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BY THE COMPTROLLER GENERAL

Report To The Congress

OF THE UNITED STATES

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How To Dispose Of Hazardous Waste -- A Serious Question That Needs To Be Resolved

The Resource Conservation and Recovery Act of 1976 was enacted to regulate management of hazardous wastes which pose a threat to human health and the environment. The development of environmentally sound treatment and disposal facilities is essential to this purpose.

However, adequate capacity is not available to handle the increasing volumes of waste being generated, and public opposition is seriously hindering development of new disposal facilities. Even existing environmentally safe facilities are being jeopardized at a time when the volumes of waste are increasing.

How to obtain needed disposal capacity and make sure that funds will be available to correct problems which may occur after site closure are formidable issues for the Environmental Protection Agency.

U.S. General Accounting Office.

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COMPTROLLER GENERAL OF THE UNITED STATES
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To the President of the Senate and the
Speaker of the House of Representatives

This report describes (1) the problems which will be encountered in implementing the Resource Conservation and Recovery Act of 1976 due to the limited capacity of commercial hazardous waste management facilities to safely dispose of the wastes regulated and (2) the need to provide assurances, through a federally administered trust fund, that funds will be available when needed to correct sites permitted under the act should they cause environmental or other damage after they are closed.

We made our review pursuant to the Budget and Accounting Act, 1921 (31 U.S.C. 53), and the Accounting and Auditing Act of 1950 (31 U.S.C. 67).

We are sending copies of this report to the Director, Office of Management and Budget, and the Administrator, Environmental Protection Agency.

Elmer B. Staats
Comptroller General
of the United States

U.S. General Accounting Office.
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D I G E S T

Hazardous wastes which pose a threat to human health and the environment have not been adequately controlled. As a result, public health and the environment have been threatened.

An example of what can happen as a result of inadequate disposal of hazardous wastes recently occurred at the Love Canal Chemical Waste Landfill in Niagara Falls, New York. Although the site was closed 25 years ago, homes bordering the site now have toxic chemical leachate (a liquid resulting from water coming in contact with waste) and chemical fumes present in the basements.

In the Love Canal case, the Environmental Protection Agency has identified the presence of 82 chemicals, 11 of which are suspected carcinogens. The State Commissioner of Health has concluded, in part, that there is growing evidence of a higher risk of subacute and chronic health hazards as well as spontaneous abortions and congenital malfunctions for persons exposed to substances emanating from the site. (See p. 2.)

The Congress passed the Resource Conservation and Recovery Act of 1976 to regulate the management of hazardous waste. The act requires the Environmental Protection Agency to develop a hazardous waste regulatory system which will assure public health and safety and safeguard the environment. (See p. 3.)

PUBLIC OPPOSITION TO SITING FACILITIES

Adequate treatment and disposal capacity is critical to carrying out the hazardous waste regulatory program. However, there is currently a shortage of suitable disposal facilities, and the problem will become more acute

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as (1) additional wastes are found to be hazardous, (2) wastes stored or disposed of in an environmentally unsound manner may require proper disposal, and (3) wastes presently treated and disposed of on company property may be taken to offsite disposal facilities. In addition, appreciable reductions in the volume of waste requiring disposal cannot be expected at present. (See pp. 8-10 and 17.)

The Agency estimates that when the Resource Conservation and Recovery Act of 1976 is implemented 50 to 60 additional sites for commercial use will be needed nationally for proper hazardous waste handling, treatment, and disposal. New Jersey, for example, may need as many as 10 waste processing and treatment facilities and an undetermined number of secure landfills. (See p. 6.)

Agency studies as well as GAO's discussions with State and disposal industry officials show that public opposition to siting facilities is a major constraint to expanding disposal capacity and that it is likely to increase in the future. States with advanced facility permitting systems are reporting increasing difficulties in permitting new facilities. (See p. 10.)

Although many solutions to the siting problem have been suggested by government and industry officials, no one solution appears to have universal applicability.

The Agency is aware of the capacity problem and the effect of public opposition and has reported to the Congress that this is one of the major problems in implementing the Resource Conservation and Recovery Act. Although the Federal Government's role in this area is unclear, a proposed study to identify and evaluate alternatives that Federal, State, and local governments may take will not be funded in fiscal year 1979. The $100,000 initially programed to conduct this study has been reprogramed to support the development of hazardous waste regulations. (See p. 15.)

In considering this problem, the Agency's proposed guidelines for the development and implementation of State hazardous waste management plans require States to provide for adequate and appropriate recovery, treatment, storage, and disposal capacity. The plans must be approved by the Agency before the States are eligible for Federal financial assistance. (See pp. 15-17.)

FUNDS TO CORRECT PROBLEM SITES

Inadequate disposal practices in the past have resulted in harm to humans and the environment many years after sites have been closed. In many cases, ownership has been transferred or relinquished, and legal liability and financial responsibility have been difficult to establish. Thus, the costs of cleanup or remedial measures to abate the pollution have been passed on to the taxpayer. (See p. 23.)

Initially, the Agency proposed postclosure liability insurance for permitted disposal facilities to protect the public from damages in later years. However, this insurance covered only claims resulting from damages to persons or property, not the costs to correct problem sites or minimize further pollution. This type of insurance, however, does not appear to be available from private insurers and, even if it were available, the Agency estimates that the premiums would be prohibitively expensive. (See pp. 25 and 26.)

In lieu of private insurance, the National Solid Waste Management Association recommended the creation of an industrywide federally administered trust fund, funded by a surcharge on disposal. Officials of treatment and disposal facilities and representatives of national industrial associations that GAO interviewed generally favored a Federal trust fund covering postclosure liability and any needed remedial work. Agency hazardous waste officials are now considering recommending a federally administered trust fund to protect the public against damages occurring after a

hazardous waste disposal facility has been closed. The fund would be responsible for damage claims and remedial action up to a specified amount.

RECOMMENDATIONS

The Administrator, Environmental Protection Agency, should:

--Monitor and evaluate closely the development of State solid waste management plans to (1) identify the magnitude of the problems in locating suitable disposal sites early in the process and (2) propose alternative solutions including, if necessary to protect national interests, a stronger Federal role. (See p. 22.)

--Propose legislation to create a self-sustaining national trust fund, supported by fees assessed on the disposal of hazardous wastes, to cover all postclosure liability and any necessary remedial actions for sites permitted under the act to prevent continued contamination. In developing the fee schedule an effort should be made to reflect the degree and duration of risk posed by specific wastes. (See p. 28.)

