

BY THE COMPTROLLER GENERAL  
To The Chairman, Subcommittee On  
Investigations And Oversight  
Committee On Public Works And Transportation  
House Of Representatives  
OF THE UNITED STATES

Illegal Disposal Of  
Hazardous Waste:  
Difficult To Detect  
Or Deter

The treatment, storage, or disposal of hazardous wastes at any place other than a federal or state-approved facility is illegal. Penalties for violations include fines and imprisonment.

GAO reviewed efforts to detect or deter illegal disposals of hazardous wastes in California, Illinois, Massachusetts, and New Jersey. This report provides information on the extent to which (1) the Environmental Protection Agency (EPA) and these states have knowledge of illegal disposals, (2) regulatory controls have been effective in detecting or deterring such activity, and (3) enforcement actions have been taken against violators.

GAO also reviewed several methods not covered in the federal regulations which EPA or the four states have considered or used to detect or deter illegal disposals. GAO concluded that additional regulatory measures may increase deterrence but may not detect the determined violator. The use of awareness and public informant programs appears better suited for detecting such violators.

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B-217451

The Honorable James L. Oberstar  
Chairman, Subcommittee on Investigations  
and Oversight  
Committee on Public Works and  
Transportation  
House of Representatives

Dear Mr. Chairman:

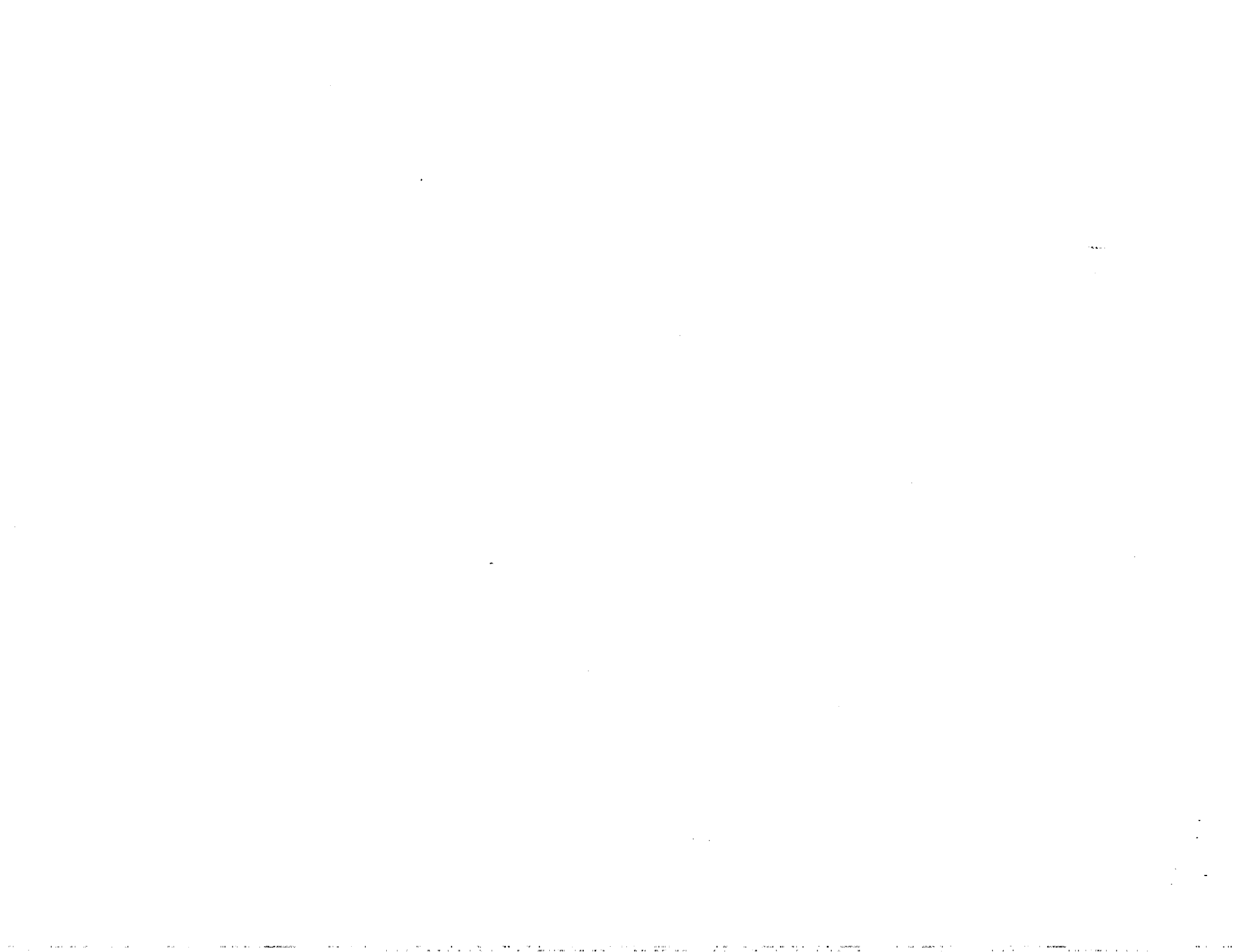
In his letter of June 8, 1983, the previous Chairman asked that we examine the problem of illegal hazardous waste disposal. This report addresses the issues raised in the letter.

As arranged with your office, unless you publicly announce its contents earlier, we plan no further distribution of this report until 30 days from the date of this letter. At that time, we will send copies to interested parties and make copies available to others upon request.

Sincerely yours,

A handwritten signature in black ink that reads "Charles A. Bowsher".

Comptroller General  
of the United States



COMPTROLLER GENERAL'S  
REPORT TO THE  
SUBCOMMITTEE ON INVESTIGATIONS  
AND OVERSIGHT  
COMMITTEE ON PUBLIC WORKS AND  
TRANSPORTATION  
HOUSE OF REPRESENTATIVES

ILLEGAL DISPOSAL OF  
HAZARDOUS WASTE:  
DIFFICULT TO DETECT  
OR DETER

D I G E S T

In 1976 the Congress enacted the Resource Conservation and Recovery Act to protect the public health and environment from the dangers posed by hazardous wastes. As implemented by the Environmental Protection Agency (EPA), the act regulates about 66,000 firms or individuals that generate, transport, treat, store, and/or dispose of hazardous wastes. For 1981, the latest year for which information was available as of January 1985, EPA estimated that about 264 million metric tons of hazardous wastes were generated.

