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HAZARDOUS WASTE CONTROLS IN THE UNITED STATES, 1987

David R. Andrews*

INTRODUCTION

In the space of only a decade, the control of hazardous waste has rapidly become a central concern of citizens in every part of the United States.

A series of news stories over the past few decades has given Americans a vivid picture of the perils of ignoring hazardous waste. First, there was Love Canal, the community in Niagara, New York, that had to be evacuated after it was discovered that hazardous waste buried over a 25-year period was contaminating the groundwater.

Then in 1978, the Valley of the Drums, a site in Kentucky, became national news. A noxious deposit of leaking storage barrels quickly became one of the most notorious hazardous waste sites in the United States.

The little community of Times Beach, Missouri, became the next national hazardous waste story in 1980. Oil contaminated with highly toxic dioxin tainted the soil and the water in this eastern Missouri town.

Public awareness and concern about the environmental damage we are causing to the world we live in by our day-to-day as well as by our industrial activities have become increasingly strong since the 1960s. As a result, Congress undertook legislative solutions to the escalating problem of pollution in America. Environmental law as it now exists in the United States began with the establishment of the United States Environmental Protection Agency (EPA) in 1970.

The establishment of the EPA brought together under one umbrella our air and water pollution, solid waste and hazardous substance management, noise abatement, pesticide regulation and radiation standards programs. The EPA, together with the Council on Environmental Quality and the Department of the Interior, provides the administrative structure to implement the United State's primary environmental statutes. Almost every regulatory statute contains specific provisions

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directing the agency responsible for administering the law to issue rules to carry out the statutory scheme.

The primary statutes demonstrating Congressional concern over environmental issues are the National Environmental Policy Act, the Surface Mining Control and Reclamation Act, the Federal Land Policy and Management Act, the Clean Air Act, the Safe Drinking Water Act, the Toxic Substances Control Act, the Federal Insecticide, Fungicide and Rodenticide Act, the Resource Conservation and Recovery Act, and the Comprehensive Environmental Response, Compensation, and Liability Act. Some of these statutes address environmental concerns in a broad general way, while others are extraordinarily detailed and complex. The last two of these statutes (commonly known as "RCRA" and "CERCLA") deal specifically with the problems of hazardous waste management and disposal.

As a "developed" nation, the United States has disposed our wastes, both industrial and household, into the environment for many years. We are now paying the price for this activity as the contamination of our soil, groundwater, and even our air becomes increasingly evident. As we move into the future, the United States is actively exploring new technologies and methods of reduction, recycling and treatment, and disposal of our wastes. Our two major hazardous waste statutes (RCRA and CERCLA) provide remedies for past mistakes and establish management standards to prevent future ones.

The Resource Conservation and Recovery Act (RCRA) was enacted in 1976 and was designed to be a comprehensive "cradle-to-grave" scheme for regulating all aspects of hazardous waste management on land. The act imposes specific obligations on persons who generate waste, on those who transport waste, and on those who treat, store, or dispose of waste. As originally enacted, RCRA acknowledged that land disposal was the primary approach to disposal of hazardous waste and tried to make that disposal safer.

RCRA was extensively amended by the Hazardous and Solid Waste Amendments of 1984. The amendments represented a clear shift in national policy away from land disposal and toward waste reduction, recycling, and new waste treatment methods and technologies.

In spite of the enactment of RCRA and the earlier passage of the Solid Waste Disposal Act, the government still did not appear to have adequate authority to deal with the serious problem of contamination at waste sites caused by disposal practices. Therefore, in 1980, the United States Congress enacted the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA). This act gave the govern-

ment the authority to locate and hold accountable the parties responsible for the disposal of hazardous wastes. It also provided for the cleanup of the contaminated sites using money from a \$1.6 billion trust fund established by the act; and if the responsible parties could be found, the act enabled the government to seek reimbursement from them for the costs incurred in the cleanup. CERCLA (also known as "the Superfund") was amended in 1984 after a three-year legislative process. The Superfund Amendments and Reauthorization act of 1986 (SARA) increased funding for the program to \$8.5 billion over five years. SARA also made major changes to the statute including implementation of strict cleanup standards favoring permanent remedies at waste sites, mandatory schedules for initiation of cleanup work and increased state and public involvement in the cleanup decision-making process.

These two hazardous waste laws, RCRA and CERCLA, are implemented in somewhat different ways within the political system of the United States.

The RCRA regulatory program, like the Clean Water Act's National Pollutant Discharge Elimination System program and the Clean Air Act's State Implementation Plan program, envisions substantial delegation of implementation and enforcement responsibilities from the federal to the state level. The general concept is one of setting "federal standards for state implementation."