AGENCY COMMENTS

Although written comments were not obtained, GAO discussed the report with Agency officials and where appropriate their comments were included. The Agency agreed with the conclusions and recommendations. (See pp. 22 and 28.)

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ABBREVIATIONS

EPA	Environmental Protection Agency
GAO	General Accounting Office
HWMF	hazardous waste management facility
RCRA	Resource Conservation and Recovery Act of 1976

CHAPTER 1

INTRODUCTION

This is the first in a series of reports on implementation of the hazardous waste regulatory program mandated by the Resource Conservation and Recovery Act of 1976 (42 U.S.C. 6901). This report addresses the question of how to dispose of hazardous waste and discusses the nationwide problem of lack of treatment and disposal capacity to safely regulate hazardous waste. The second study underway discusses the staffing and funding needs for effective Federal and State hazardous waste management programs.

HAZARDOUS WASTE AND ITS MANAGEMENT

Whenever resources are converted into goods, waste is generated and much of it is hazardous. Hazardous wastes are those which may have acute adverse or chronic effects on human health or the environment when not properly controlled. Wastes become hazardous because natural materials have been concentrated or released into the environment or because processes have changed materials into hazardous substances. These substances may be ignitable, reactive, corrosive, radioactive, infectious, or toxic. They may exist as solids, liquids, sludges, powders, and slurries; but about 90 percent are liquid or semiliquid. Some of these wastes are nondegradable and persist in nature indefinitely.

In 1976 an Environmental Protection Agency (EPA) study estimated that about 46 million metric tons of potentially hazardous waste would be produced in 1977 and that this volume would increase to about 52 million metric tons in 1983. Hazardous wastes are produced in all areas of the country; the annual volume in 1975 ranged from about 11,000 metric tons in South Dakota to about 4 million metric tons in New Jersey.

Management and disposal of these wastes at commercial offsite facilities has increased in the last 10 to 15 years due to the emergence of public concern and awareness about the environment and because new environmental laws have banned other disposal methods. However, the industry has not reached its full potential. For example, not all treatment and disposal options are available at commercial facilities in all States. According to a January 1977 EPA report, 24 States did not have incineration, treatment, or disposal facilities and 10 States had only one or two of these options.

IMPROPER DISPOSAL AND ITS POTENTIAL DAMAGES

In the past, few controls existed over hazardous waste. With permissive or totally absent legislation, the most inexpensive disposal method was generally used regardless of environmental consequences. As a result, public health and the environment have been threatened.

The damage caused by disposal of chemical wastes at the Love Canal Chemical Waste Landfill in Niagara Falls, New York, is an example of what can result from inadequate disposal of hazardous wastes. This landfill was used to dispose of chemical wastes for 25 to 30 years, until about 1953, but the problems are just now becoming known. According to the New York Department of Environmental Conservation:

> "Chemical odors from the site are evident at all times, but are particularly obnoxious on hot humid days. Children use the site as a short cut and as an unofficial playground. The part of the site near the grammar school has been graded and is used as an official playground by school children. Highly contaminated leachate is seeping into basements of the homes surrounding the site from where it is pumped into storm sewers. Chemical fumes are present in the basements.
>
> "Evidence exists that Mirex and other pollutants have been discharged to the Niagara River...
>
> "Leachate containing halogenated and unhalogenated organic compounds is definitely migrating in the top soil horizon. Though not identified or quantified, organic chemicals are definitely vaporizing directly from the site."

This situation has received wide coverage in the news media in which it was reported that the State's Health Department noted a high incidence of miscarriages and birth defects in the area abutting the canal and that EPA reported at least 82 industrial chemicals were found of which 11 are suspected carcinogens. Arrangements have reportedly been made to relocate 122 families, and the area has been declared a national emergency.

There are many other examples where improper disposal practices have threatened human lives and the environment. Although some of these practices occurred decades ago, their

impacts are only now being seen. A 1977 EPA study of 50 hazardous waste land disposal sites showed that 43 had contaminated ground water with heavy metals or inorganic compounds. Since half of the Nation's population is dependent on this water source for drinking water, proper control of waste disposal is essential.

NEW FEDERAL HAZARDOUS WASTE REGULATORY PROGRAM REQUIREMENTS

To regulate the management of hazardous waste, the Resource Conservation and Recovery Act of 1976 (RCRA) was enacted on October 21, 1976. Subtitle C creates a "cradle-to-grave" control system for management of this waste, including appropriate monitoring, recordkeeping, and reporting. EPA was required to develop the regulatory framework by April 21, 1978, and to operate a hazardous waste regulatory program in each State. RCRA provides, however, that each State may assume responsibility for its State program if it develops and implements a program equivalent to the Federal program.

EPA is required to (1) define the criteria and methods for identifying hazardous wastes to be included in the management control system, (2) establish a manifest system to track wastes from the point of generation to their ultimate disposition in a permitted treatment, storage, or disposal facility, and (3) set the standards of operation for such facilities. These standards, when issued, will establish the levels of protection to be achieved and will provide a criterion to evaluate permit applications. Facilities both on and off the site of waste generation will be required to obtain permits.

EPA has delayed compliance with the RCRA. As of September 15, 1978, EPA had received at least six notices of intent to seek court orders compelling it to issue regulations under subtitles C and D of the act; three have actually filed suits.

EPA's latest estimated date for publishing the final regulations establishing the regulatory framework is January 25, 1980--about 21 months beyond the statutory deadline. EPA officials told us that EPA's limited resources and the complexity of the issues involved caused the delay in meeting the extremely tight deadlines. In an August 8, 1978, letter to the Chairman, Subcommittee on Oversight and Investigations, House Committee on Interstate and Foreign Commerce, the Administrator stated, in part,

"While it is true that the Agency is late in promulgating hazardous waste regulations under the Resource Conservation and Recovery Act, this delay is due to several factors, including a significant public participation effort in the regulation development process and an attempt to maximize integration of RCRA with the toxic chemical control aspects of the 1977 Clean Water Act amendments."

This delay has had an adverse effect on creation of additional hazardous waste treatment, storage, and disposal facilities--the subject of this report. According to the Executive Director of the National Solid Waste Management Association:

"Until a hazardous waste management program is in place and enforced, there will be minimal development of new facilities which meet the rigid environmental standards necessary to provide secure disposal of hazardous waste. Without enforced regulations, there is little incentive for generators of hazardous waste to pay the high cost of disposal at specially designed and designated facilities."