The act requires EPA to establish standards for the safe treatment, storage, and disposal of hazardous wastes at EPA- or state-approved facilities. It also requires that a hazardous waste tracking system (the manifest system) be implemented to assure that all hazardous wastes reach an approved facility. Under the act, the treatment, storage, or disposal of hazardous wastes at any place other than an authorized facility is illegal. Penalties for violations include fines and imprisonment.

Concerned about the adequacy of the laws and regulations directed at illegal waste disposal,<sup>1</sup> particularly those relating to the transportation of wastes, the Chairman of the Subcommittee on Investigations and Oversight, House Committee on Public Works and Transportation, requested that GAO examine this issue. As agreed with the Chairman's office,

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<sup>1</sup>"Illegal disposal" is used in a broad context which includes illegal storage as well.

GAO's review focused on illegal waste disposal activities in the states of California, Illinois, Massachusetts, and New Jersey and was directed at determining the extent to which (1) information on illegal disposals is available, (2) EPA and states have identified hazardous waste generators as well as the types and quantities of waste they produce, (3) the manifest system detects illegal disposals, (4) inspections of hazardous waste generators and transporters have detected illegal disposals, (5) enforcement actions have been taken against those found illegally disposing of hazardous wastes, and (6) other methods not covered in federal regulations (either used or considered by EPA or the states) have detected or have the potential to detect illegal disposals.

EXTENT OF ILLEGAL  
DISPOSALS IS UNKNOWN

Although officials in the four states reviewed and EPA agreed that illegal disposals are a problem, they did not know their extent or cost. The four states provided GAO with information on 36 enforcement cases<sup>2</sup> in which illegal disposal had occurred. From December 1980 through fiscal year 1983, the latest information available as of January 1985, at least \$700,000 in federal funds has been used to clean up wastes illegally disposed of. (See pp. 9 to 13.)

IDENTIFYING ALL GENERATORS AND  
WASTES THEY PRODUCE IS DIFFICULT

EPA and the states cannot make sure that all hazardous waste generators dispose of their wastes at approved facilities because they do not know the identity of all of the generators and do not have complete data on the

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<sup>2</sup>Because enforcement cases in California are handled primarily by local government, GAO agreed with the Chairman's office to limit its review of specific cases in California to those handled by Los Angeles County.

types and quantities of waste produced. Although most generators, particularly the larger ones (generally those that produce or accumulate 1,000 kilograms or more per month), appear to have been identified and are operating within the regulatory system established by EPA and the states, some are not and illegally store or dispose of their hazardous wastes.

Both EPA and state officials agreed that there are some generators operating outside regulatory controls but said that identifying them all is difficult. EPA attempted to identify those generators that were required to report their identity but who had not done so. It found relatively few such generators and it concluded that further searching was not warranted. Environmental officials in the four states told GAO that almost all generators producing large quantities of waste have been identified but they were less sure about the more numerous, smaller generators currently controlled only under state regulation. Recently enacted legislation requires EPA, by March 1986, to also regulate these smaller generators. (See pp. 14 to 24.)

**MANIFEST SYSTEM MAY DETER BUT  
HAS NOT DETECTED ILLEGAL DISPOSALS**

For wastes transported from the place of generation, a manifest system is an integral part of the controls established by the act for assuring that transporters deliver wastes to an approved facility. Manifest regulations require generators to document each shipment of hazardous waste. Copies of the manifest are to go with the shipment to the approved facility, and the facility is to return a copy to the generator acknowledging receipt of the waste. When the generator cannot determine that the waste reached the designated facility, it is to send an exception report to EPA or an EPA-authorized state for investigation. Depending on the state reviewed, generators typically prepared between 24,000 and 60,000 manifests each year.

Although the manifest system may deter illegal disposals by transporters, the four states reviewed could not tell GAO of any illegal

disposal cases identified through generator manifest exception reports. One reason may be that the manifest system cannot disclose instances where forgery occurred. Nine of the 36 state or county cases of illegal disposal that GAO reviewed involved transporters. In two of the nine cases, the enforcement files showed that the transporters had forged the manifest to indicate that the designated disposal facility had received the wastes. The files showed that the transporters then illegally disposed of the wastes and avoided paying a fee to the disposal facility. In one of these cases the transporter was convicted of forgery and illegal disposal, and in the other case enforcement action had not been completed. Information on the amount of the disposal fees was not available in the case files, but GAO noted in another case that the disposal fee would have been \$7,000. (See pp. 32 to 36.)

In the other seven cases involving transporters, information was not available in the files to determine why the manifests did not detect the illegal disposals. State officials, however, expressed several views as to why the manifest system may not be detecting illegal disposals, including that (1) generators may not be matching manifests, (2) generators may be confused about exception report requirements, and (3) state followup on exceptions may not be thorough. (See pp. 25 to 31.)

GENERATOR OR TRANSPORTER INSPECTIONS  
ARE NOT DESIGNED TO DETECT ILLEGAL  
STORAGE OR DISPOSALS

Like the manifest system, routine federal or state generator/transporter inspections during the period covered by GAO's review had not detected or led to the detection of illegal disposals in the four states. These inspections are not designed to detect illegal disposals; their primary purpose is to determine overall compliance with hazardous waste requirements, such as packaging and labeling standards for waste shipments. Detection of illegal disposals during such inspections is difficult because there is usually a lack of evidence present to determine that illegal disposal had taken place. Also, those



illegally storing or disposing of hazardous wastes have not always been identified and therefore are not subject to inspection. For example, the enforcement case files that GAO reviewed showed that 19 of the 27 generators caught illegally disposing of hazardous wastes would not have been inspected because they had not, as required, identified themselves to federal or state agencies.

