



**FISH AND WILDLIFE SERVICE**  
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December 6, 1994

Ms. Pam Innis  
U.S. Environmental Protection Agency  
712 Swift Avenue, Suite 5  
Richland, WA 99352



Dear Ms. Innis:

This letter provides comments from the U.S. Fish and Wildlife Service (Service) on the Remedial Investigation and Feasibility Study (RI/FS) Report for the Environmental Restoration Disposal Facility, Document DOE/RL-93-99, revision 1. This letter is an addendum to our initial letter dated December 1, 1994. Extension of the comment deadline provided the opportunity to more thoroughly review the Ecological Risk Assessment section.

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The RI/FS considers the human health risk assessment in much greater detail than the ecological risk assessment. This discrepancy in effort is inappropriate. Likely future scenarios suggest very little use of the site by humans, while buffer zones, mitigation banking, and other land uses are likely to retain high quality habitat around the 200 Area, resulting in a much greater potential for exposure of nonhuman organisms. Ecological risk assessment should be given at least as much, if not more, consideration than human health risk assessment.

The Service considers the ecological risk assessment to be inappropriate and incomplete for the following reasons:

- Risk to aquatic organisms when potentially contaminated groundwater discharges into the Columbia River was not assessed.
- Risk to terrestrial organisms during the several decades of the active phase of the landfill when contaminated materials would be exposed and fugitive dust would be likely was not assessed.

- Use of the human health screening process to determine contaminants of potential concern for ecological risk assessment (page 5-1, paragraph 4 and page 6-25, paragraph 6) is not appropriate; exposure scenarios and contaminant sensitivities between humans and wildlife are substantially different.
- Potential impacts based on cumulative exposure to several contaminants was not assessed.
- Ecological risk assessment based on individuals of a single species is not appropriate. If just a single species is used, the RI/FS should more appropriately characterize the information presented as the "Great Basin Pocket Mouse Risk Assessment", and not as an "Ecological Risk Assessment."

The Service considers the risk assessment using the Great Basin pocket mouse to be flawed and based on faulty assumptions. It is stated on page 5-1, paragraph 4 that animal studies are expected to be generally applicable to the pocket mouse. This statement is misleading. The pocket mouse is fairly unique among mammals in having an extremely efficient metabolism, requiring no drinking water and excreting highly concentrated urine. The pocket mouse also spends a significant portion of time hibernating or estivating. Thus, uptake, elimination, and exposure rates are likely to be different from laboratory animals which are provided continually with water and live at a constant temperature, and different from standard man (page 6-29, paragraph 2). The unique aspects of pocket mouse life history should be discussed, and should be taken into account when creating exposure models such as those on pages 6-28 and 6-29.

The exposure scenario of the pocket mouse, which limited the exposure to dietary exposure from seeds, is not appropriate. Additional factors should be included in the exposure scenario. Because the pocket mouse is a burrowing animal, soil exposure will make up a substantial portion of total exposure, including increased dermal exposure from living underground, increased ingestion exposure from grooming, and increased inhalation exposure from dust associated with digging. Although soil exposure from radionuclides was assessed, it was not clear which of the above factors were included. Also, regarding plant uptake of contaminants, it is not clear why plant uptake by deposition was not considered (page 6-27, paragraph 5); this statement should be justified.

Throughout the Ecological Risk Assessment section, lack of specific information upon which to base risk assessment assumptions is frequently mentioned. The Hanford cleanup is a long term project. The Service strongly recommends that the necessary studies be conducted to obtain ecological and contaminant exposure and sensitivity information on the Great Basin pocket mouse and several other key species so that ecological risk can be adequately assessed in the future.

Please accept our apologies for any confusion caused by submitting two letters. Again, thank you for the opportunity to provide comments on the RI/FS. Please contact Liz Block at our Moses Lake Field Office (509\765-6125) if you have any questions.

Sincerely

*Nancy G. Gloman*

*by*  
David C. Frederick  
State Supervisor

lb/jmc

c: U.S. Bureau of Land Management, Spokane (Jake Jakabosky)  
U.S. Department of Energy, Richland (Paul Kube)  
U.S. Fish and Wildlife Service, Othello (Dave Goeke)  
Oregon Department of Energy, Salem (Dirk Dunning)  
WA Department of Ecology, Olympia (Goeff Tallent)  
WA Department of Fish and Wildlife, Kennewick (Jay McConnaughey)  
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