SCOPE OF REVIEW

We performed our review at EPA headquarters, Washington, D.C.; and at EPA regional offices in Atlanta, Dallas, New York, Philadelphia, San Francisco, and Seattle. We visited State organizations in North Carolina, New York, New Jersey, Pennsylvania, Maryland, Washington, Oregon, California, Texas, and Ohio. We also met with industry associations and with 45 generators and 28 treaters and disposers of hazardous waste to obtain their views on problems associated with disposal of hazardous wastes.

CHAPTER 2

ADEQUATE TREATMENT AND DISPOSAL CAPACITY IS CRITICAL TO MANAGING HAZARDOUS WASTES

The development of environmentally sound disposal facilities is essential to the successful implementation of the hazardous waste regulatory program mandated by the Resource Conservation and Recovery Act of 1976. This capability does not now exist. There is currently a shortage of suitable disposal sites and the problem will become even more acute as additional wastes are determined to be hazardous, existing sites are closed because they do not meet environmental requirements, and wastes which are being disposed of on private property are taken to offsite facilities. Effective implementation of the program cannot be accomplished unless additional treatment, storage, and disposal capacity can be developed.

The absence of an enforceable hazardous waste program and public opposition to siting new facilities--not technical or economic factors--are inhibiting the expansion of commercial disposal capacity. Although timely implementation of the Federal hazardous waste program should provide the incentive for creation of new capacity, the siting problem must still be overcome. Several solutions have been suggested or tried, including siting facilities on public land; however, all have encountered similar problems.

From an economic standpoint, as the costs of treatment and disposal increase, industry will look to ways to reduce its wastes. Although reducing the amount of industrial waste and waste exchange between industries offer some promise, they will not appreciably reduce the total waste volume requiring treatment and disposal.

OFFSITE HAZARDOUS WASTE TREATMENT AND DISPOSAL CAPACITY NEEDS TO BE INCREASED

The most recent estimate of the total volume of potentially hazardous waste exceeds the treatment, storage, and disposal capacity available. A 1976 EPA-funded study--based on the results of a study of 12 major waste generating industries--conservatively estimated that these industries would generate approximately 46 million metric tons of potentially hazardous waste in 1977. Of this, about 7.9 million metric tons (17 percent) would require offsite treatment and disposal at commercial hazardous waste management facilities with the remainder handled by the waste generator on company property. The waste requiring offsite

commercial facilities, however, would exceed the environmentally adequate 1/ industry capacity (about 6.2 million metric tons) by about 1.7 million metric tons. Although the study estimated an overall capacity deficit in 1977, deficits were not projected in all regions or in all industrial categories.

According to EPA's 1977 "State Decision-Makers Guide for Hazardous Waste Management," an estimated 50 to 60 additional sites for commercial use will be needed to meet the demand for proper hazardous waste handling, treatment, and disposal when the Resource Conservation and Recovery Act of 1976 is implemented. Included in this estimate is the need for 20 hazardous waste landfills. EPA regions II, III, V, and VI officials told us that their regions lack sufficient capacity to handle the wastes already being generated. Officials in 4 of the 10 States we visited stated that there was a capacity shortage in their States.

New Jersey

As of March 28, 1978, New Jersey had only seven commercial offsite disposal facilities, and State officials reported this limited capacity is further aggravated by the State's prohibition against any dumping of hazardous waste in landfills. The last commercial landfill was closed in June 1976. The chief of the State Bureau of Hazardous and Chemical Waste stated that a minimum of 4 and a maximum of 10 hazardous waste processing and treatment facilities plus an undetermined number of secure landfills would be needed when RCRA was implemented.

North Carolina

North Carolina has no current commercial hazardous waste land disposal sites. Firms transport their waste hundreds of miles out of State to find adequate disposal facilities.

Ohio

Presently, about 90 percent of Ohio's hazardous waste is being disposed of somewhere other than in permitted sites in the State. Only three disposal sites in the State

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1/ Environmentally adequate capacity includes such methods as chemical treatment, incineration, and secure landfill. It does not include deep well injection, open dumping, or sanitary landfills.

have even a possibility of being permitted under RCRA, and one has a remaining capacity of about 9 months.

Pennsylvania

Currently, Pennsylvania does not have any State or commercial facilities specifically designed to treat and dispose of hazardous waste. There are a limited number of landfills approved for handling certain types of hazardous wastes; however, the State's disposal industry could handle only about 10 percent of the hazardous waste generated in the State.

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Officials in two other States (New York and Washington) said that although adequate capacity existed in their regions to handle the wastes generated, it was not within a reasonable distance of the waste generator. Although a California State official told us there was no capacity problem in the State, hearings before the State Solid Waste Management Board raised a concern that additional sites were needed to minimize both the cost and energy associated with long transportation hauls.

Officials in four of the seven States which had disposal facilities told us that it would require from 3 to 5 years to develop adequate, environmentally safe capacity. In addition, some States have passed legislation which may make the permitting of hazardous waste disposal facilities more difficult. For example:

--Kentucky passed legislation which requires that no permit for long-lived wastes be issued for a hazardous waste disposal facility which may require long-term or perpetual care and maintenance without approval of the Kentucky General Assembly and the Governor. Although the director of the State Department of Solid Waste said that it was too early to determine the effect of this legislation, EPA headquarters and region IV officials told us that this legislation may make the permitting of hazardous waste land disposal sites more difficult. An industry official commented:

"Since the Kentucky General Assembly does not meet for another two years, it effectively means that there will be no hazardous waste disposal facilities located within Kentucky for at least that period of

time, and the possibility of obtaining approval from the majority of the General Assembly for such a facility, even when in session, is very limited."

--The State of Connecticut passed a law allowing local governments to prohibit, through zoning, land usage for hazardous waste disposal. No disposal site can be built, established, or altered without the local zoning planning board's and the Connecticut Department of Environmental Protection's approval.

The director of the State Department of Environmental Protection said the law probably guarantees that the department cannot get approval from local governing bodies for a site to be used for regional purposes. Advocates of the law contended that smaller towns should not be forced to serve as dumping grounds for wastes from other communities.

