

# TRACKING MIXED WASTE FROM ENVIRONMENTAL RESTORATION THROUGH WASTE MANAGEMENT FOR THE FEDERAL FACILITY COMPLIANCE ACT\*

Diane Isbell and Marilyn Tolbert-Smith  
U.S. Department of Energy  
Germantown, Maryland

Margaret MacDonell and John Peterson  
Argonne National Laboratory  
Argonne, Illinois

Tim Kirkpatrick  
EG&G Idaho  
Idaho Falls, ID

## ABSTRACT

The Federal Facility Compliance Act required the U.S. Department of Energy (DOE) to prepare an inventory report that presents comprehensive information on mixed wastes. Additional documents, such as site treatment plans, were also required of facilities with mixed waste. For a number of reasons, not all DOE mixed waste sites are able to provide detailed characterization and planning data at this time. Thus, an effort is currently under way to develop a reporting format that will permit mixed waste information across the DOE complex to be tracked as it becomes available.

## BACKGROUND

The Federal Facility Compliance Act (FFCA) of 1992 required DOE to prepare an inventory report that presents comprehensive information on mixed wastes across the DOE complex. An interim report was submitted last spring to the U.S. Environmental Protection Agency (EPA) and the governors of states in which these wastes are located. The DOE was also required to prepare site treatment plans for each facility with mixed waste, and conceptual plans were submitted last fall. These reports present volume estimates for DOE mixed wastes and current information on treatment facilities, including planned technologies, facility availability, and schedules. For a number of reasons, comprehensive characterization and planning data are not yet available for all DOE sites. Thus, an effort is currently under way to develop a framework for collecting site-specific mixed waste information as it becomes available.

Specific data requirements for FFCA reporting needs include source descriptions, contaminant and waste matrix information, five-year waste volume projections, and treatment capacity estimates. For many operating facilities, data on waste stream profiles are readily available and plans for waste management are generally understood. However, this is not the case for a number of environmental restoration sites. Characterization of contaminated media and stored wastes at these sites is well under way, but this effort is far from complete. More important, many of the sites are involved in compliance agreements, consent orders or decrees, permits, and other interagency understandings that govern remediation plans (including schedules), and specific waste collection and treatment activities are in the early, conceptual stage in most cases.

## ISSUES

In developing integrated environmental restoration information for the FFCA and responding to related EPA and state comments, the DOE faced several issues. Perhaps the most difficult was the need to compile representative volume estimates for mixed wastes that would be managed over the next five years. This required each site to project not only what stored waste would be further managed (and how), but whether contaminated environmental media would become waste in the future.

That projection is directly tied to the remedial actions that are to be taken for those media, and those remedies are currently very difficult to predict. Because many sites are in the assessment phase of the environmental restoration process and contaminant levels in different media vary considerably, few know the remedies that will be applied for all contaminated materials at a given site.

Under these circumstances, conservative assumptions are often applied to develop simple, preliminary estimates. However, if it were conservatively assumed that existing contaminant information (which is typically incomplete) could be extrapolated to an entire site and that all contaminated materials would be collected, the waste volumes across the DOE complex would be significantly overestimated. In fact, several common categories of remedial action would not result in any waste being generated (including institutional controls, in-situ containment, and/or in-situ treatment); after the defining analyses for each site have been completed, these types of remedies will probably be identified for numerous environmental media at many locations.

Nevertheless, to respond to the FFCA, operations offices were required to provide waste estimates that were known to be very preliminary (and therefore uncertain) by anticipating remedies long before all the information needed to determine those remedies was available. For most sites, one of the most

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serious problems associated with having to make these projections at this time is the inconsistency with the pre-established schedules for developing site remedies in consultation with EPA according to separate regulatory processes, per interagency agreements that often include the host state.

Second, many mixed wastes are susceptible to double counting because of the phased relationship between environmental restoration and waste management activities. In addition, differences between waste volume estimates presented in the FFCA-required reports and other estimates previously developed to satisfy different DOE objectives (e.g., early project planning estimates and bounding-case estimates) had to be reconciled.

Third, waste characterization data that are in the process of being collected and validated had to be used to project treatability information. This included information for waste acceptance criteria and technology standards, where indicated, even though the actual composition of wastes that may be generated by restoration activities in the future is not yet known, and specific treatment plans (including mobile unit options and individual facility designs) are not yet available for most sites.

### CONCLUSIONS

A number of conclusions were reached in dealing with these issues during development of the interim mixed waste inventory report and conceptual site treatment plans. First, it was found that increased coordination between the DOE

waste management and environmental restoration groups could reduce the tendency for overcommitments regarding information that is not available at the same level of detail for both programs. This coordination has increased, and the joint effort involved in compiling data for inventoried wastes has resulted in a more consistent presentation of information for concurrent release to the states.

Second, schedule flexibility was found to be critical to addressing state expectations regarding detailed mixed waste projections. Given that the assessment process is at different stages across DOE environmental restoration sites and existing interagency agreements vary, flexibility was incorporated into the schedule for the site treatment plans by defining staged reports (conceptual, draft, and final) from 1993 through 1995.

Third, despite the fact that not all information is available at this time to completely characterize DOE's mixed wastes and treatment facilities, an expanded data collection system with a cradle-to-grave reporting structure can facilitate interfaces between the environmental restoration and waste management programs and limit the possibility of double counting. Such a framework could also be used to capture additional data as they become available. Toward this end, a comprehensive data reporting framework has been developed for the environmental restoration program, with the intent of providing an electronic link to other DOE programs so that mixed waste information can be accurately tracked.