ILLEGAL DISPOSAL CASES  
ARE BEING ENFORCED  
AND PENALTIES ASSESSED

In 34 of the 36 enforcement cases GAO reviewed, information supplied by an employee of the firm involved or other concerned persons (informants), rather than the regulatory controls discussed above, has been instrumental in the states' success in detecting illegal disposals. Special investigative units investigated and/or prosecuted most of these cases. The four states have generally succeeded in obtaining civil or criminal penalties and/or fines for those charged. Legal proceedings were completed in 28 of the 36 enforcement cases GAO analyzed, and the states had obtained a favorable decision in each of these cases. Fines imposed ranged from \$250 to \$100,000, and prison sentences ranged from 20 days to 7 years. State officials pointed out that fines and sentences do serve as a deterrent. (See pp. 37 to 42 and 51 and 52.)

ADDITIONAL METHODS FOR  
DETECTING OR DETERRING  
ILLEGAL STORAGE OR DISPOSALS

GAO identified several methods not covered in the federal regulations that have been used or considered by EPA or the four states to detect or deter illegal hazardous waste disposals. These methods include regulations involving additional checks on the manifest system to detect forgeries and revocation of licenses for transporters convicted of illegal disposals. They also include non-regulatory measures discussed earlier such as institutional awareness and public informant programs and the use of special investigative units.

GAO could not determine whether the benefits outweigh the costs of implementing these additional methods because the extent of the illegal disposal problem is unknown. Accordingly, GAO makes no recommendations regarding the use of these additional measures. GAO concludes, however, on the basis of the 36 cases it reviewed and discussions with EPA and state officials, that while additional regulatory measures may increase deterrence, they may not detect those determined to illegally dispose of their wastes. Awareness/informant programs and dedicated investigative units seem better suited for detecting and prosecuting such violators. As a result, GAO believes that a combination of regulatory and non-regulatory approaches is necessary to achieve a balanced enforcement program of effective deterrence and detection. (See pp. 43 to 54.)

#### AGENCY COMMENTS

EPA, the Department of Transportation, and California provided written comments on a draft of this report. These comments are included in appendixes II, III, and IV, respectively. EPA did not comment on the report's overall message or conclusions but did provide clarifying or additional information which has been added to the report where appropriate. Transportation had no suggested changes. California agreed with the report's major conclusions. Illinois and Massachusetts orally indicated that they had no comments after reviewing the draft. New Jersey orally indicated agreement with the report's overall message and conclusions.

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#### ABBREVIATIONS

BMCS	Bureau of Motor Carrier Safety
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act
EPA	Environmental Protection Agency
GAO	General Accounting Office
HMTA	Hazardous Materials Transportation Act
RCRA	Resource Conservation and Recovery Act
TSD	treatment, storage, or disposal facility



## CHAPTER 1

### INTRODUCTION

In 1976, the Congress enacted the Resource Conservation and Recovery Act (RCRA) as amended (42 U.S.C. §6901), because of concern about the danger to public health and the environment posed by hazardous wastes. The basic thrust of the hazardous waste management provisions of this act was to establish standards for the safe treatment,<sup>1</sup> storage, and disposal of hazardous waste at approved facilities either at the place of generation or elsewhere, and to establish a "cradle-to-grave" tracking system to assure that hazardous wastes reach approved facilities.

Under the act, the treatment, storage, or disposal of hazardous wastes at any place other than an authorized facility is illegal and violators are subject to civil and criminal penalties.<sup>2</sup> A violator may be liable for civil penalties of up to \$25,000 per day of continued noncompliance. Persons convicted of knowingly violating the act are subject to criminal penalties of up to \$50,000 for each day of violation and imprisonment for up to 5 years. Stiffer penalties are provided for persons who knowingly put others in danger by their actions. States authorized by the Environmental Protection Agency (EPA) to administer their own hazardous waste programs may have additional but no less stringent penalties.

#### MOST HAZARDOUS WASTES ARE TREATED STORED, OR DISPOSED OF IN GENERATOR ON-SITE FACILITIES

In total about 66,000 generators, transporters, and treatment, storage, and disposal (TSD) facilities handle hazardous waste, and most wastes are handled by generators on their own premises. According to an EPA survey report,<sup>3</sup> generators covered by federal hazardous waste regulations produced about

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<sup>1</sup>As defined by EPA, treatment briefly means any methods, technique, or process, including neutralization, designed to change the physical, chemical, or biological character or composition of any hazardous waste.

<sup>2</sup>Throughout this report we use the term "illegal disposal" in a broad context meaning storage or disposal at unauthorized locations.

<sup>3</sup>National Survey of Hazardous Waste Generators and Treatment Storage and Disposal Facilities Regulated Under RCRA in 1981, Apr. 20, 1984, Westat, Inc., under EPA contract No. 68-01-6861 and subcontract EPA 33-01.

264 million metric tons of hazardous wastes during 1981. EPA's survey also found that while most generators (84 percent) shipped some or all of their hazardous wastes off-site for treatment, storage, or disposal, most hazardous wastes (96 percent) were handled on-site. The survey report attributed this phenomenon to the fact that larger generators tend to manage their wastes on-site, while the more numerous smaller generators ship their wastes to commercial (off-site) facilities for treatment, storage, or disposal. As of December 1984, EPA records showed that there were 48,875 hazardous waste generators, 4,898 on-site and off-site TSD facilities, and 12,300 transporters.

#### HAZARDOUS WASTE PROGRAM ADMINISTERED PRIMARILY BY STATES UNDER RCRA GRANTS

RCRA allows EPA to authorize states to administer their own hazardous waste programs. Under the act, states that have a program substantially similar to the federal program can obtain interim authorization from EPA to administer their own programs for 2 years while working toward final program authorization. As of January 1985, EPA had granted 14 states final authorization and 38 states or territories partial or full interim authorization to administer their own hazardous waste programs. Most of the states without either interim or final authorization are carrying out generator and TSD facility inspections under written agreements with EPA, although EPA retains overall responsibility.

