

## **Hanford Challenge Comment Highlights on the TC & WM EIS**

### **Main Point**

The DOE should revise and reissue the draft EIS and not move forward with a final EIS until such time as a complete site characterization is conducted and after valid risk assessment models are developed.

We also make a few other points:

### **Offsite Wastes**

The DOE is poised to spend tens of billions of tax dollars on one of the most complex and challenging remediation campaigns ever undertaken. Importing and disposing of offsite waste that will in fact add new contamination to the groundwater and violate drinking water standards for thousands of years is indefensible, and defeats the purpose of the remediation effort.

### **High-Level Waste Tanks**

- 1) All the tank waste should be removed from the tanks, adequate characterization be performed to determine whether certain tanks need to be removed, and leaked waste that has leaked from the tanks into surrounding soils be retrieved and treated.
- 2) DOE should be aware that recent court decisions do not bar DOE from removing high-level radioactive waste (HLW) from the tanks and treating that waste for disposal. Nor do the HLW decisions bar DOE from separating some portion of that waste into a stream that meets low-level radioactive waste (LLW) standards and disposing of that waste outside of a geologic repository in a properly licensed disposal site.
- 3) At the Hanford Reservation, DOE may not unilaterally decide that HLW has been transformed into “waste incidental to reprocessing.” If the concepts embodied in Section 3116 are in any way adopted or used in the Hanford Draft EIS, then EPA, NRC and the states will not have meaningful oversight over the amount of radioactive waste DOE decides to leave in the tanks.
- 4) Clean closure of the tanks is the preferred alternative. The Draft EIS should be revised to include alternatives for Double Shell Tank closure.
- 5) All tank waste should be immobilized through vitrification. None of this waste should be disposed of on the Hanford Site, however. Adequate provision for temporary storage should be made at Hanford until a deep geological repository becomes available for use. Hanford Challenge opposes bulk vitrification and stone-casting. We support Option 2B for two high-level waste and six low activity waste melters.
- 6) Safety and worker protection should be paramount considerations in the tank farm closure and vitrification processes.

## **Groundwater and Vadose Zone**

7) All of the Alternatives create groundwater sacrifice zones by default because all Alternatives fail to meet regulatory compliance standards for groundwater. Long-term groundwater impacts would result in extensive regions of contamination along the Columbia River shoreline making the area uninhabitable. The DOE cannot say that they are going to clean up the tank farms by sacrificing the groundwater, and then claim that decisions about groundwater cleanup are not part of the Draft EIS. Clearly the Draft EIS must include consideration of groundwater cleanup decisions.

8) There should be no grouting and “closure” of the tanks with amounts of HLW in place, as DOE would be unable to remove any additional waste from the tanks or further maintain the integrity of the tanks. While DOE can be expected to environmentally monitor the tank fields as long as DOE has custodial responsibility over the sites, it is not contemplated that the tanks would be monitored for any specified period of time beyond that and passive institutional controls will need to be in place. Currently, we are unaware of any requirement for markers to alert future generations to the hazards posed by the waste similar to the requirements for passive institutional controls at geologic disposal site(s) for high-level radioactive waste. Such a situation would be the equivalent of abandoning waste in place. The prevailing attitude of the scientific community also uses the term “abandon.”

9) A comprehensive workplan for achieving the legally mandated levels of groundwater restoration must be included among the alternatives in the draft final EIS. In effect, this draft EIS contains only a "No Action Alternative" for contaminated groundwater at Hanford.

10) When some of the massive past releases occurred, soils were at near-saturation conditions, causing downward flow along preferential drainage pathways to the groundwater. This type of contaminant migration is common at most of the Hanford tank farms as indicated by patterns of contamination distribution and as is found in the similar geologic conditions in the lower Columbia Basin. With these conditions, it is inappropriate to use the type of vadose zone contamination migration model that was used in the Draft EIS.

11) The first step to completing a valid risk assessment is to characterize the nature and extent of contamination in the soil around the tank farms. This means tracing the contamination from the source through the unsaturated zone soil and into groundwater at most of the contamination plumes. Currently active sources of groundwater contamination are not included in the risk models. Active sources of vadose zone contamination are also not included in the risk models. It is premature to make tank closure decisions and create groundwater sacrifice zones until the subsurface conditions are understood and vadose zone plumes are adequately characterized.

12) The Draft EIS should also evaluate a large scale soil excavation/removal strategy for deep contamination removal.

13) The DOE uses full clean closure costs but only partial clean closure benefits in its cost benefit analysis.

14) DOE should not plan to undertake any remediation that requires institutional controls beyond 100 years after closure. The Draft EIS appears to assume that the DOE, or another agency of the US government, will control the Hanford Site for 10,000 years (vol 2., p. Q-31). This is an extremely unlikely scenario, and defies common sense.