Capacity shortages may be understated

The estimated 1.7 million metric tons of hazardous waste which exceed available capacity may be understated as a result of several factors: (1) industries which generate potentially hazardous wastes were not included in EPA's estimate, (2) wastes presently treated and disposed of on company property may be taken offsite to the disposal industry, and (3) wastes stored or disposed of in an environmentally unsound manner may require proper disposal.

Not all industrial categories were included in the EPA estimate of hazardous waste

The 1976 estimate of hazardous waste volumes was based on an analysis of 12 industry studies. The estimate must be considered as a minimum projection because there were other sources of potentially hazardous waste which were not included. Since that time, additional studies have been made which did identify other sources not included in the estimate. For example, an EPA-funded study reported that the electronic components manufacturing industry land-disposed an estimated 54,500 tons of potentially hazardous waste in 1975. For the 23 plants surveyed, 87 percent of the waste was handled offsite by private contractors.

Efforts to reduce air and water pollution may also result in generation of greater quantities of hazardous waste. An Edison Electric Institute official said that the

Institute tested fly ash and scrubber sludge from coal fired plants according to draft EPA criteria and concluded these wastes would be classified as hazardous. These wastes were not included in the EPA estimate and, according to the Institute official, would add about 125 million tons annually.

In addition, officials of several industry associations told us that some companies which are uncertain as to whether their wastes are hazardous may simply declare the waste hazardous and thus avoid expensive testing costs. A company in Oregon, for example, has dumped heavy metal sludges on its property for 20 years. Company officials told us that they would not try to prove the waste is not hazardous because it would be too costly and time consuming and would attract public attention. They said that they would dispose of the waste at an offsite disposal facility.

Shifts from onsite to offsite facilities may occur

In 1976 the EPA Hazardous Waste Management Division Director reported that 82 percent of the hazardous waste generated in 12 major waste generating industries was treated or disposed of on the waste generators' property and assumed that this would remain the same through 1983. However, onsite disposal generally has not been any better than offsite disposal. Based on the EPA case studies, 63 percent of the damage incidents were attributable to onsite disposal. Instead of incurring the additional costs to comply with new RCRA treatment and disposal standards, some companies may decide to change to offsite hazardous waste management facilities.

According to a 1977 EPA-funded study, the lack of land near plants in urban areas, public resistance to establishing disposal facilities, and difficulty in locating sites which meet the requirements for hazardous waste disposal will tend to force individual plant operators toward offsite disposal by contractors.

Discarded wastes require proper treatment or disposal

EPA's estimates also did not consider the capacity needed to accommodate wastes from past inadequate storage and disposal facilities. According to EPA, up to 90 percent of the hazardous waste generated may have been inadequately treated and disposed of. We believe that it may be necessary to transfer wastes from closed sites or sites which may

close when RCRA is implemented to environmentally sound sites to avoid substantial dangers to the public and the environment.

The following are examples of situations where the waste may need further treatment or disposal.

--In Texas an 11.29-acre tract of land contains various waste materials, including styrene tars, acids, chlorides, catalyst, lead, and mercury. Since 1967 there have been overflows and seepages of high strength wastes from the land into drainage ditches flowing into Jones Bay and the Gulf of Mexico. The pits into which the waste was poured are not lined, and the waste may be polluting the ground water, posing an additional threat to the environment.

--For over 20 years a chemical plant in Iowa discharged waste into a disposal site located within 300-400 feet of the Cedar River. The disposal site is estimated to contain about 160,000 cubic yards of sludge with an arsenic content of about 2.8 percent. The arsenic water quality criteria for the Cedar River has been exceeded due to leachate from the site.

PUBLIC OPPOSITION IS THE MAJOR BARRIER TO EXPANDING DISPOSAL CAPACITY

Hazardous waste is a national issue, and the public is concerned with problems involved in hazardous waste management. Inadequate disposal practices in the past have resulted in threats to public health and a polluted environment. Recent publicity, such as the explosion at a New Jersey disposal facility which claimed 6 lives, as well as news articles regarding polychlorinated biphenyls (PCBs), dioxins, and other hazardous waste substances have made the public sensitive to the siting of hazardous waste facilities in their area.

Information obtained from State and industry officials, representatives of environmental interest groups, and environmental impact statements indicate that people are against the permitting of sites for many reasons. For example, people are fearful of groundwater contamination, air and land pollution, fires, explosions, spills, rodent damage, odors, and dust dispersion. They complain that if a hazardous waste facility is built near them, the value of their homes will decline and future real estate development will be inhibited. They protest that they do not want their community to be known as a "dumping ground" for other people's waste.

In a 1976 EPA-funded study of the hazardous waste disposal industry, in which approximately 80 percent of the hazardous waste management service industry was surveyed, 42 percent of the firms interviewed stated that public opposition was a constraint in obtaining new sites or expanding old ones. Most State officials we interviewed cited this as the major barrier and expected public opposition to increase in the future. Virtually all of the disposal industry officials interviewed indicated that public opposition was a major problem. Few disposal industry officials cited a lack of technology or available financing as major barriers.

Public input and opposition are likely to increase as new requirements for public participation in the permitting process are implemented. According to EPA, reports from States with advanced hazardous waste management facility permitting systems indicate increasing difficulty in permitting new facilities due to local opposition. EPA's policy is to encourage public participation, including public hearings. Draft EPA regulations provide that any person can, within 30 days of public notice, request the EPA Regional Administrator to hold public hearings on the permitting of any existing or proposed hazardous waste management facility. A hearing must be held if (1) a written request containing all required information is completed and the request presents genuine issues or (2) the Regional Administrator determines that a public hearing is necessary or appropriate.

Public acceptance is critical in permitting new facilities

The 1977 EPA "State Decision-Makers Guide for Hazardous Waste Management" states that one of the most difficult problems faced by the applicant is that of gaining public approval from a community for construction of a waste management facility. It advises that the first step toward the formation of a favorable public attitude is for the prospective owner to design and present to the community a comprehensive plan for an environmentally safe, economically viable, and aesthetically pleasing facility. However, there is no guarantee that even an economically and environmentally sound facility will be welcomed by the community.

During our discussions with many hazardous waste management facility operators, generators, trade association representatives and Federal and State officials, many approaches to overcoming public opposition were suggested, including the siting of facilities on public land and preemption of local government approval authority. A few said that siting on public lands could offer some assurance of

long-term care of the sites and possibly quell citizen fears of mismanagement. Others said that it would be necessary for the Federal or State governments to overrule local government denials of zoning or construction permits. They believed that officials at the Federal and State levels of government would be more insulated from public pressure and could base their decision on the technical adequacy and need for the site and be less influenced by the emotional issues. Although at least three States we reviewed reportedly had the authority to override local decisions, we found no cases where these States exercised that authority.