RCRA authorizes grants to states to develop and administer their hazardous waste management programs. States received \$26.7 million in RCRA grants to administer their fiscal year 1981 programs and were provided \$42.6 million, \$44 million, and \$42.5 million to conduct their fiscal years 1982, 1983, and 1984 activities, respectively.

#### THE RCRA HAZARDOUS WASTE REGULATORY STANDARDS AND TRACKING SYSTEM

RCRA established a regulatory framework for controlling hazardous waste treatment, storage, and disposal. RCRA requires hazardous waste generators to treat, store, or dispose of their wastes at approved facilities either on-site at the place of generation or at off-site disposal facilities. The act also requires all hazardous waste handlers--generators; transporters; and treatment, storage, and disposal facilities--to abide by performance and reporting standards (established by EPA) and subjects all hazardous waste handlers to inspections and enforcement actions by EPA or by EPA-authorized states.

The regulations that EPA issued to implement RCRA provide for monitoring hazardous wastes from point of generation, through storage and transportation, to the place of final treatment or disposal. These regulations include standards for



recordkeeping and reporting. Together these requirements are designed to provide a hazardous waste "cradle-to-grave" tracking system. They are intended to provide information on what hazardous wastes were produced; what quantities were produced; who produced them; who treated, stored, or disposed of them; and, if applicable, who transported them.

A key element of the RCRA tracking system is a shipping document called the hazardous waste manifest. The hazardous waste management provisions of the act, in part, required EPA to establish regulations covering the use of a manifest system and any other reasonable means necessary to assure that all hazardous wastes reach an approved TSD facility.

The Congress intended the manifest to serve as a check against illegal disposal. EPA implemented the manifest system in November 1980, requiring generators to prepare a manifest document for each shipment of hazardous waste showing the types and quantities shipped. EPA's system provides for copies of the manifest to accompany each shipment to the approved TSD facility; and that facility is to return a copy to the generator acknowledging receipt of the wastes. If the generator does not receive a copy of the manifest back from the TSD facility within 45 days, it is to send an exception report to EPA or an EPA-authorized state for investigation.

To operate within the regulatory system, generators must identify themselves (to EPA or an EPA-authorized state) as hazardous waste generators and abide by EPA's standards. As part of the identification or notification process, generators receive an EPA identification number. They then must either (1) obtain a permit from EPA or an EPA-authorized state to treat, store, or dispose of their wastes on their own premises and abide by TSD facility standards, including reporting standards on the disposition of waste produced, or (2) within 90 days ship their wastes to an approved off-site TSD facility using the manifest system.

#### SMALL-QUANTITY GENERATOR EXEMPTION

When implementing RCRA, EPA limited federal regulation on the basis of the quantity of hazardous wastes produced by a generator. Generally, EPA applied federal regulations to generators that produce or accumulate 1,000 kilograms<sup>4</sup> or more of

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<sup>4</sup>Exceptions to this are generators of acutely hazardous waste, listed in EPA regulations 40 CFR §261.33(e), which have an exemption limit of 1 kilogram (100 kilograms if it is a residue resulting from the cleanup of a spill of acutely hazardous waste).

hazardous wastes in any given calendar month, transporters that haul hazardous wastes from such generators, and facilities that treat, store, or dispose of the wastes. The 1,000 kilogram threshold is called the small-quantity generator exemption because any generator that does not produce or accumulate 1,000 kilograms or more of wastes per month is exempt from federal regulation. Further, transporters and TSD facilities that receive wastes only from small-quantity generators are exempt from federal regulations.

New legislation will expand regulatory coverage to hazardous waste generators producing less than 1,000 kilograms. The Hazardous and Solid Waste Amendments of 1984 direct EPA to regulate hazardous waste generators that produce from 100 to 1,000 kilograms per calendar month starting not later than March 1986. Although the amendments allow EPA to vary the standards for such small-quantity generators (from standards for those producing 1,000 kilograms or more), it requires that they prepare a manifest when shipping wastes off-site and that they obtain a permit when storing or disposing of wastes on-site.

EPA has authorized states to adopt more stringent requirements than those imposed by federal regulation. We noted in our September 1983 report on small-quantity generators<sup>5</sup> that 17 states had set lower small-quantity exemption levels than the federal exemption of generators of less than 1,000 kilograms.

#### HAZARDOUS WASTES ARE SUBJECT TO OTHER TRANSPORTATION REGULATION

RCRA required EPA to coordinate with the Secretary of Transportation with respect to the transportation of hazardous wastes. As a result of this coordination, EPA and the Department of Transportation agreed that hazardous wastes are subject during transportation to the same safety requirements as hazardous materials.<sup>6</sup> These regulations were established by the Hazardous Material Transportation Act (HMTA). HMTA gives the Secretary of Transportation regulatory and enforcement authority to protect the nation from risk to life and property inherent in hazardous materials transportation.

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<sup>5</sup>Information on Disposal Practices of Generators of Small Quantities of Hazardous Waste (GAO/RCED-83-200, Sept. 23, 1983).

<sup>6</sup>Hazardous material is generally a hazardous substance, such as gasoline, that has a commercial value, whereas hazardous waste is generally a hazardous substance that has no value.

HMTA safety requirements for the transportation of hazardous materials on public highways deal with the safety of the vehicle and container and driver qualifications. Hazardous waste transporters are inspected by the Department of Transportation's Bureau of Motor Carrier Safety for compliance with HMTA requirements.

