advises that the periods proposed for the use of ICs in the 100-F Proposed Plan (Rev. 0) are far too long, therefore the currently proposed MNA is not acceptable for 100-F.

Response: The Tri-Party Agreement (TPA) agencies understand there is concern over the ability to maintain control of the Hanford Site and associated institutional controls (IC) far into the future. However, after cleanup decisions are made, Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) requires those decisions with contamination left in place, be reviewed no less often than every five years to ensure that human health and the environment are being protected by the remedial action. This frequent review cycle will help ensure that appropriate ICs remain in place and have not failed. If an IC

has failed, or in any way a remedy is found to be not protective, then additional evaluations and changes to the remedy would be considered.

The residential scenarios used to establish the cleanup levels for radiological and nonradiological analytes include potential exposure to the top 4.6 m (15 feet) of soil as part of the reasonable maximum exposure scenario. This represents a conservative estimate of the depth of soil that could be excavated and distributed at the soil surface as a result of residential site development activities (e.g. residential basement excavation). Direct human contact with deep soils is not expected and was not considered as part of the reasonable maximum exposure. ICs are included as a conservative measure to control the potential but unexpected circumstances where excavation or drilling might bring these contaminants to the surface.

DOE has established a Hanford Site-Wide long-term stewardship program to implement, maintain, enforce, and monitor ICs that requires EPA approval and will be compliant with the requirements of the ROD. Although the DOE may later transfer these procedural responsibilities to another party by contract, property transfer agreement, or through other means, the Federal Government shall retain ultimate responsibility for remedy integrity. In the event that land is transferred out of federal ownership, deed restrictions or other controls (e.g. proprietary controls such as easements and covenants) are required that are legally enforceable against subsequent property owners. DOE anticipates that the Hanford Site will remain under federal ownership for the foreseeable future.

Advice Point #2: The Board advises the TPA agencies to reconsider the relative value of removing contaminants when evaluating the balancing criteria for the Proposed Plan alternatives, as described in the background.

Response: DOE and EPA believe the evaluation of the balancing criteria for this decision was appropriate. The selected remedy for groundwater (Alternative GW- 2) uses monitored natural attenuation processes including biodegradation and abiotic degradation, radioactive decay, dispersion, volatilization, and sorption to effectively reduce groundwater contaminants of concern to concentrations less than the cleanup levels for the 100 FR-3 OU. Alternatives GW-2, GW-3, and GW-4 are each protective of human health and the environment. Currently, 100-FR-3 groundwater is not used as drinking water, and ICs implemented as part of the ROD will prevent use as drinking water until cleanup levels are met. Although Alternatives GW-3 and GW-4 include pump-and-treat technology to achieve cleanup levels sooner for Cr(VI), nitrate, and TCE, the time frames for each of these three groundwater alternatives to achieve the cleanup level for strontium-90 is 150 years, meaning ICs on groundwater use are required for the same amount of time in all groundwater alternatives. Pump and treat is not effective for remediating strontium-90 contaminated groundwater because most of the strontium-90 binds to the soil, so it is not effectively removed by extracting groundwater. Alternatives GW-2, GW-3, and GW-4 are also equal in long term effectiveness and permanence once cleanup levels are achieved. Alternative GW-2 has a lower potential for adverse impact to the community, workers, or the environment because there is less construction-related activity in comparison to Alternatives GW-3 and GW-4 and has the lowest cost.

Advice Point #3: The Board advises the TPA agencies to perform additional RTD at waste site 118-F-8:3 to reduce the lengthy duration of ICs at 100-F.

Response: The 118-F:3 site has soil contamination deeper than 15 feet below the ground surface and it is determined that contamination this deep does not result in an exposure pathway for humans through direct contact with the soil and it is not considered part of the reasonable maximum exposure scenario. Additionally, the contamination at this site does not exceed soil groundwater protection cleanup levels established by the 100-F/IU record of decision, meaning it will not adversely affect groundwater. Based on this information, the site does not pose an unacceptable risk to human health or the environment. Institutional controls will be used as a conservative measure to control drilling and excavation activities. The ICs will prevent the soil at the waste site from being disturbed and therefore prevent potential human exposure to contamination.

Advice Point #4: The Board advises that the RI/FS and Proposed Plan and future documentation should discuss the indicators of failures of MNA and define triggers to require future detailed evaluation during the CERCLA five-year reviews. Especially with a need for ICs to be maintained over 264 years, the consequences of events (500 year flood, probably maximum flood and catastrophic failure of Grand Coulee Dam), should also be considered.

Response: The Remedial Design/Remedial Action Workplan (RD/RAWP) for implementing this decision will address how performance monitoring will be conducted that will supply data that can be used in the five year reviews. This plan will also address how ultimately it will be determined when remediation objectives have been achieved. The sampling and analysis plan associated with this workplan will describe how existing and new monitoring capabilities will be used to collect data to monitor the progress of the natural attenuation. If the weight of evidence from evaluation of the data in the five year reviews indicates that natural attenuation is not protective, then alternatives would be reevaluated.

CERCLA evaluation requires evaluation of contaminants, exposure pathways, toxicity of exposures to the contaminants, and risk characterization(s). It does not require extensive analysis of demographic trends and statistically measureable confidence levels for prediction of future events. Consequently, evaluating catastrophic low probability events such as breaching of dams is not part of the CERCLA evaluation requirement. If selected remedies are not effective or not protective of human health and environment, the cleanup alternatives would be reevaluated.

Advice Point #5: The RI/FS and Proposed Plan should discuss the likelihood of failures of ICs over the hundreds of years proposed. The Board advises that the TPA agencies should describe the potential consequences in terms of the risk-based standards for the populations likely to be exposed should ICs fail or be terminated at different time frames.

Response: The Tri-Party agencies understand there is concern over the ability to maintain control of the Hanford Site far into the future. We acknowledge that there is uncertainty

associated with if/when ICs could potentially fail. However, after cleanup decisions are made, CERCLA requires those decisions with contamination left in place, be reviewed no less often than every five years to ensure that human health and the environment are being protected by the remedial action. If a remedy is found to be not protective, then additional evaluations and changes to the remedy would be considered.

Thank you again for your advice on this subject. If you have any questions, you may contact Kristen Skopeck at (509)-376-5803 or Chris Guzzetti of EPA at (509) 376-9529.

Doug S. Shoop, Acting Manager
U.S. Department of Energy
Richland Operations Office

Dennis Faulk
Hanford Project Office
U.S. Environmental Protection Agency

OCE:KPS

cc:
D. Borak, EM-3.2
D. A. Faulk, EPA
J. A. Frey, RL/ORP-DDFO
M. A. Gilbertson, EM-10
T. Gilley, Enviroissues
J. A. Hedges, Ecology
W. M. Levitan, EM-10
C. McCague, Enviroissues
M. McKenna, MSA
T. L. Sturdevant, Ecology
S. G. Van Camp, EM-23
M. Zhu, EM-11
Administrative Record
Environmental Portal

U.S. Senators (OR)
J. Merkley
R. Wyden

U.S. Senators (WA)
M. Cantwell
P. Murray

U.S. Representatives (WA)
R. Hastings
J. Herrera Beutler
D. Kilmer
R. Larsen
J. McDermott
C. McMorris Rodgers
D. Reichert
A. Smith

State Senators (WA)
S. Brown

State Representatives (WA)
L. Haler
B. Klippert