Like most environmental regulatory statutes, RCRA, as enacted in 1976, was largely *not* "self-implementing." That is, rather than telling industry directly what it must do, Congress directed the EPA to promulgate rules by which the activities of industry would be regulated.

By contrast, CERCLA, as first passed by Congress, operated primarily to establish liabilities and obligations for cleanup of existing hazardous waste sites and did not require promulgation of regulations to be effective. The principal burden of implementing CERCLA rests with the federal government although a state may take responsibility for some or all hazardous waste cleanup activities.

RESOURCE CONSERVATION AND RECOVERY ACT

When population centers were relatively compact and produced manageable volumes of conventional waste, the disposal of such material was not a major issue in urban or environmental affairs. In recent decades, however, the tonnage and chemical complexity of the nation's waste has grown dramatically, posing a threat to air, water, and land resources, to the balance of nature, and even to human health.

The current dimensions of our hazardous waste problem are so vast that they are almost impossible to comprehend. There are more than 240,000,000 people in the United States. Try to imagine a ton of hazardous waste piled next to each person, with another ton added each and every year. By a fairly conservative estimate, hazardous waste is produced in this country at the rate of 700,000 tons per day, or 250 million tons per year.

Congress recognized the problem in 1965 and passed the Solid Waste Disposal Act to fund research and technical assistance for state and local planners. In 1970, the original legislation was enlarged and restructured in the form of the Resource Recovery Act, which promoted the adoption of sanitary landfills and encouraged a shift from mere disposal toward conservation, recycling and advanced control technology. However, mounting scientific evidence indicated that wastes generated by chemical and other industrial processes could be hazardous. That persuaded Congress first to strengthen existing regulations and then, in 1976, to pass the Resource Conservation and Recovery Act, which amended the Solid Waste Disposal Act.

Under RCRA, EPA set standards for generators and transporters of hazardous waste and for owners and operators of hazardous waste treatment, storage, and disposal facilities. This cradle-to-grave system has identified 52,864 waste generators, 12,000 transporters and about 5,000 treatment, storage, and disposal facilities, and has brought a greater degree of order to the management of large scale wastes.

Congress reauthorized RCRA late in 1984, imposing new and far-reaching requirements on a vastly larger regulated community, notably the 175,000 enterprises that generate small amounts of waste per month (between 220 and 2,200 pounds) and those that own or operate the approximately one million existing underground storage tanks. The new RCRA tightened controls for land disposal and banned some wastes from landfills altogether. Others are to be subject to pretreatment requirements. Burners and blenders of fuels derived from hazardous waste are subject to EPA regulation. The new RCRA represented a clear shift in national policy away from land disposal and toward waste reduction, recycling, and new treatments for flammable, reactive, corrosive, and toxic wastes that now threaten air quality and vital surface and groundwater resources.

The amended RCRA embraces more than 70 new provisions and 58 action deadlines. For example, the act requires EPA to establish a program to control underground tanks containing petroleum and other designated hazardous substances.

The RCRA amendments required EPA to issue regulations by February 1987 for petroleum tanks. By August 1987, EPA had to issue regulations for new tanks containing chemical products listed as hazardous under CERCLA, and by August 1988 EPA had to issue regulations for existing tanks containing such chemicals. Installation of certain underground tanks is prohibited. The Underground Storage Tank (UST) program may require EPA to inspect and regulate a million tanks nationwide. New statutory controls may be imposed on as many as 100,000 new tanks installed each year.

The new RCRA bans the land disposal of hazardous wastes unless EPA finds they will not endanger human health and the environment. Landfilling of bulk or noncontainerized liquids is now prohibited. EPA is required to promulgate regulations to minimize the landfilling of containerized liquid hazardous waste.

No bulk liquids may be disposed of in salt domes. The use of oil contaminated with hazardous waste as a dust suppressant and injection of hazardous wastes into or above an underground source of drinking water are both outlawed.

The new RCRA further requires those who produce, burn, distribute, or market fuel derived from hazardous wastes to notify EPA of their operations. EPA must then issue recordkeeping requirements and technical standards.

In addition, anyone who plans to operate a waste management facility must meet minimum technological requirements, including double liners, leachate-collection systems and extensive ground water monitoring. Facility owners and operators are required by the new law to take corrective action if any part of a RCRA facility not on a permanent control plan suffers an uncontrolled release. Such action can now be accomplished through new permit requirements or legal remedies.