A 1976 EPA interim policy report stated that if efforts by local agencies and private enterprise to obtain land for a proposed hazardous waste disposal site have proven futile, then the State might resort to purchase of land itself and subsequent leasing of the site to a private operator. The report stated that if all other approaches to obtain sites have been exhausted, the State might have to exercise its right to eminent domain in order to secure land for hazardous waste facilities. An official of the National Governor's Association told us that few States have eminent domain authority to obtain land for hazardous waste facilities. If land must be obtained, State legislators must provide the necessary authority. An EPA official told us that EPA is attempting to identify those States with eminent domain or preemptive authority but has not as yet completed the effort.

Other possible solutions mentioned included siting in heavily industrialized areas, siting in isolated areas, public education, and a system of financial incentives for the affected community. While each of the suggested approaches may work in some instances, no one approach to the siting problem appears to have universal applicability.

Officials in five of the seven regions visited commented that proposed sites were stopped primarily because of public opposition. Many of these sites were rejected by local authorities. Others were withdrawn by the facility operator without even applying for a permit rather than face the opposition, and; another, although obtaining a permit and completing construction, still ended up in a legal battle.

The following examples, obtained from State officials, illustrate some of the problems encountered in siting waste disposal facilities.

Minnesota

In 1975 EPA granted the Minnesota Pollution Control Agency $3.7 million to establish a chemical landfill. The purpose of the grant was to demonstrate that a chemical landfill could be operated in an environmentally safe manner. After identifying 40 potential site locations, the agency narrowed the selection to 12 locations. All 12 proposed locations were rejected because of public opposition.

County commissioners representing the people near the proposed sites passed resolutions that a hazardous waste disposal site could not be located in their area and threatened to fight any such site in every way possible. As a result, the Minnesota Pollution Control Agency abandoned the idea of using any of the sites.

The Control Agency then identified four new locations for the project. At each of four public information meetings, many people declared they did not want a hazardous waste site located near them. In August 1978, no site had been located, and the Control Agency, unable to meet its grant deadlines, returned the grant money to EPA.

New York

Plans for the excavation of a new landfill, which was considered by the New York Department of Environmental Conservation to be environmentally safe, met with severe public opposition. Two groups were successful in obtaining an injunction to bar the excavation. New York State's Department of Environmental Conservation intervened on behalf of the company, and excavation was begun. The case went to the Appellate Division of the New York Supreme Court, and the court overturned the injunction.

Washington

The Washington State Department of Ecology spent over 4 years trying to locate a disposal site. A total of 20 sites were evaluated. The most acceptable site, however, was rejected because of opposition by county officials. As a result of continuing failures to locate a site on private or State land, the Department of Ecology tried to locate a site on Federal land about 12 miles from the center of the City of Richland. The site was located on the Hanford Reservation, presently being used for nuclear powerplant sites and nuclear waste disposal. The State authorized $1.3 million for the purchase of land from the Federal Government and development of the hazardous waste disposal facility.

The State experienced fierce opposition to the proposed location, but the project received its final blow when the City of Richland filed a lawsuit against the State claiming the environmental impact statement was not adequately prepared. One State official told us that as a result of the intense public opposition and the lawsuit, the State abandoned the proposed site. He also stated that the site development money appropriated by the State legislature was revoked as a result of the site controversy.

However, the State legislature later appropriated $200,000 for purchase of a site with instructions to the Department of Ecology to approach the legislature again for site development funds once a site was purchased. The Department is now proceeding with an alternate site on the Hanford Reservation and has reached agreement with the City of Richland on procedures for the environmental impact statement reviews and for administering the site.

Pennsylvania

EPA proposed a project to be carried out on federally owned land to demonstrate that municipal waste treatment plant sludge could be used as a low cost fertilizer and applied to the land. The sludge was to come from the City of Philadelphia. EPA argued that the sludge could probably increase crop yields in the county by 30 percent as well as become a marketable commodity. Within 1 week of the first news release concerning the project, local citizens were fighting it. Several elected officials opposed the project, the public vocally opposed it, and petitions to kill the project began to circulate. In light of the adverse public reaction, EPA decided to discontinue the project.

Even existing capacity may be jeopardized by public opposition

Existing disposal capacity near residential areas is also being reduced due to public opposition. For example, local opposition to a Franklin County, Washington, site led to its closure even though the Washington Department of Ecology has identified the location as a preferred site for a hazardous waste disposal facility.

A California State official told us that one hazardous waste facility closed voluntarily due to citizen opposition. Homes were built next to the fence of the site, and people began complaining about odors and the location of the site.

Several State officials told us that if, under RCRA, public hearings are required in the permitting of existing sites, much of their States' capacity may be eliminated. A California official estimated that 8 of the 10 existing sites in the State may be closed if public hearings are held. An Illinois official told us that all of the hazardous waste disposal sites in the State could be closed.

EPA EFFORTS TO ADDRESS THE PROBLEM OF SITING HAZARDOUS WASTE FACILITIES

In 1978 EPA reported to the Congress that one of the major problems remaining in implementing RCRA is insufficient capacity and public opposition. In commenting on this problem EPA stated that

> "* * * active and visible public participation, based on intense public education efforts, in the development of hazardous waste programs at State and local levels should help to build positive public attitudes."

These problems are being addressed in EPA's (1) proposed State planning guidelines, (2) public education program, and (3) public opposition study.

State planning requirements

To be eligible to receive Federal financial assistance under subtitle D (State or regional solid waste plans) of RCRA, State solid waste management plans must be approved by EPA. EPA issued proposed guidelines for the development and implementation of these plans on August 28, 1978. The State plans must be approved not later than 18 months after final regulations are issued.

For hazardous wastes, the guidelines require that the State plan provide for adequate and appropriate recovery, storage, treatment, and disposal capacity. Recommendations for assuring facility development include:

--Where facilities and practices are found to be inadequate, the State plan should provide for the necessary facilities and practices to be developed by responsible State and substate agencies or by the private sector.

--For all areas found to have 5 or fewer years of capacity remaining, the State plan should provide for the (1) development of estimates of waste

generation by type and characteristic, (2) evaluation and selection of resource recovery, conservation, or disposal methods, (3) selection of sites for facilities, and (4) development of schedules of implementation.