#### OBJECTIVES, SCOPE, AND METHODOLOGY

Our objective was to determine the extent to which federal and state laws and regulations assure that all hazardous wastes are treated, stored, or disposed of at approved facilities. Our review was requested in a June 8, 1983, letter from the Chairman, Subcommittee on Investigations and Oversight, House Committee on Public Works and Transportation. The Chairman stated that weaknesses or deficiencies in federal and state laws regulating the transportation of hazardous waste, and the ways such laws are implemented, may be one of the major causes of improper and illegal toxic waste disposal. In accordance with the letter, as modified by subsequent agreements with the Chairman's office, our specific objectives were to determine

- the extent of EPA and state knowledge about the illegal disposals;
- the extent of EPA and state efforts to identify hazardous waste generators that should be complying with applicable regulations, and the types and quantities of waste they produce;
- the adequacy of the manifest system in detecting illegal disposals;
- the extent to which inspections of hazardous waste generators and transporters conducted under authorities contained in RCRA or HMTA have been successful in detecting illegal disposals;
- the extent of enforcement actions taken against those who illegally store or dispose of hazardous wastes; and
- the extent to which additional methods not covered in federal regulations either in use or considered by EPA or the states have detected or have the potential to detect illegal storage or disposal.

To accomplish these objectives, we performed work at EPA headquarters and the Department of Transportation headquarters in Washington, D.C.; EPA Regions I (Boston, Massachusetts), V (Chicago, Illinois), and IX (San Francisco, California); Bureau of Motor Carrier Safety offices in California, Illinois, and Massachusetts; and, as requested by the Subcommittee, the state

environmental agencies in California, Illinois, Massachusetts, and New Jersey. These four states provide geographical distribution; have about one-fourth of the nation's hazardous waste generators, transporters, and TSD facilities; and generate about one-fourth of the nation's hazardous wastes.<sup>7</sup> Also, California and Illinois implemented their own manifest system prior to the federal manifest requirement. We also visited the largest state field office in terms of the number of generators and TSD facilities for each of the state environmental agencies. Those field offices are in the southern region of California, the northern region of Illinois, the central region of New Jersey, and the northeastern region of Massachusetts. California's southern region's field office conducted only a small portion of the state's hazardous waste generator inspections. Therefore, to obtain better coverage, we also visited the north coast region's field office. In addition we visited the Los Angeles County Department of Health, which conducts generator hazardous waste inspections under an agreement with the California Department of Health Services.

To help accomplish our objectives, we asked the four states<sup>8</sup> to identify illegal disposal incidents occurring from December 1980 through December 1983 for which charges were brought during that period. We chose December 1980 as the starting point because the federal manifest requirement became effective on November 19, 1980. We selected for review those cases concerning illegal disposals<sup>9</sup> in which the hazardous wastes were not disposed of at an approved TSD facility. For example, we included cases where the generator illegally stored or disposed of its waste on its own premises without a permit, and we excluded cases where an approved TSD facility improperly stored or disposed of hazardous waste it was authorized to accept. Violations for leaking drums at an approved facility for example, would not be included. In total, 36 enforcement

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<sup>7</sup>All four states administer their own RCRA programs under interim authorization.

<sup>8</sup>In California, legal action against those who dispose of hazardous wastes illegally is taken primarily by local government, and case files are maintained locally. Because of the time that would be involved in covering the state, we agreed with the Chairman's office to review only those cases where Los Angeles County was involved in the investigation or identification of the person or persons illegally storing or disposing of hazardous wastes.

<sup>9</sup>Illegal under state hazardous waste law, which may cover more than federal law.

cases met our overall criteria. Of these 36 cases, 27 involved charges against generators and 9 involved charges against transporters. For each case we tried to determine whether the illegal disposal was discovered through the regulatory system and if not, why not, though this information was not always available. (See app. I for a list of the enforcement cases analyzed.)

To obtain information on the extent of the illegal disposal problems, in addition to the 36 enforcement cases, we interviewed hazardous waste officials at EPA headquarters, EPA Regions I, V, and IX, and in California, Illinois, New Jersey, and Massachusetts. In addition, we reviewed published studies on the extent of the illegal disposal problem, as well as applicable congressional hearing records. To develop information on the potential cost of cleaning up such disposals, we reviewed available EPA and state documents related to cleanup efforts at abandoned hazardous waste sites where illegal disposals were involved.

To obtain information on EPA and state identification of hazardous waste generators and the types and quantities of waste produced, we determined whether the generators charged in the 27 generator enforcement cases had EPA identification numbers. We also reviewed EPA's effort to develop, verify, and update its list of regulated generators. Further, we reviewed California, Illinois, New Jersey, and Massachusetts efforts to verify EPA's list of generators or develop a list of generators for their own purposes. Each of these states controls wastes or classes of generators that are exempt from federal regulation, and we could not readily distinguish their efforts to identify state-controlled wastes or generators from their efforts to identify those controlled under federal regulations. Thus, we obtained information on state efforts to identify generators subject to either federal or state regulation. Because California encourages its counties to identify and regulate hazardous waste generators, we also reviewed Los Angeles County's effort in this area. Finally, we reviewed state information on generators' responses to state reporting requirements on the types and quantities of waste produced.

To determine the effectiveness of the manifest system in detecting illegal disposals, we analyzed the nine transporter enforcement cases. We also reviewed EPA's regulations governing manifest requirements and interviewed hazardous waste officials in each of the four states we visited. When state officials indicated that the manifests were not effective in detecting illegal disposals, we also obtained their views on the reasons why not. In addition, we identified each state's procedures for following up on manifest-exception reports from generators.

To determine the extent to which inspections of hazardous waste generators and transporters have been successful in

detecting illegal disposals, we reviewed the 36 generator and transporter enforcement cases. In addition, we obtained information on inspection targets in the four states we visited and ascertained state performance in meeting the targets. We reviewed the content of the inspections conducted by the state environmental agencies as well as those conducted by the Department of Transportation's Bureau of Motor Carrier Safety and state police agencies for compliance with Hazardous Materials Transportation Act requirements. Finally we interviewed EPA, state, and Bureau of Motor Carrier Safety officials in the four states we visited to discuss the scope of inspections and determine if inspections had identified any illegal disposals of hazardous wastes. In each of the state field offices we visited, we interviewed at least one inspector.

