



STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY

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May 20, 2014

14-NWP-106

Steve Hudson, Chair
Hanford Advisory Board
713 Jadwin, Suite 3
Richland, Washington 99352

Re: Hanford Advisory Board Advice #274, 100-N Proposed Plan, Draft A

Dear Mr. Hudson:

Thank you for the Hanford Advisory Board (Board) advice on Draft A of the 100 N Proposed Plan. While the majority of your advice is directed at the U.S. Department of Energy, the Department of Ecology (Ecology) would like to provide the state's perspective on your advice:

- *The Board advises the Department of Energy (DOE) to evaluate an alternative with targeted remove, treat and dispose to reduce the strontium source at the more highly contaminated liquid disposal sites (basically three hot spots).*

Ecology is also concerned with targeted remediation. We have requested a more thorough evaluation of hot spot treatment for the strontium-90 groundwater plume.

- *The Board advises DOE to evaluate an alternative that employs mini-PRBs just downstream of the most highly contaminated strontium sources, to double the effectiveness of the apatite sequestration technique.*

Ecology agrees. We have requested a more comprehensive evaluation of apatite barrier technology, including expanding the barrier thickness and targeted hot spot treatment.

- *The Board advises DOE to retain and evaluate phytoremediation (Coyote Willows) to reduce the amount of strontium contained in the 100-N foreshore in the Feasibility Study.*

Ecology agrees. We believe evaluation of phytotechnology should have included data from studies that provided removal rates of strontium-90, as well as food chain transfer and waste handling parameters that have been completed. A field demonstration of the technology was planned and never implemented in the 100-N area.

Based on data included in the draft Remedial Investigation/Feasibility Study, Ecology believes application of the phytotechnology should be considered. Ecology and DOE are still discussing application of the phytotechnology.



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- *The Board advises DOE to evaluate remediation of the nitrate plume in the alternatives evaluation, employing a number of ex-situ methods.*

Ecology is also concerned about the remediation of the nitrate plume. We believe several options regarding nitrate should be more fully explained.

- *The Board advises that additional vadose zone apatite injections be installed above the groundwater apatite barrier.*

Ecology agrees. The draft proposed plan includes application of apatite technology in the vadose zone above the groundwater (saturated zone) apatite barrier.

- *The Board advises DOE to evaluate an alternative design of the apatite barrier so that it intercepts the entire depth of river-bound groundwater.*

Ecology believes the current design of the apatite barrier is adequate to intercept the majority of the Strontium-90, which is primarily found in the upper portion of the unconfined aquifer at 100-N.

Ecology appreciates the Board's timely input and thoughtful deliberations on this draft proposed plan. We look forward to continuing discussions with you as we work to address concerns and identify the best path forward for this important cleanup decision.

If there are questions regarding this letter, please contact Nina Menard at Nina.Menard@ecy.wa.gov or (509) 372-7941.

Sincerely,



Jane A. Hedges
Program Manager
Nuclear Waste Program

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