--The State plan should encourage private sector initiatives to meet the identified facility needs.

--The State plan should provide for the State to acquire facilities or cause facilities to be acquired in any area having fewer than 2 years of projected capacity.

Public education program

Educating the public on the need for environmentally safe hazardous waste disposal facilities has been suggested as one possible solution to overcoming public opposition. An EPA official told us that public education will not work if presented like propaganda. What is needed, according to this official, is a program which will provide as much unbiased information as is available on hazardous waste and its disposal.

In fiscal years 1975-78, the EPA budget for public education totaled about $1.1 million with about one-third of the funds allocated to hazardous waste. Beginning in fiscal year 1979, however, the proposed EPA strategy involves a 4-year public education program specifically designed to address the siting of hazardous waste facilities. Although initially planned at a funding level of about $550,000 in fiscal year 1979, the current program funding level is about $325,000.

The American Public Health Association will coordinate the program with EPA and three other grantees. The program includes two regional conferences in each of the 10 EPA regions to which about 100 people will be invited. Those participating will include members of various environmental and public interest groups as well as other civic and community leaders and State and local officials, including public health officials. EPA is encouraging the States to convene similar conferences using grant funds provided to the States under RCRA. During the last 3 years of the program, EPA intends to fund community-level work through the League of Women Voters.

Public opposition study

EPA is in the process of awarding a contract to study public opposition in addition to the unsuccessful Minnesota demonstration grant discussed on page 13. The purpose of this study is to (1) conduct case studies on the siting of hazardous waste management facilities (HWMFs), examining in particular what the roles of Government agencies have been and (2) analyze the spectrum of alternatives for resolving controversial sitings with particular regard for what may be considered to be appropriate Government involvement.

The phase I contract will cost about $50,000 and require 6 to 7 months to complete. In this study, the contractor will analyze 30 selected case studies and summarize and discuss the circumstances under which attempts were made to site and operate HWMFs, and what methods were employed (if any) to gain citizen acceptance.

In phase II, which was to be an option contract, the contractor was to identify, describe the nature of, and evaluate the alternatives that governments (Federal, State, or local) may take (presently or with new legislation) to solve or minimize the problem of citizen opposition to siting HWMFs, discussing fully the advantages and disadvantages of the alternatives. Although EPA reported to the Congress in February 1978 that "it is also unclear what effect the Federal government can have on the impediments to capacity creation," the $100,000 initially programed in fiscal year 1979 for this phase of the study was reprogramed to support the development of the hazardous waste regulations.

TECHNIQUES TO REDUCE WASTE VOLUMES WILL NOT ALLEVIATE THE CAPACITY PROBLEM

EPA's desired management options for hazardous waste prior to ultimate disposal in secure landfills are (in order of desirability):

--Reduce the generation of hazardous waste.

--Separate out and concentrate hazardous waste.

--Utilize the waste through exchange or recovery.

To the extent wastes can be reduced, separated, concentrated, or utilized, the demand on commercial hazardous waste disposal services can be relieved. At the present time, however, appreciable reductions in the total waste volume are not expected.

Waste reduction, separation, concentration, and recovery

Restriction of hazardous chemicals used in operations, substitution of less hazardous materials, and better quality control to reduce production spoilage are possible actions which can be taken to reduce the amount of hazardous waste. The more hazardous or toxic waste streams can be isolated from mixtures in which they occur, and wastes can be concentrated by dewatering, resulting in reduced waste volumes and disposal costs. Also, many wastes contain valuable basic materials, which makes material recovery logical from both resource conservation and environmental viewpoints. However, according to State and industry officials, these techniques have not gained general acceptance or wide use because they are presently more expensive than land disposal. They should become more competitive as more stringent controls over disposal and increased enforcement cause disposal costs to increase.

A 1977 EPA-funded study reported that in recent years stricter waste disposal regulations and the scarcity and rising prices of raw materials have made it more attractive for companies to research further uses for the valuable components of their waste. Large companies with many processes and skilled chemical engineers are likely to find those recycling opportunities which exist, particularly within their own manufacturing facilities.

Many waste generators we interviewed said that economics dictated the method of disposal used. Several large firms are actively seeking ways to reduce waste. For example:

--One large chemical company requires that all wastes be examined by its laboratory personnel to make certain that the waste has no economic value prior to its disposal.

--A large manufacturer is reducing wastes through such methods as separating waste streams, trying to extend the life of hazardous substances used in processing, and marketing its usable wastes.

Two firms, however, said that practical problems negate the use of one volume reduction technique. One reported that substitution of materials in one part of the production process affects the whole process and presents quality control problems. The second, a pharmaceutical firm, said that product development, testing, and registration approval

by the Food and Drug Administration takes years to obtain, and substitution of constituent chemicals negates such approval.

Although some large firms have been using volume reduction techniques, smaller companies typically do not have the time or skills to use them fully. For them, it is almost always cheaper to dispose of their waste rather than reduce the quantity or reclaim valuable materials.

A few firms said they attempted to recover their waste or to change materials or processes but have not been successful. For example:

--A forging company spent about $250,000 for a system to neutralize its waste acids, but the system caused a fire and they quit using it. A company official said that small companies do not have the money to develop their own neutralizing or reclaiming systems and that Federal or State governments could assist them by developing good waste exchange information systems and by providing technical information.

--A manufacturing company experimented with neutralizing waste acid but abandoned the attempt when it found it too costly. A company official told us that if disposal costs rise significantly when RCRA is implemented, the company will try to reduce waste volumes by dewatering its sludges.

Several hazardous waste processors and State officials described the following as possible barriers to increased use of reclaiming:

--Recycled materials may be more costly than new materials.

--There may be insufficient volume of a given waste to make reclaiming economically feasible.

--Technology to recover some wastes is not available.

--Recycled goods may be viewed as inferior products.

--It is cheaper to dump wastes on the land than to recycle or reclaim them.

Waste exchange

Exchange rather than disposal of hazardous waste could also reduce the volumes requiring ultimate disposal. Waste

exchanges operate on the concept that one firm's waste can be another's feedstock. Most exchanges use a passive approach in that they act as a clearinghouse, providing information on specific waste materials that are available. Companies interested in using these wastes are placed in contact with the waste generator. A materials exchange not only provides information but also accepts the waste and transfers it to a user.

