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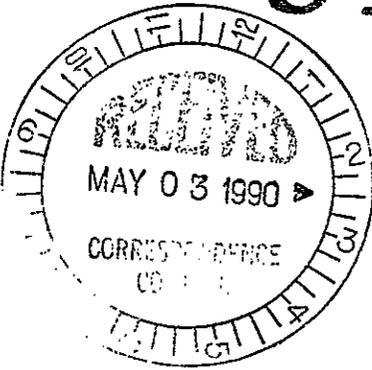
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STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY

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

April 17, 1990



Mr. Steven H. Wisness
Hanford Project Manager
U.S. Department of Energy
P.O. Box 550
Richland, WA 99352



Dear Mr. Wisness:

The following is in response to your March 2, 1990 letter concerning the "INSPECTION OF SIMULATED HIGH-LEVEL WASTE SLURRY (SHLWS) PWO GROUTED CONTAINERS."

Your letter states that all PWO drums have been externally inspected for leakage and that each suspect drum has been opened and inspected for free liquids. No free liquids were found. In addition, residues on the outside of several PWO drums have been analyzed and found to be nonhazardous. Previous correspondence has described the treatment and proposed redesignation of simulated high-level slurry. The results of your treatment and testing procedures are summarized below.

Approximately 11,000 gallons of simulated high-level slurry, an extremely hazardous liquid waste, were neutralized and grouted inside 55-gallon drums at the 1234 laydown yard between September 14 and October 28, 1988. The original waste consisted of two formulations, known as PWO and PW7A. On approval from Ecology, 149 drums containing PW7A waste were transferred to the Hanford Central Landfill on November 15, 1989. The remaining drums of PWO waste remain in the 1234 laydown yard pending designation of the treated waste in accordance with the state dangerous waste regulations, chapter 173-303 WAC.

The simulated high-level slurry was originally designated as EP Toxic (for barium, cadmium, chromium, and silver), corrosive (for pH < 2), ignitable (for high nitrate content and low pH), and EHW for toxicity under dangerous waste mixtures, section 173-303-084 WAC. To designate the grouted simulated high-level slurry a non-hazardous waste, the material must first be checked against all lists, characteristics, and criteria in accordance with section 173-303-070 WAC.

The results of waste designation testing for the grouted waste are summarized as follows:

1. No listed wastes were introduced into the slurry before or during treatment.

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Mr. Wisness
April 17, 1990
Page 2

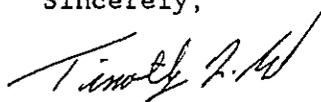
2. The pH of the slurry was raised by the addition of concentrated NaOH so that the final pH of the grouted waste is between 11.3 and 11.6 - below the designation limit.
3. The grouted waste passes the EP toxicity test. Reported concentrations of all regulated metals in the leachate are well below designation limits.
4. The processes of neutralization and grouting have reduced the toxicity of the waste by precipitating metal hydroxides and immobilizing the soluble species inside a solid matrix. The metal hydroxides have much lower toxicity than their original nitrate form, thereby reducing the equivalent concentration to levels below the designation limit for the toxic mixtures designation in 173-303-084 WAC.
5. The grouted waste passes the static acute fish toxicity test. Treated PWO waste is not toxic to the fathead minnow at concentrations up to 1000 mg/L.
6. The grouted waste passes the acute oral rat toxicity test. Treated PWO waste is not toxic to male albino Sprague Dawley rats at concentrations up to 5000 mg per kilogram of rat body weight.

These test results, with the "Justification for Grouting as Best Available Technology", and the discussion of the long-term stability of the grouted waste form (submitted in Treatment of Excess Process Chemicals, Lokken 1989), indicate that the grouting of simulated high-level slurry was an appropriate and successful treatment process for this type and volume of waste.

Ecology considers that the grouted simulated high-level slurry should no longer be regulated as a dangerous waste. As such, this waste is suitable for disposal at a solid waste landfill which meets the minimum functional standards in chapter 173-304 WAC or other more stringent local standards. The USDOE/PNL is still required to close the simulated high-level slurry storage and treatment site in accordance with section 173-303-610 WAC.

I am very pleased by the level of detail in your report and by your willingness to provide Ecology with the information needed to review this proposal. If you have any questions concerning this matter, please contact Mike Gordon of my staff at (206)438-7024.

Sincerely,



Timothy L. Nord
Hanford Project Manager

cc: Dan Duncan
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Toby Michelena

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Subject: Simulated High-Level Waste Slurry PWO Grouted Containers

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