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STATE OF WASHINGTON  
DEPARTMENT OF ECOLOGY

Mail Stop PV-11 • Olympia, Washington 98504-8711 • (206) 459-6000

February 25, 1992

Mr. Steve Wisness  
U. S. Department of Energy  
P. O. Box 550  
Richland, Washington 99352



Re: Solid Waste Landfill Groundwater Monitoring

Dear Mr. Wisness:

During the review of documents for the development of unit specific permit conditions for the solid waste landfill in the Hanford Facility-Wide Permit, it was noted that there has been a release of at least six, and possibly seven, chlorinated organic compounds to the groundwater beneath the landfill. It was further noted that the releases have been on-going since at least January 1986, and probably longer since they were first detected in well 699-24-33, approximately 500 feet downgradient from the solid waste landfill. To my knowledge, Ecology has never been formally notified about these initial releases or the recently observed increases in concentration of some of these compounds beneath the landfill.

Given the groundwater velocities in the vicinity of the solid landfill are approximately six feet a day, the contaminant plume has expanded roughly 11,000 feet downgradient since first detected in well 699-24-33 in 1986. This is likely a conservative estimate because it does not take into account chemical diffusion. The full extent of the contaminant plume remains unknown.

The USDOE has made no attempt to characterize the distal extent of the groundwater contamination. The new solid waste landfill monitoring wells completed since 1986 have been installed upgradient to well 699-24-33, according to USDOE documentation. No monitoring wells have been completed downgradient from well 699-24-33. Additionally, the monitoring of well 699-24-33 evidently has been curtailed since no analytical results from this well were provided in the solid waste permit application.

The USDOE has made no attempt to define the depth of the contamination despite the fact these chlorinated organic compounds are known to sink and form dense nonaqueous layers on the top of the first confining strata. The new solid waste landfill monitoring wells completed since 1986 have been installed at the top of the unconfined aquifer.

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The USDOE has not characterized the lateral extent of the contamination. The contaminants trend to their highest concentrations in a southwesterly direction culminating at well 699-23-34. The axis of concentration likely falls to the southwest of well 699-23-34, yet no new monitoring wells have been completed in the zone of increasing concentration nor have any been added since the USDOE constructed the South Unit of the Phase Two expansion in this direction in 1989.

Quarterly groundwater monitoring of the solid waste landfill groundwater monitoring network has not been performed since May 1990. The monitoring wells for the Nonradioactive Dangerous Waste Landfill and the solid waste landfill were sampled for the first time in 17 months on August 27 and 28, 1991. However, I understand that the sample results are not available. Thus, no sample results have been available for regulatory review for the last 22 months. This raises the following questions:

1. Were the samples lost?
2. Were the results of the analysis lost?
3. Were the samples held past their respective holding times?
4. Were the data unable to be validated?
5. Are the results unavailable for both landfill sampling events?
6. Has the monitoring been reinitiated?
7. Why was the Ecology Unit Manager for both of these sites not notified?

This is disturbing because the last submittal of analytical results show sharp increase in concentration of several of the chlorinated compounds above the Washington State Groundwater Quality Criteria and/or the U.S. Environmental Protection Agency Maximum Contaminant Level for drinking water.

Please provide responses to the questions above by March 15, 1992. If you have any questions and/or comments, please do not hesitate to contact me by phone at (206) 459-6725.

Sincerely,



Paul R. Stasch  
Compliance Specialist

PS:jw

