

Proceedings of the Environmental Protection Agency
PUBLIC MEETING ON WASTE LEACHING
Session I - Introduction and Overview

Importance of this Meeting - Greg Helms

Greg Helms of EPA's Office of Solid Waste, Hazardous Waste Identification Division, reviewed some of the issues related to the current leaching tests and their application in the Resource Conservation and Recovery Act (RCRA) program. A copy of Mr. Helms' presentation materials is available through the following link: [helms1.pdf](#). During his presentation, he summarized the issues associated with the Toxicity Characteristic Leaching Procedure (TCLP), noting that the test is based on a codisposal mismanagement scenario where the waste in question is assumed to be disposed of in a sanitary landfill. For many large volume wastes (e.g., mining residuals, utility ash) such a mismanagement scenario is not a plausible one. He also noted that the TCLP is designed to replicate leaching in an acidic environment, however, in some waste management situations, the waste is subjected to leaching at high pH. For those materials that pose their greatest hazard when exposed to alkaline leachate, use of the TCLP will underestimate leaching potential. Mr. Helms posed several questions to the group, to provide focus and context for the discussions over the next two days:

1. Given the large uncertainties associated with both the fate and transport models and the health impact values, how accurate and precise do the leaching tests which serve as the source terms for the models, have to be?
2. Can the deficiencies with using the TCLP for the various RCRA applications (e.g., assessing the hazard posed by alkaline wastes, determining leaching potential in monodisposal situations) be fixed with minor changes or does the Agency need to adopt a totally different approach?
3. The Toxicity Characteristic (and the TCLP) is based on assuming improper management in a sanitary landfill. Given the changes that have taken place in the past 20 years, is this still an appropriate mismanagement scenario to employ in the characteristic? If not, what would be the appropriate scenario or scenarios to use?
4. How can time dependent processes (biodegradation, oxidation, reduction, washout, physical stressors) which can act to both lessen and increase leachability be incorporated into the estimation procedure?
5. Is there an existing test or tests that should be considered as replacements for the TCLP to characterize wastes?
6. How can changes in the existing tests or a new test be validated?
7. Can measurement of fundamental properties of the waste be used to replace leaching tests or to overcome test limitations?
8. The current scenario assumes that the hazard posed by the waste is contamination of ground water and subsequent ingestion of the contaminated water. Should the Agency be concerned about other routes of exposure (e.g., volatilization of the waste and subsequent breathing of contaminated air)?
9. How should the Agency balance the tradeoffs between test accuracy, test time, and cost?

10. Should the waste characterization process be waste type specific (e.g., different tests and scenarios depending on the type of waste)?
11. Where should mobility testing end and modeling begin?

During the question and answer period, a participant asked how the Agency would use the results of the conference. Mr. Helms said that the Agency will issue a report describing actions that the Agency may take, and detailing the science behind any changes to testing protocols that may be implemented.