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STATE OF WASHINGTON  
DEPARTMENT OF ECOLOGY

7601 W. Clearwater, Suite 102 • Kennewick, Washington 99336 • (509) 546-2990

October 4, 1993

Mr. Gerald Pollet  
Heart Of America Northwest  
1305 Fourth Avenue  
Cobb Building, Suite 208  
Seattle, WA 98101



Dear Mr. Pollet:

The Washington State Department Of Ecology (Ecology) appreciates your participation in furthering the clean up at the Hanford site. Enclosed please find responses to the comments presented in your letter.

**RESPONSE TO HEART OF AMERICA COMMENTS ON THE 100 AREA TREATABILITY TEST PLAN.**

**COMMENT:** Each of the notices fail to disclose the following: *The list of discrepancies is long and not reproduced here.*

**RESPONSE:** In regard to the 100 Area Treatability Test, it was assumed that members of the general public would not object to the investigation/cleanup of a contaminated waste unit. We were concerned however, that the public be aware of and have an opportunity to ask additional questions regarding the purpose of the test.

The Environmental Protection Agency (EPA), the Washington State Department of Ecology (Ecology), and the United States Department of Energy (USDOE) are attempting to implement a new method for investigating and cleaning up hazardous waste sites. Numerous critics of the Superfund process have voiced concerns that regulatory agencies routinely spend too much time and money studying sites prior to taking action. Recognizing that funding for cleanup of Hanford is limited, EPA, Ecology, and USDOE agreed to take some risks in the investigation phase if those risks led to a cheaper, faster cleanup of contaminated sites.

The three agencies' answer to this problem was to develop the Hanford Past Practice Investigation Strategy (see enclosed). The process outlined in the Hanford Past Practice Investigation Strategy (Strategy) gathers much of the information you have requested during the cleanup phase. It is even possible

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that some minor information may never be gathered. Nevertheless, removing or isolating contamination from human and environmental receptors is the goal of the three parties, and we believe the Strategy will assist us in reaching those goals.

If the Strategy is unacceptable, please assist us by contacting Ms. Darci Teel. Ms. Teel supervises the CERCLA section in Ecology's Kennewick office and can be reached at (509) 376-3010.

COMMENT: As with the 200-BP-1 site, this proposal does not constitute a "cleanup." Therefore, it is erroneous to state that the proposal "has the potential to cleanup the test site."

RESPONSE: By the nature of your response, I will assume that you did not understand the nature of this treatability test, because we did not articulate what we were proposing to do. We used the term "has the potential to cleanup a waste site" because this test excavates all soil within the crib that appears to be greater than background. The waste is then temporarily stored on site for future treatability tests. One potential future treatability test includes shipment to Hanford's 200 Area and vitrification in an area suitable for permanent disposal. We assumed by removing all contamination in a waste site, it was possible that no further action would be performed at that individual waste site.

COMMENT: Vitrification of soil is not remediation.

RESPONSE: We are not able to destroy these radioactive elements short of transmutation. Transmutation is the creation of new elements and is not a viable option at this time. The best that engineers and scientists can do today is to isolate the radioactive elements in such a manner that they do not migrate through the soils or groundwater, thus exposing humans and animals.

Isolation is an option because, in time, the isolated elements will become less radioactive through natural decay. The natural decay process is measured in half lives. A half life is the average time it takes for one half the atoms in a radioactive element to decay to a nonradioactive state. Examples of half lives are 12.3 years for  $^3\text{H}$  (tritium), 28.1 years for  $^{90}\text{Sr}$  (strontium-90), and  $1.57 \times 10^7$  years for  $^{129}\text{I}$  (iodine-129). As a rule of thumb, ten half lives would reduce most radioactive contaminants to background levels.

As the above information points out, it will take many years for the material to become non-radioactive. The options for treatment of radioactive contaminated soil are limited. Current environmental laws state a preference for treating the waste to render it less hazardous, less mobile, or reduce its

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volume. Treatment is defined as encapsulation, solidification, stabilization, extraction, or any combination of the above. Using the definition above, vitrification is a form of stabilization/solidification.

COMMENT: Vitrification is an irreversible action, which creates a permanent radioactive waste disposal site. It would be far better to remove and treat this soil elsewhere, than to vitrify it in place in the 100 Area.

RESPONSE: The intent of using vitrification in the remediation of the 100 Area is for final disposal. *None of the contaminated soil in the 100 Area will be vitrified in place.* Further investigation (beyond the scope of the test plan) will determine the treatment/solidification path that will be taken in order to allow unrestricted land use of the 100 Area. It is possible that soil washing in combination with vitrification will be the best remedial alternative.

COMMENT: We would like to know of the proposed disposition and analysis for all soil wash contamination liquids.

RESPONSE: Currently, all soil washing liquids are required to be analyzed for SW 846 Target Analyte Lists (TAL), Target Compound Lists (TCL), and radionuclides. Liquid waste containing elevated concentrations of waste has several options. Those options include evaporation and treatment through a system that includes filtration, ion-exchange, and granulated activated carbon canisters. The liquid will then be managed as purgewater. The soil washing of these soils is not scheduled until next calendar year. At that time, additional requirements may be evaluated.

COMMENT: Will all quality assurance and control measures required by applicable laws be met?

RESPONSE: There are three types of data collected for making environmental decisions. They are:

- Investigation samples. These samples will be performed to meet the requirements of the Limited Field Investigations (LFIs). They do not meet Contract Laboratory Requirements (CLP) as required by CERCLA. They are analyzed to RCRA SW-846 standards. The major difference between CLP and SW-846 is the amount of Quality Assurance/Quality Control (QA/QC) background documentation prepared. CLP analysis may not be necessary for samples that will not end up in a court of law.

- Remediation samples. These samples are intended to augment the observational approach. During remediation, the luxury of waiting for

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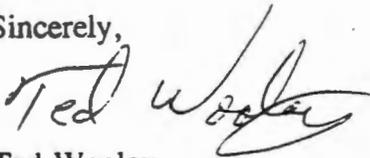
laboratory analysis does not exist. For example, we would have to leave an excavation open for up to four months until analysis showed that all the contamination had been removed. Also, the cost of laboratory sampling becomes a factor in large scale remediation. The three agencies decided to attempt to develop and implement field equipment that could give results in about two hours for indicator chemicals.

- Verification/conformation samples. These samples are collected after all other sampling indicates remediation is complete. They will be performed to CLP standards and will be able to withhold the scrutiny of a court of law if necessary.

The 100-Area excavation treatability test is designed to use this remediation sampling concept. We will collect split samples and compare the field result to SW-846 results. The intent is to determine the level of uncertainty necessary to implement this concept in full scale remediation.

If you have any other comments or concerns, please contact me at (509) 736-3012.

Sincerely,



Ted Wooley  
Unit Manager  
Nuclear & Mixed Waste Management Program

TW:mf

cc: Eric Goller, DOE  
Dennis Faulk, EPA  
Administrative Record

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# CORRESPONDENCE DISTRIBUTION COVERSHEET

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Subject: RESPONSE TO HEART OF AMERICA COMMENTS ON THE 100 AREA TREATABILITY TEST PLAN

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