To determine the extent of enforcement against illegal disposers, we obtained information on legal actions concerning the 36 enforcement cases. We also obtained summary information on enforcement actions taken by EPA. Because detailed information on these cases is located in different EPA and Department of Justice offices throughout the country, case analyses presented in this report include only state enforcement cases.

To determine the extent to which EPA or the states have considered or implemented additional methods not covered in federal regulations to detect illegal disposals, we interviewed EPA and state officials in the four states we visited. Based for the most part on our observations of the effectiveness of controls in use, we analyzed each of the controls identified, such as transporter licensing, to determine some of their advantages and disadvantages.

Our work was conducted from July 1983 through March 1984 and was performed in accordance with generally accepted government auditing standards.

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Chapter 2 discusses what is known about the extent of the illegal disposal problem. Chapter 3 addresses how hazardous waste generators may avoid regulation by operating outside the system of regulatory controls. Chapter 4 discusses how even when generators comply with the regulations, transporters may illegally dispose of the wastes. Chapter 5 addresses the difficulty in detecting illegal disposals through generator or transporter facility inspections. Chapter 6 provides information on how those caught illegally disposing of hazardous wastes were discovered and the fines or sentences that were imposed on these violators. Finally, chapter 7 discusses some of the methods not required under RCRA which were used or considered by EPA or the four states reviewed that have the potential to detect or deter illegal disposals.

## CHAPTER 2

### ILLEGAL HAZARDOUS WASTE DISPOSAL

#### OCCURS, BUT THE FULL EXTENT IS NOT KNOWN

Illinois, Massachusetts, New Jersey, Los Angeles County, and EPA had brought charges on a total of 50 illegal disposal incidences occurring since RCRA was implemented. However, neither officials in the four states reviewed nor EPA knew the full extent of illegal disposals, nor did they know its full cost.

#### SOME ILLEGAL DISPOSAL CASES HAVE BEEN IDENTIFIED

During fiscal year 1983 and 1984 (as of March 31, 1984), EPA had developed 14 illegal disposal cases throughout the country and turned them over to the Department of Justice for prosecution. As of December 31, 1983, Illinois, New Jersey, and Los Angeles County had brought charges on 36 illegal disposal cases occurring after November 1980.<sup>1</sup> Charges were brought against illegal disposers in each state, except Massachusetts, as follows (excludes EPA cases):

#### Illegal Disposal Cases by State

	<u>Los Angeles County</u>	<u>Illinois</u>	<u>Massachusetts</u>	<u>New Jersey</u>
Number of cases	24	6	0	6

Our analysis of the 36 state or county cases showed that in 16 cases the generators stored or disposed of their hazardous wastes on their own property without permits or proper facilities; in 17 cases the generator or transporter illegally disposed of wastes off-site, away from the generator's place of operation; and in 3 cases the generator illegally disposed of the wastes both on-site and off-site. In some instances, the wastes disposal of on-site were allowed to run off the generator's property, eventually ending up in drainage systems; and in other instances, the generators simply dumped wastes directly

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<sup>1</sup>Chapter 6 discusses the disposition of these cases. At the close of our review, legal action (resulting in conviction) was complete on 28 cases. In eight cases, illegal disposal is alleged.

down the drain.<sup>2</sup> There were also off-site disposal cases where the hazardous wastes were illegally dumped along the road in secluded areas or into the sewer system.

Hazardous waste, by definition, can be dangerous to the public health and environment. In the enforcement cases we reviewed, for example, hazardous substances such as cyanide, lead, chromium, cadmium, and tetrachloroethane, all of which are known to be either toxic or are suspected of being carcinogenic, were discovered in the illegally dumped wastes. These substances, when dumped in the countryside or poured on the ground at the generator's place of business, may contaminate ground water supplies, enter the food chain, and cause birth defects, cancer, and other diseases.

#### THE EXTENT OF ILLEGAL DISPOSALS IS UNKNOWN

Officials in the four states reviewed and in EPA did not know the extent of illegal disposals. Some believed that many illegal disposals are occurring, and others believed that only a few incidents of illegal disposal occur. None of the officials, however, knew how much hazardous waste was disposed of illegally.

In an attempt to identify the extent of illegal disposals, an EPA consultant's report in 1983 estimated that one in seven hazardous waste generators in the 41 cities surveyed throughout the country had illegally disposed of its wastes at some time over a 2-year period.<sup>3</sup> The consultant did not estimate the quantity of wastes illegally disposed of. The consultant's report cites sampling limitations which would preclude projecting the results to the total universe of hazardous waste generators. The study stated that the effort to estimate quantitatively the incidence of illegal disposals should be viewed as an "innovative indicator of the problem, but not the definitive approach or answer to this difficult issue."

The Director of EPA's National Enforcement Investigations Center said that he believes that many criminal illegal disposals take place. According to the Director, the problem is

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<sup>2</sup>Under federal law this could be a violation of the Clean Water Act (33 U.S.C 1251 et seq.). In California, however, such activities were subject to enforcement under the state's hazardous waste law unless the generator had obtained a waiver because of its regulation under the Clean Water Act.

<sup>3</sup>Experiences of Hazardous Waste Generators With EPA's Phase I RCRA C Program, September 1, 1983, by Savant Associates, Inc., Response Analysis Corporation for EPA. This survey used the nominative technique where respondents were asked to nominate, in confidence, other generators who they believe are disposing illegally.



widespread, and EPA receives more allegations of illegal disposals than it can handle. He said the center has received about 240 allegations judged as having good potential during fiscal years 1982 through 1984 (mostly 1983 and 1984), but because of staff limitations the center was able to open investigations on only 70. However, he said that EPA does not have the data base to determine the extent of illegal disposals, or to determine whether there are more or fewer illegal disposals now than there were before RCRA.