The amendments also strengthen federal controls over the disposal of nonhazardous municipal wastes; federal enforcement authority can be applied in cases where states do not mandate a permit program for municipal landfills. Finally, RCRA strengthens federal enforcement by expanding criminal offenses and raising maximum penalties. Any citizen can file an "imminent hazard" lawsuit, and EPA is authorized to issue an administrative order to correct any release of hazardous waste from a facility that is or was subject to temporary permit requirements.

One of the purposes of the 1984 RCRA amendments was protection of precious groundwater supplies from contamination by seepage from the land surface. Major parts of regulations governing small quantity generators and underground

storage tanks are designed to prevent such damage to aquifers. The law is also intended to control air pollution resulting from combustion of hazardous waste mixed with various fuels and the evaporation of volatile organic materials from landfills and storage depots.

Finally, RCRA is designed to create guidelines for prudent hazardous waste management and disposal in the present and in the future. It is to provide the United States with its first tracking system for regulation of hazardous waste from generation to disposal. If fully successful, RCRA should someday eliminate the need for the CERCLA program.

COMPREHENSIVE ENVIRONMENTAL RESPONSE, COMPENSATION, AND LIABILITY ACT

CERCLA was the first major response of the United States to past hazardous waste disposal problems on a national level.

Most CERCLA sites are the result of chemical and petroleum industry activities. Others, once municipal landfills, became hazardous as a result of accumulated pesticides, cleaning solvents, and other chemical products discarded in the household trash. Many sites are the result of transportation spills or other accidents, and others are the final resting place of persistent toxic pollutants contained in industrial wastewater discharges or air pollution emissions.

Whatever their source, it is the responsibility of CERCLA to ensure that the hazardous substances abandoned at these sites do not imperil human health or the environment. It is a truly massive undertaking, and one of great importance to the future of the United States.

CERCLA was enacted with several key objectives:

- to develop a comprehensive program to establish priorities for cleaning up the worst existing hazardous waste sites;
- to make responsible parties pay for those cleanups wherever possible;
- to establish a \$1.6 billion Hazardous Waste Trust Fund for the twofold purpose of performing remedial cleanups (in cases where responsible parties could not be held accountable), and responding to emergency situations involving hazardous substances; and
- to advance scientific and technological capabilities in all aspects of hazardous waste management, treatment, and disposal.

CERCLA is funded with taxes on crude oil and 42 different commercial chemicals. State governments pay 10 percent of the cost of CERCLA work at privately owned sites and 50 percent at those that are publicly owned.

CERCLA does not establish as complex a regulatory scheme as that developed under RCRA. The statute primarily establishes: (1) principles governing liability for waste management practices, (2) a mechanism for governmental funding of cleanup efforts when private parties have not undertaken, or cannot be forced to undertake, cleanups, and (3) requirements for reporting releases of hazardous substances to the environment.

The principal burden of implementing CERCLA rests upon the federal government. The act directs the federal government to revise the National Contingency Plan (originally developed under the Clean Water Act to deal with spills into navigable waters) to accommodate CERCLA responses to spills and other releases onto land. Although Congress directed that this activity be completed by June 1981, the final National Contingency Plan was not published until July 1982.

The federal government also has the primary responsibility for expending monies from the multimillion dollar CERCLA trust fund and for seeking reimbursement from potentially liable parties. The job of responding to hazardous substance spills and other releases also falls initially on the federal government through its National Response Center.

Nonetheless, the states also play an important role under CERCLA. For example, under the National Contingency Plan, states may take principal responsibility for undertaking hazardous waste site cleanup activities. Furthermore, each state must assure payment of ten percent of the funding for CERCLA "remedial" actions (permanent cleanups) within its jurisdiction before more than \$1 million of federal money may be spent in that state. In cases involving past hazardous waste disposal on land owned by a political subdivision of the state (a municipality, for example) that state's contribution requirement increases to 50 percent. States also must assure future maintenance of shortterm removal or more permanent remedial actions, and they must assure the availability of a hazardous waste disposal facility to receive hazardous wastes as they are removed from a dump site.

The most significant element of CERCLA is its attempt to codify the principle that companies are now liable for damages resulting from past waste management practices regardless of whether the problems were foreseeable, the company acted in good faith, or the company used state-of-the-art waste management practices. Thus, the statute provides that, subject

only to limited defenses, *current and former* site owners and operators, transporters, and some generators are responsible for cleanup costs and damages to natural resources resulting from hazardous substance spills and other releases. (They are not, however, subject to personal injury damages.) The statute defines the following as responsible parties:

- the owner and operator of a vessel or facility;
- any person who at the time of disposal of a hazardous substance owned or operated the facility at which the substance was disposed;
- any person who arranged for disposal or treatment of hazardous waste, or arranged with a transporter for transportation for disposal or treatment by any other party at a facility owned or operated by any other party (this category generally includes the waste generator); and
- any person who accepted any hazardous substance for transport to disposal or treatment facilities selected by such person, from which there is a release, or a threatened release.

