



## Engineering Sciences Section – 2004

### **C40 Passing the Buck (Around)–Using Forensic Environmental Evidence to Allocate Environmental Cleanup Responsibility and Costs Among Potentially Responsible Parties**

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The goal of this presentation is to demonstrate concepts and parameters for applying technical environmental investigation approaches and results to establishing the relative degree of responsibility among parties responsible for environmental harm at Superfund-type sites, using right and wrong examples and case histories.

This presentation will impact the forensic community and/or humanity by providing help to environmental site investigators and those involved with developing and negotiating cost allocations for Superfund-type sites with constructing and applying the most appropriate, justifiable, and equitable technical basis for allocation and to acquaint listeners with some possible new and innovative approaches.

Allocation of responsibility and response cost among potentially responsible parties at federal Superfund and equivalent state-program environmental cleanup sites is probably the most contentious and litigious aspect of those programs. The process is made difficult and complex for several reasons, including: parties rarely are willing to accept *any* responsibility for an abandoned contaminated site (partly because of the joint and several liability aspect of Superfund); every party that does accept some responsibility naturally wants their share to be the smallest; CERCLA and state regulations provides little guidance on how allocations should be done; every site is unique in the circumstances that led to the state of contamination and the history of owners, operators, generators and transports; every site is different in terms of the technical evidence that reveals the history and causes of contamination driving the cleanup.

Despite these difficulties, responsible parties can usually be made more accepting of responsibility and of a fair allocation share if an appropriate allocation model is developed, based on equitable principles and defensible technical parameters, that can be reasonably supported with site-specific environmental evidence. This presentation will explore some successful and unsuccessful allocation models and why they succeeded or failed, together with the types of forensic evidence that has proven to be most useful in allocation cases.

The most fundamental principle driving fair and successful allocations is that of cost causation: the parties that contributed most to the environmental harm that is driving cleanup costs are the parties that should pay the most. Often, a simple volumetric allocation is attempted, if appropriate evidence exists. However, seldom is sufficient waste volume evidence available to allow a volume-only based allocation to be done fairly. Other parameters than can be useful in the allocation formula include time of involvement in the site, relative portion of the site occupied or used, types of activities at the site, waste management practices, timing of waste releases at the site, and characteristics of the hazardous materials/wastes handled at the site.

The greatest challenge, of course, is developing convincing evidence that indicates each party's relative role in causing the harm. That is where the bag of forensic investigation/analysis tools comes into play. Some of the investigative tools and types of evidence that have proven to be most useful in developing and applying allocation models are the following:

- determining three-dimensional distribution of key contaminants in soil and groundwater
- reconstruction of the historical spread of contamination from sources using historical data and computer models
- using historical aerial photos to identify source areas, parties, times of releases, and other evidence
- interviewing former employees and other witnesses to past activities
- using information from similar analogue sites
- researching old operational manuals, policies, and guidance documents
- applying geographic information system (GIS) technology to data compilation, analysis, and display
- assessing relative toxicity, mobility, and persistence of different contaminants in the mix

Several interesting case histories will be used to demonstrate how these and other lines of evidence have been used and misused to allocate cleanup responsibility and costs.

#### **Environmental Cleanup, Cleanup Cost Allocation, Environmental Forensics**