Illinois environmental officials had mixed opinions on the severity of the illegal hazardous waste disposal problem, but they generally acknowledged they lack information on its full extent. The Manager of the Illinois environmental agency's Land Pollution Control Division said he believed that the number of illegal disposers is small, maybe 1 or 2 percent of generators and transporters. (This equates to 170 to 340 cases, determined on the basis of the number of Illinois generators and transporters.) An Illinois Assistant Attorney General who handled environmental cases said he believed that as many illegal disposals are occurring now as occurred before the manifest and other controls were implemented under RCRA. He said people are now using more sophisticated methods to avoid detection, which results in fewer illegal activities being discovered. The Coordinator, Hazardous Waste Investigations, Illinois Division of Criminal Investigation, said that illegal disposal is a problem but could not comment on its significance because baseline data do not exist.

Officials in Massachusetts, New Jersey, and California agreed that illegal disposal occurs. A Massachusetts Assistant Attorney General said that even with RCRA controls he believes illegal disposal continues to be a significant problem. He said that the incentive for illegal disposal is financial and that as long as the cost of proper disposal continues to rise, so will the incentive to illegally dispose of wastes. Similarly, the Chief of Field Operations for the New Jersey environmental agency said that illegal disposal is probably still a problem, but he knows of no way of quantifying either past or current illegal dumping. The Director of the California environmental agency's Toxic Substance Control Division said that he suspects that illegal disposal occurs but no one knows the extent.

#### THE FULL COST OF CLEANING UP ILLEGAL DISPOSALS IS NOT KNOWN

Since the extent of illegal disposals is not known, neither the states reviewed nor EPA had data on the full cost of cleaning up illegal disposal sites. Some cleanup costs may not be realized for years to come when abandoned wastes are discovered or when hazardous substances reach groundwater supplies. From December 1980 through fiscal year 1983, the latest information

available as of January 1985, at least \$700,000 of the funds established by the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) (42 U.S.C. §9601) were used for cleaning up illegal disposals that had occurred since EPA implemented RCRA. In addition, we noted that California was using state funds for cleaning up illegal disposals.

In 1980, the Congress passed CERCLA (commonly known as Superfund) to respond to, and pay for the cost of cleaning up, releases of hazardous substances. Superfund established a \$1.6 billion fund to be used for, among other things, cleaning up abandoned hazardous waste disposal sites. The fund is financed from three sources: excise taxes on petroleum and certain chemicals; appropriations from the general fund of the U.S. Treasury; and penalties, recoveries, and interest earned on the fund balance. About 11 percent of the CERCLA fund through fiscal year 1984 has been financed through the general fund, about 73 percent through taxes on businesses, and about 16 percent through penalties, recoveries, and interest earned on the fund balance.

CERCLA activities to date have focused primarily on emergency situations or "removal actions" and on identification and evaluation of abandoned hazardous waste disposal sites for long-term cleanup or "remedial actions." Through fiscal year 1984 EPA had obligated \$917 million for the Superfund program. According to EPA's December 11, 1984, study,<sup>4</sup> from \$7.6 billion to \$22.7 billion of CERCLA funds may be needed for future cleanups at 1,500 to 2,500 hazardous waste sites.

The total amount in cleanup costs due to illegal disposals is not known. Most hazardous waste disposals took place before RCRA when states had different laws on hazardous waste disposal, and while the disposals may have been improper, they may not have been illegal.<sup>5</sup>

Some of this CERCLA money, however, is being spent to mitigate dangers caused by illegal disposals since EPA implemented RCRA controls to detect or prevent such illegal activities. EPA's CERCLA removal actions are taken when there is a release or threat of a release of a hazardous substance which may cause imminent, significant danger to the environment or to public health or welfare. Thirty-six (18 percent) of the 206 EPA

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<sup>4</sup>This study was required by section 301 (a) (1) of the CERCLA act for the purpose of providing Congress with a comprehensive report of EPA's experience with implementing the act.

<sup>5</sup>The four states reviewed had their own environmental laws covering illegal disposals prior to the implementation of RCRA in 1980.

CERCLA removal actions through fiscal year 1983 were for sites classified by EPA as illegal disposals. EPA obligated over \$500,000 (1.1 percent of all removal obligations) to clean up these sites. According to the Chief of the Response Section of EPA's Emergency Response Division, the hazardous wastes in these cases were illegally disposed of after EPA first implemented RCRA. The manifests and other RCRA controls did not prevent or detect these illegal activities.

Some of the other 170 CERCLA removal actions also may have been at sites at which illegal disposals (storage) occurred after RCRA. For example, we reviewed the 14 California Superfund cases not classified as illegal disposals, and 2 were for sites where hazardous wastes were illegally stored. Although EPA has not substantiated all the circumstances surrounding these cases, it is known that hazardous wastes were transported to and illegally stored at these sites subsequent to RCRA implementation. EPA paid about \$34,000 to clean up one of these sites and about \$169,000 to clean up the other.

In addition to federal removal actions caused by illegal disposals, a significant portion of state-funded removal actions may be at such sites. We obtained information on California's removal actions for the period from July 1983 through December 1983 (the only period for which data for our analysis were available) and found that 9 (33 percent) of the 27 removal actions and \$109,000 (52 percent) of the \$209,000 paid to clean up sites were for sites where illegal disposals had taken place.

#### CONCLUSION

The consensus of EPA officials and among state officials in California, Illinois, Massachusetts, and New Jersey was that illegal disposal of waste continues and that regulations designed to prevent it from happening have not been fully effective. State or local officials provided us with information on a total of 36 illegal disposal cases that have occurred since EPA implemented RCRA controls over hazardous waste generators and transporters. EPA had brought illegal disposal charges in 14 cases nationwide and identified an additional 36 incidences where Superfund moneys had been used to clean up illegal disposals. No one knows, however, the extent to which illegal disposal actually takes place, or the costs that will be involved in cleanup actions.

### CHAPTER 3

#### IDENTIFYING ALL GENERATORS AND THE WASTES PRODUCED IS DIFFICULT

EPA and the states cannot assure that all hazardous wastes are disposed of properly because they do not know of all the generators and may not have complete and accurate information on the types and quantities of waste produced. Under these conditions, some generators operate outside of the regulatory control system and illegally dispose of their wastes, and EPA or the states cannot conduct inspections, check manifests, or take other steps to detect these illegal activities. All 27 generators in the generator enforcement cases we reviewed illegally disposed of hazardous wastes outside of the system of regulatory controls.

