HANFORD ADVISORY BOARD

A Site Specific Advisory Board, Chartered under the Federal Advisory Committee Act

EnviroIssues
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September 15, 2016

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Dennis Faulk, Manager
U.S. Environmental Protection Agency, Region 10
825 Jadwin Ave., Suite 210 (A1-43)
Richland, WA 99352

Alex Smith, Manager
Washington State Department of Ecology
3100 Port of Benton Blvd.
Richland, WA 99354

Re: Proposed Plan for Remediation of the 100-DR-1, 100-DR-2, 100-HR-1, 100-HR-2, and 100-HR-3 Operable Units

Dear Messrs. Shoop and Faulk and Ms. Smith,

Background

A Proposed Plan for Remediation of the *100-DR-1, 100-DR-2, 100-HR-1, 100-HR-2, and 100-HR-3 Operable Units* (DOE/RL-2011-111, Rev 0) has been completed, including the preferred alternative proposed for remediation. The Hanford Advisory Board (Board) has previously provided advice to the draft Proposed Plan, and to the associated Remedial Investigation and Feasibility Study, and appropriate Tri-Party Agreement (TPA) agency responses were received. In addition, the Board appreciates the TPA agencies working in collaboration with the Board to create clear and understandable public information materials for this comment period.

The Board is generally supportive of the U.S. Department of Energy's (DOE) alternative analysis for the 100-D/H Areas, and agrees with the choice of Alternative 3 which includes removal, treatment and disposal (RTD) of the remaining chromium contaminated sites; capping of waste containing pipelines; and an enhanced pump-and-treatment remediation of groundwater with 80 new wells. The Board notes the

extra effort from the TPA agencies at 100-D/H in the “big digs,” particularly in the more contaminated D-area sites, in removing concentrated chromium spills from vadose zone sediments and in reducing the time it will take to pump-and-treat 100-D groundwater to an acceptable level. The proposed alternative is predicted to take 25 years to reduce chromium, 13 years for nitrate, and 44 years for reduction of strontium, to acceptable levels in ground water.

The Board emphasizes to the TPA agencies that the co-extracted contaminants be included as part of the groundwater alternatives analysis. A number of metals and other elements are contaminants of potential concern that have been detected above the 90th percentile Hanford Site background level, above risk-based maximum levels, or above maximum contaminant levels. As the Proposed Plan states “based on the results of the groundwater risk evaluation, nitrate, strontium-90, total chromium, and hexavalent chromium are present in groundwater at levels that pose unacceptable risk if no actions are taken.” The pump-and-treat alternatives are aimed solely at chromium reduction. The Board continues to be concerned that the co-extracted non-chromium contaminants examined in pump-and–treat alternatives of the Proposed Plan should be considered for removal and treatment before that water is reinjected. The Board restates its preference for treatment of the co-extracted non-chromium contaminants instead of dilution.

Given that strontium was reported to be above the maximum contaminant level goal (MCLG) in a number of detected unfiltered groundwater samples in the 100-H Area, the Board urges the TPA agencies to consider a more aggressive approach for strontium. There is no provisional fallback remediation plan provided in the Proposed Plan for strontium if Monitored Natural Attenuation (MNA) is found not to work.

Furthermore, freshwater sediment management standards (SMS) were updated in September 2013 and it is Washington State Department of Ecology's policy that these standards apply as applicable or relevant and appropriate requirements (ARARs) if the Record of Decision has not yet been completed. The Board believes the TPA agencies should ensure that the Proposed Plan takes into account the numerical chemical and biological criteria in interpreting existing sediment chemistry and bioassay results and in setting preliminary remediation goals for Columbia River sediments in the 100-D/H Area and the River Corridor in general.

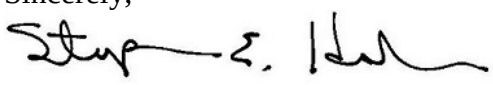
There are at least seven waste sites listed in deep decision units (vadose zone below fifteen feet below ground surface) with isotope concentrations that exceed risk levels that should require action. The isotopes within these waste sites are predicted to take more than 100 years to decay to activity levels that are less than residential screening

levels (spans of time that range from 112-187 years).[1] The Board believes such a long time frame defies the reasonable ability to control the site and maintain the surveillance that will be necessary to keep intruders and other people from harm.

Advice

- The Board advises the TPA agencies to adopt Alternative 3, with the following modifications:
    - Insure the removal and treatment of the co-extracted non-chromium contaminants that exceed MCLGs before treated water is re-injected.
    - Incorporate the maintenance of the pump and treat system into the final alternative to allow the system to be restarted to ensure groundwater and surface MCLGs continue to be met.
    - Apply the Washington State SMS (Chapter 173-204 of the Washington Administrative Code [WAC 173-204]) as ARARs for the Columbia River shoreline.
- The Board advises DOE to explore strategic removal of concentrated mass of isotopes in the deep vadose zone before adopting Institutional Controls and MNA, especially if the period to reach remediation goals exceeds 100 years.
- As proposed plans or other documents come forward for public review, the Board advises the TPA agencies to continue working with the Board to create clear, understandable, and timely public information materials which include: the history of the contamination; interim cleanup actions; work remaining within that specific unit; and how each proposal impacts and protects human health and the environment.

Sincerely,



Steve Hudson, Chair
Hanford Advisory Board

This advice represents Board consensus for this specific topic. It should not be taken out of context to extrapolate Board agreement on other subject matters.

1 See *Table 3. Waste Site Alternatives* on p. 32 of Proposed Plan for Remediation of the 100-DR-1, 100-DR-2, 100-HR-1, 100-HR-2, and 100-HR-3 Operable Units, Rev. 0.

cc: Frank Marcinowski, U.S. Department of Energy, Headquarters
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Kyle Rankin, Co-Deputy Designated Federal Official, U.S. Department of Energy Richland Operations Office
Dawn MacDonald, Co-Deputy Designated Federal Official, U.S. Department of Energy Office of River Protection
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