Presently, however, the waste exchange industry is in its infancy and success to date has been limited. Waste exchanges suffer from a generally poor image in that many firms said the wastes offered for exchange are just that --a waste. Also, insufficient volumes to meet user needs, transportation and product liabilities, and the fear of disclosure of proprietary information have discouraged wider use of this service.

This concept is relatively new in the United States. The first waste exchange began operation in November 1975 and, according to an EPA official, there are now 16 informational exchanges and 4 materials exchanges in existence.

According to EPA, about 3 percent of all wastes generated have a potential for transfer and reuse. However, EPA does not know how much hazardous waste is or can be exchanged. We contacted eight waste exchanges, four of which estimated that their exchange rate for hazardous waste ranged from 0 to 30 percent of the listings. An Illinois waste exchange official estimated that his firm is exchanging about 0.2 to 0.5 percent of the total hazardous waste generated in the State.

The effectiveness of waste exchanges is limited by the lack of staff--none of the eight contacted had more than two employees. Exchange officials told us that personal contact with industry is essential for exchanges to be successful. People are needed to meet with industry representatives to explain the service which can be provided and the benefits which can be obtained. A California waste exchange official said that much of the waste listed is worthless and that personal contact between seller and buyer is needed to surface valuable wastes not automatically listed.

The lack of contact with industry was confirmed in our discussions with industry officials. Many said they knew little about waste exchanges and believed there was a need for more information about them. Others said that the wastes offered are too mixed to be of any use to them.

Many generators indicated they had not used waste exchange services either to obtain raw materials or to find a user for their wastes.

Another concern expressed by industry officials was the possible release of proprietary information. A waste exchange official told us that industry officials are concerned that their identity would not be kept confidential and that competitors would gain information on their production process by analyzing the waste. A Manufacturing Chemists Association representative said that he was not in favor of waste exchanges because of this same concern.

EPA's waste exchange effort is limited--one full-time employee was assigned in January 1978. The current activity consists of accumulating information on exchanges, providing technical assistance, and encouraging interested parties in setting up exchanges. A $60,000 contract is being awarded with fiscal year 1978 funds to set up five waste exchange seminars across the country, and $40,000 has been provided to five EPA regional offices to perform waste exchange feasibility studies. According to EPA officials, no fiscal year 1979 funds--other than one full-time employee and related travel funds--have been programed for this activity.

CONCLUSIONS

Without adequate, environmentally sound disposal and treatment capacity, the intent of RCRA to insure public health and safety cannot be achieved. Adequate capacity is not available to handle the amount of waste generated, and techniques to reduce waste volumes requiring disposal will not alleviate this problem. Attempts to obtain new sites are hindered by public opposition and even existing environmentally safe facilities are jeopardized at a time when volumes of waste are growing.

Citizens are understandably concerned about existing or proposed new waste facilities in their areas. They read and hear news accounts of incidents such as the Love Canal site in New York, see processions of trucks, smell odors emanating from mismanaged sites, and may experience decreased property values when their water supplies are contaminated.

Hazardous waste must be safely treated and disposed somewhere; thus, a more active Federal and State role is required to assure that facilities are available to handle the wastes generated. EPA guidelines for developing and implementing State solid waste management plans should help to focus attention on the siting problem and should result in development of environmentally safe facilities.

For this to occur, however, Federal, State, and local officials must recognize that these facilities are needed and take appropriate action, however unpopular, to secure them.

RECOMMENDATION

We recommend that the Administrator, EPA, closely monitor and evaluate the development of State solid waste management plans to (1) identify the magnitude of the problems in locating suitable disposal sites early in the process and (2) propose alternative solutions including, if necessary to protect national interests, a stronger Federal role.

AGENCY COMMENTS

EPA concurs with our assessment of the scarcity of adequate capacity to manage hazardous wastes. EPA intends to monitor the siting and capacity situation but must stress the restraints on a more active Federal involvement that are presented by the long tradition of State and local rights and responsibilities for land-use planning.

CHAPTER 3

POSTCLOSURE FINANCIAL RESPONSIBILITY FOR DISPOSAL SITES MUST BE ASSURED

Many closed and/or abandoned disposal sites threaten public health and the environment. Historically, little was done to clean up the damage or to prevent further contamination because funds were not available either from the facility owner or the State and local governments. Assurance that funds will be available promptly to address problem sites which are permitted under RCRA would not only minimize damages but could also reduce citizen opposition to the siting of such facilities.

Although EPA has not yet issued national standards for owners and operators of treatment, storage, and disposal facilities, a major concern of disposers is the postclosure financial responsibility provision. Liability insurance is not readily available for this type of coverage, and the establishment of individual trust funds would be costly. As a result, it is likely that some disposal facilities would be forced to close and the establishment of new sites may be slowed. The creation of a self-sustaining national trust fund supported by surcharges on disposal would minimize the financial burden and provide the needed coverage. The fund should be designed to provide money not only for claims arising from damages to persons or property but for remedial actions to prevent further contamination.

FUNDS MUST BE AVAILABLE TO CORRECT PROBLEM SITES

Closed hazardous waste disposal sites have caused serious environmental damage. In many cases it is difficult to take enforcement action because ownership may have been transferred or relinquished and legal liability and financial responsibility may be difficult to establish. Thus, the costs of cleanup or remedial measures to abate the pollution have been passed on to the taxpayer. The following examples, although a result of improper disposal practices, illustrate the potential costs involved.

Rocky Mountain Arsenal

Disposal of industrial and military wastes east of Denver, Colorado, has contaminated an aquifer (an underground layer of earth in which water accumulates) of approximately

30 square miles. EPA reported the costs to perform a comprehensive study of the problem, excluding cleanup, could be as much as $78 million.

St. Louis Park

Disposal of coal tar residues from the manufacture of creosote used for wood treating has contaminated a major aquifer in this western suburb of Minneapolis, Minnesota. To date, EPA reported the costs have totaled about $1.3 million in State and local funds and that State officials estimate the costs of remedial action to be between $20 and $200 million.

Love Canal

Disposal of chemical wastes has resulted in highly contaminated leachate entering basements of homes near a closed disposal site in Niagara Falls, New York. An EPA official said that the cost to relocate affected families, purchase homes, dig trenches to prevent the spread of leachate, and collect and treat the leachate is estimated at about $20 million and that the Federal and State governments will provide this money.

