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Agency

Office of Solid Waste
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Solid Waste

EPA

Report to Congress

Solid Waste Disposal in the United States

Executive Summary

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Disposal of "nonhazardous" solid waste is regulated under Subtitle D of the Resource Conservation and Recovery Act (RCRA). These Subtitle D wastes include many different types of waste streams, such as municipal solid waste, industrial waste, and oil and gas waste. Recently, concerns have been raised regarding the impacts Subtitle D wastes may be having on human health and the environment. In response to these concerns, Congress, in the 1984 Hazardous and Solid Waste Amendments to RCRA, directed the Environmental Protection Agency (EPA) to evaluate the adequacy of the current Subtitle D regulatory program. This report fulfills this mandate.

The report is published in two volumes. Volume I presents the conclusions and recommendations of the Subtitle D study, and Volume II contains the results of the data collection efforts. Because of data availability, municipal solid waste landfills and the wastes they receive are covered more completely than other facility and waste types. In addition, oil and gas wastes, mining wastes, utility wastes, and municipal sewage sludge are only briefly discussed because they are subjects of other efforts currently being conducted by EPA.

Major Findings

Subtitle D Waste Stream Is Large and Diverse. More Than 11 Billion Tons of Subtitle D Waste Are Produced Annually in the United States. Of this total more than 95 percent are industrial nonhazardous waste, oil and gas waste, mining waste, and municipal solid waste. Each type of waste presents unique management problems and risks.

There Are Many Subtitle D Units. There are 226,732 Subtitle D units in the United States. Eighty-four percent of this total are surface impoundments, 8 percent are land application units, 6 percent are landfills, and 2 percent are industrial waste piles. Of the nearly 13,000 landfill units identified, 6,584 are municipal solid waste landfill units.

Shortages of Municipal Solid Waste Landfill Capacity Are Occurring in Some Areas of the Nation. The shortages are due to several factors: (1) 83 percent of the municipal solid waste generated in 1986 was landfilled; (2) 45 percent of all municipal solid waste landfills will close by 1991; (3) some States have not conducted long-term planning; and (4) siting of new disposal facilities is difficult.

Impacts Have Been Identified For Municipal Solid Waste Landfills. These include:

- Municipal solid waste landfills have degraded and may continue to degrade the environment.

- Human health impacts from exposure to ground-water contamination caused by municipal solid waste landfills have not been documented. However, taken as a whole, the data indicate that releases to the ground water from municipal solid waste landfills present potential risks to human health.

- Acute human health impacts associated with methane releases have been documented.

- The Agency is currently determining the extent of human health risks that may result from emissions of volatile organic compounds.

- Indian Tribes perceive that municipal solid waste disposal is an environmental problem on Indian lands.

Data Are Insufficient to Support A Conclusion Regarding Impacts At Industrial Subtitle D Facilities. However, the limited available data on industrial Subtitle D facilities indicate that there is cause for concern and a need for further study. Current findings include: (1) the use of design controls at industrial facilities is very limited; (2) the number of industrial facilities is large and the amount of industrial nonhazardous waste generated annually dwarfs the amount of municipal solid waste; and (3) violations of State standards have been documented. EPA will be able to better define the impacts of industrial waste facilities after additional data are available.

Several Subtitle D Waste Streams Pose Special Management Concerns. Waste tires, infectious waste, and municipal waste combustion ash are examples of special Subtitle D wastes. The special management concerns posed by these waste streams arise from the unique characteristics of these wastes. Current data are not sufficient to estimate reliably the risks posed by these wastes.

Existing Federal and State Subtitle D Regulations Are Inadequate. Federal and some State solid waste regulations lack the following essential requirements: location criteria, appropriate design criteria, ground-water monitoring, corrective action, closure and post-closure care, and financial responsibility.

State Implementation of State Regulations Is Inadequate. The following State program inadequacies were found: incomplete enforcement authorities, fragmented organization, limited resources, and a lack of long-term planning.

Since 1980, Very Limited Technical Assistance on Solid Waste Management Has Been Offered by the Federal Government to State and Local Governments. The last Agency guidance document on solid waste management was issued in 1979.

Recommendations

EPA Makes the Following General Recommendations:

- The roles established by RCRA for Federal, State, and local governments should be continued, with responsibility for implementing the Subtitle D program mostly with State and local governments.

- An integrated waste management system including: source reduction, recycling, energy recovery, and environmentally sound land disposal for the residual wastes should be promoted.

- Coordination among Federal and State agencies and Indian Tribes is needed to develop an appropriate strategy for solid waste management on Indian lands.

- Data gaps, particularly for industrial waste facilities need to be filled. Additional survey and characterization studies as well as health risk assessments are necessary.

With Respect to Federal Activities EPA Recommends the Following:

- The current Federal Subtitle D criteria should be revised for municipal solid waste landfills.

- Technical assistance to States and local governments should be increased and should include an emphasis on source reduction and recycling.

- Subtitle D regulatory programs established by the Federal government should be commensurate with risks posed by each waste stream or facility type.

For State and Local Programs, EPA Recommends the Following:

- State and local governments should ensure the vitality of their Subtitle D programs by establishing a dependable future source of funding and strengthening enforcement authorities.

- More long-term planning for solid waste management should be conducted by State and local governments.

- The States must quickly adopt the new Federal criteria for municipal solid waste landfills, as required by the 1984 Hazardous and Solid Waste Amendments.

EPA Recommends the Following Legislative Changes:

- EPA's authority for developing standards under Subtitle D for closed solid waste disposal facilities should be clarified.

- The definition of Indian Tribes under RCRA should be amended to include provisions similar to those under the Safe Drinking Water Act.

- Data are insufficient to indicate the need for any additional enforcement authorities beyond those provided by HSWA for solid waste disposal facilities that receive household hazardous waste and small-quantity generator hazardous waste.