

US EPA ARCHIVE DOCUMENT

**EPA Science Advisory Board
Reviews of Waste Leachability**

**Environmental Engineering
Committee**

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Two SAB/EEC Reports

1. Leachability Phenomena - Recommendations and Rationale for Analysis of Contaminant Release

EPA-SAB-EEC-92-003

2. Waste Leachability - The Need for Review of Current Agency Procedures

EPA-SAB-EEC-COM-99-002

1992 Report

The 1992 EEC/SAB Leachability Phenomena Report
Recommended an Agencywide Effort to:

- Study and better understand mechanisms controlling leachability,
- develop better conceptual models for waste management scenarios,
- evaluate stresses affecting long-term contaminant release potential,

1992 Report

(continued)

- develop a variety of contaminant release tests and test conditions to assess potential release of contaminants from sources of concern
- improve mathematical models to complement laboratory tests of leachability, and
- field validate leach tests before broadly applying them

1992 Report

(continued)

The leachability phenomena report pointed out that:

- prior to developing or applying any leaching tests or models, the controlling mechanisms must be defined and,
- an understanding of how they (directly or indirectly) influence release and environmental fate should be established
- any extrapolation of a set of conditions or stresses appropriate for one purpose should not be applied to another without reasonable verification of relevance

1999 Report

The latest EEC Commentary(1999) draws the Administrator's attention to the need for review and improvement of EPA's current waste leachability procedure, i.e., TCLP, because

- TCLP is applied too broadly,
- Leach tests can be improved by accounting for additional parameters
- Agency's reliance on a single mismanagement scenario has caused difficulties

1999 Report

(continued)

- In the Edison Electric vs. EPA Case (1993), the Court recently ruled that the Toxicity characteristic rule must bear “some rational relationship to mineral wastes in order for the Agency to justify the application of the toxicity test to those wastes”

1999 Report

(Continued)

- In the Columbia Falls Aluminum Co. vs. EPA case (1998), the Court ruling cited the language in the earlier Edison Electric case and vacated the TCLP application. In this case of landfill, high alkalinity, monofilling of waste, and very low ratios of leachate to waste were important to waste leaching not present in the TCLP test

1999 Report

(Continued)

- The SAB/EEC recommended that EPA improve leach test procedures, validate them in the field, and then implement them
- The SAB/EEC recommended that the Agency study the TCLP test procedure, its various applications, and then generate improved leach test procedures
- The SAB/EEC anticipates that multiple leaching tests may be needed to meet the multiple uses