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In enacting the Resource Conservation and Recovery Act of 1976, the Congress recognized that hazardous waste treatment, storage, and disposal facilities must be maintained over the period in which they pose a threat to public health and the environment. RCRA requires such facilities to provide adequate evidence of financial responsibility, not only for the operation of the site but also to provide against any liability if waste escapes from the site. To implement this requirement, the EPA Administrator is charged with establishing standards "consistent with the degree and duration of risks associated with the treatment, storage, or disposal of specified hazardous waste".

Initial EPA draft standards required facilities to have funds available for site closure and continued monitoring and routine maintenance of closed disposal sites, but they did not require similar assurances that funds would be available for cleanup or to correct site failures should they occur. The standards covered only claims arising from injury to persons or property from release or escape of hazardous wastes to the environment.

We discussed the exclusion of provisions for cleanup and remedial action in the draft standards with EPA officials on July 11, 1978, and were told that this aspect of financial responsibility was not included in the draft. However, EPA's Office of Solid Waste is considering such provisions and is in the process of developing standards to assure that funds will be available in the event a disposal site fails.

The draft standards required the facility owner or operator to assure financial responsibility through private insurance companies or self-insurance. The minimum amount of coverage proposed by EPA for all treatment, storage, and disposal facilities was $5 million. For disposal facilities, financial responsibility was to be maintained for as long as 40 years after site closure. We learned, however, that insurance for postclosure liability required by the draft regulations may not be available.

Officials of the treatment and disposal facilities we visited told us that $5 million liability coverage for up to 40 years after closure was not available from the insurance industry. Only one large disposal company we visited had such coverage and it was for less than $5 million. A company official told us that the premium for this coverage was expensive--about $57,000 a year. We were also told that the policy was flawed since it was a claims made policy (payment is made only if the cause of the problem occurred before site closure) and could be canceled by the insurer after giving a 30-day notice.

In a December 29, 1977, letter commenting on a draft standard in which financial responsibility was to be maintained in perpetuity, the National Solid Waste Management Association said, in part, that

> "Private firms must have some means to project and manage the risks and costs of potential liability flowing from hazardous waste management operations. Whereas liability under current legal doctrines is open-ended as to amount and time, traditional insurance, bonding or other arrangements are not adequate. The public cannot assume that any company, surety or insurer will maintain in perpetuity the financial ability to cover this potential risk; nor can any private corporation reasonably be expected to create the needed new facilities if it must encumber its balance sheet with perpetual and infinite contingent liabilities for closed facilities."

To provide the needed assurances, the Association recommended the creation of an industrywide, federally administered perpetual trust fund, funded by a surcharge on hazardous waste disposal.

Officials of treatment and disposal facilities and representatives of national industry associations also generally favored a Federal trust fund to cover postclosure liability and any needed remedial work. Several believed this would not only provide assurance that unforeseen problems would be corrected but, by basing the fee on volume or a percentage of disposal cost, would be more equitable for both large and small hazardous waste disposal facilities.

On June 5, 1978, a national insurance association representative told us that the association is looking at the possibility of providing the long-term liability coverage proposed by EPA. He said that the association could not take a position on whether the insurance is available and that before a decision could be made the association needed more information on hazardous waste and its disposal.

On July 19, 1978, EPA hazardous waste officials discussed various financial responsibility options and tentatively selected a federally administered trust fund with the proviso that the aspects of financial responsibility--closure, postclosure monitoring liability during operation, and postclosure liability be examined in terms of lifetime and dollar amount limits to determine the optimum mix. As now envisioned by EPA hazardous waste officials, the fund would be administered by the Federal Government and financed from a surcharge levied on the amount of wastes disposed. The fund would be responsible for damage claims and remedial action up to a specified amount.

In discussing this new approach, the background section in the draft regulation stated, in part:

> "Unfortunately most liability policies in effect only offer protection against sudden occurrences such as explosions, pipeline ruptures or abrupt failure of containment vessels. In general hazardous waste management facilities in the United States have insurance protection against this type of occurrence. However, the critical insurance protection for liability from hazardous waste disposal is non-sudden coverage. As a rule this coverage is not readily available. Also, it is estimated that even if such coverage should become available, the premiums would be prohibitively expensive.

"Due to the uncertainties associated with long term disposal of hazardous wastes and the unavailability of non-sudden liability coverage from the private sector, the EPA has considered seeking additional legislative authority to create a Federally administered fund * * *."

Although EPA is not proposing regulations for postclosure financial responsibility until the necessary legislative authority is granted by the Congress, EPA officials told us the current thinking is that the surcharge would be the same for each ton of waste regardless of the degree or duration of the risk associated with the specific waste. Thus, a short lived waste would be assessed the same amount as a waste which could pose a threat for centuries.

CONCLUSIONS

Although past disposal practices which have resulted in damages should be eliminated when the RCRA standards are implemented, the possibility exists that even some properly designed sites may release harmful wastes into the environment. If this occurs, we believe that money should be available not only to pay claims resulting from disposal operations, but to clean up the resulting damages and to prevent further contamination. In the absence of private insurers to provide this coverage, we believe a Federal trust fund should be created by the Congress.

Recent EPA actions indicate that EPA is considering seeking the legislative authority to develop a national trust fund supported by a surcharge on hazardous waste disposal which will cover all postclosure financial responsibility. This would include liability insurance as well as the costs of remedial action. The current approach to setting the surcharge, however, is to charge a fixed dollar amount for each ton of waste disposed. While this approach may be easy to apply, we believe it would be more equitable to develop a surcharge which reflects the degree and duration of risk associated with the specific waste involved as called for under section 3004 of RCRA. One approach which might be considered is to charge a set percentage of the disposal cost.

RECOMMENDATION

We recommend that the Administrator, EPA, propose legislation to create a self-sustaining national trust fund, supported by fees assessed on the disposal of hazardous wastes, to cover all postclosure liability and any necessary remedial actions for RCRA permitted facilities to prevent continued contamination. In developing the fee schedule, an effort should be made to reflect the degree and duration of risk posed by specific wastes.

AGENCY COMMENTS

EPA intends to propose legislation to create a self-sustaining national trust fund to cover all postclosure liability and remedial actions at regulated disposal sites. The fund would be supported by fees assessed on the disposal of hazardous waste at regulated facilities. EPA does not intend that this fund be used to cover sites without disposal permits. Attempts to develop a fee schedule reflecting degree and duration of risk have not been successful, but EPA is examining alternatives to a simple, flat per ton fee for all wastes.

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