The defenses of liability are limited to acts of god, acts of war, and acts or omissions of a third party. The "third party defense" is further limited to apply only in situations where the third party involved is not now and has not been an employee or agent of the defendant or one whose act or omission occurred in connection with a contractual relationship with the defendant, and where the defendant can establish that he exercised due care with respect to the facility and took precautions against all foreseeable acts and omissions. These, of course, are extraordinarily broad provisions, and were intended to be so.

Congress has recently amended CERCLA with the enactment of the Superfund Amendments and Reauthorization Act of 1986 (SARA). SARA raises the amount of money available for waste site cleanup to \$8.5 billion, a fivefold increase from the original 1980 law. SARA makes other major changes to the law: It adds strict cleanup standards that strongly favor permanent remedies at waste sites; it gives the EPA strong control over the process of settling with responsible parties; it provides a mandatory schedule for studies and initiation of cleanup work; it provides for individual assessments of the potential threat to human health posed by each waste site; and it calls for increased state and public involvement in the cleanup decisionmaking process, including the right of citizens to file lawsuits for violation of the law.

The SARA amendments retain the concept of strict, joint and several liability, and they formalize many EPA enforcement practices that evolved over the first five years of the law.

SARA also contains separate provisions not related to the cleanup of waste sites *per se*. The "community right-to-know" provision requires industries that produce, use, or store hazardous chemicals or substances to report the presence of these substances to community authorities, and to report releases, both routine and unauthorized, to the EPA. It also requires that communities improve their planning and response mechanisms for major chemical accidents.

A second provision of the revised CERCLA amends RCRA underground storage tank regulations to require that owners of such tanks be financially responsible for cleaning up leaks and compensating third parties for property damage and bodily harm. A trust fund is also established to pay for emergency cleanups where a responsible owner or operator of the leaking tank cannot be found.

SUMMARY

Although the statutory and regulatory mechanisms set in place by Congress to manage the nation's hazardous waste problems are complex, they are founded on a few basic principles:

- The primary responsibility for setting environmental protection standards rests with the federal government (although some implementation of those standards may be delegated to state and community levels).
- Persons who release hazardous substances into the environment, either intentionally or accidentally, must be held liable for and must remedy the effects of those releases.
- Hazardous wastes must be dealt with in a comprehensive "cradle-to-grave" manner, and the government must provide authority to regulate manufacturers, transporters, users, storers, and disposers of hazardous substances.
- We must continue to look for new technologies for treating, controlling, and reusing hazardous wastes.

Issues that have not been resolved by, and continue to plague, current policy include the economic tradeoffs implicit in the implementation of environmental controls. Although the administrative rulemaking process entails an assessment of the economic impact of each regulatory action, the battle is waged on an industry-by-industry, case-by-case basis. Further, efforts by the federal government to educate and involve the

public concerning the dangers of hazardous waste have not been extensive. We face the shrinking of natural resources we once thought of as limitless. The question of resource usage is hotly debated at all levels of government.

Obviously, the U.S. faces situations like those in China. However, there are differences in the histories, resources, and governing structures of our two countries that influence the ways in which we approach the regulation, management, and disposal of hazardous waste. For example, the United States is an industrially developed nation, while China is in the midst of a period of vast economic and industrial growth. Consequently, the United States faces the problem of serious industrial pollution that is the result of many years of handling and disposal of hazardous wastes. Contaminated properties have frequently had many different owners and users who cumulatively have contributed to our current environmental conditions. In the development of United States environmental law, it has been necessary to establish a mechanism for remedying past mistakes and putting cleanup liability onto all potentially responsible parties. CERCLA was enacted to fill this need. By contrast, heavy industrial pollution in China has a briefer, less complex history. So, while the U.S. works to correct its past environmental mistakes, China focuses on existing and future polluters.

Both of our countries must deal with issues such as the economic impacts of environmental controls and the balancing of our resource priorities. There *are* similarities in our approaches to management of hazardous waste based primarily on the recognition by both countries that environmental planning and individual responsibility for the safekeeping of the environment are the keystones of an effective national environmental policy.