EPA and the states believe that they have identified most generators, particularly the larger ones, but say it is difficult to be certain they know all of them. The states are less certain about smaller generators--those exempt from federal regulations (before the 1984 RCRA Amendments) but covered by state regulations. Hazardous waste reporting requirements to provide information on the types and quantities of waste produced are not fully implemented in California and Massachusetts, and officials in all four states told us that verifying the accuracy of reported data may be resource intensive, time consuming, or impossible.

While further steps to identify hazardous waste generators and to verify the types and quantities of waste they produce may not be practical, EPA and the states cannot assure that all wastes are disposed of properly to the extent that this information is not known.

#### REGULATIONS CAN BE CIRCUMVENTED WHEN GENERATORS OPERATE OUTSIDE THE SYSTEM

A hazardous waste generator operates outside the system by failing to notify EPA of its existence, disposing of its waste on its own premises without a permit, and/or shipping its waste off-site without a manifest. In such cases EPA or the EPA-authorized state is not likely to identify the generator's illegal activity.

The generators in the 27 generator enforcement cases we analyzed were operating outside the states' control systems. In 8 of the 27 cases, enforcement files indicated that the generator illegally disposed of its waste off-site and did not prepare a manifest. In 16 cases, the enforcement files indicated

that the generator stored or disposed of its waste on-site without a permit. In the remaining 3 cases, enforcement files indicated that the generator illegally disposed of its waste both on- and off-site without a permit or manifest. In 19 of these 27 cases, the generator did not identify itself to EPA or the state as a hazardous waste generator. All of the 19 were required to identify themselves as hazardous waste generators under state law, and the quantity of waste disposed of in 8 of the 19 indicated that they were also required to identify themselves under federal regulations.<sup>1</sup> None of the illegal disposal cases were discovered through checks of manifests, inspections, or other regulatory controls. (The methods of discovery are discussed in chapter 6.)

Officials in the four states we reviewed agreed that their regulatory systems would not detect illegal disposals if the hazardous waste generator operates outside of the system. For example, the Acting Deputy Director for Enforcement of the Massachusetts Department of Environmental Quality Protection said that he could not detect illegal disposals by generators that operate outside of the system. He said those illegally disposing of hazardous wastes generally do not notify EPA or the state that they produce hazardous wastes, do not manifest the wastes for shipment, and do not prepare other required reports. One example of a generator disposing of its waste off-site and outside the system of regulatory controls is a metal recovery firm. Based on a tip from an employee, this firm was caught dumping sixty 40-gallon drums of cyanide waste on national forest property. About 2,400 gallons of additional hazardous waste were found later at the company's facility in a nearby city. The company did not have an EPA identification number even though the quantity of waste disposed of indicated that it should have had one. The company did not prepare a manifest when shipping the waste off-site in a company vehicle as required under both federal and state regulations.

An example of a generator illegally disposing of its waste on-site without a permit is a weed control company which illegally disposed of sixty 55-gallon drums of tar, paint, and industrial solvent wastes into a ravine on its property. The drums were discovered by a hiker and reported to the authorities. The firm neither had an EPA identification number, as required under federal regulation, nor was it authorized to store or dispose of its wastes.

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<sup>1</sup>Information on the quantities of waste disposed of was not always in the case files. However, in 8 of the 19 cases the records documented illegal disposals in quantities exceeding the federal exemption level of 1,000 or more kilograms.

EPA AND STATE EFFORTS TO IDENTIFY  
HAZARDOUS WASTE GENERATORS

The first step in assuring that hazardous waste generators comply with the regulations is to know who they are. Without this knowledge EPA or the states cannot inspect and monitor the generators' compliance with hazardous waste regulations. At the outset of the RCRA Program, EPA sent out notices to potential hazardous waste handlers asking them to identify themselves. EPA then searched for generators subject to federal regulations that did not respond to this notice. EPA found what it considered a relatively small number (200) and concluded that further searching was not justified. Subsequent to this initial notification program, EPA relied on hazardous waste handlers to voluntarily identify themselves as they become subject to regulatory requirements and provided its updated lists of hazardous waste handlers to authorized states for their use in administering the RCRA Program.

Environmental officials in the four states reviewed told us that they believe EPA's updated lists of federally regulated generators are substantially complete but were not confident that all small-quantity generators covered by state regulations had been identified. The states have relied primarily on small-quantity generators to identify themselves, although two of the four states reviewed, as discussed below, have active programs to identify hazardous waste generators. No results are available yet for one of these programs, but in the other, one county agency has identified about 5,000 additional hazardous waste generators through a notification program. While the county did not have data on the size of these generators, county officials believe that most of them were small-quantity generators covered only by state regulations.

EPA believes its initial list of  
hazardous waste generators was  
substantially complete

When implementing RCRA, EPA developed a national listing of about 400,000 industrial firms that might, on the basis of the nature of their business, be required to notify EPA of their hazardous waste activities. Letters and notification forms were mailed to these firms seeking information on their operations and asking that they respond if, in their judgment, they were

subject to regulation under the act. Approximately 67,000 firms responded,<sup>2</sup> indicating that they were a hazardous waste generator, transporter, and/or TSD facility.

To enhance the success of its notification program, EPA also tried to locate non-notifiers. EPA regional offices assembled "target lists" of names of firms from such sources as industrial directories and state records and visited, phoned, or sent followup notices to over 12,000 facilities on the target lists. Although EPA could not provide us the exact number found by this effort, available data indicate that the effort resulted in identification of about 200 non-notifiers. According to EPA, the relatively low number identified through this effort suggested that additional steps are not warranted. The Director of EPA's Permits and State Programs Division told us that with the generators' going in and out of business, there will likely always be some that are not identified. He also said that it would be difficult to devise a system to ensure that all are identified, particularly those who do not want to be identified.

Two 1981 studies of EPA's initial list by the Illinois Environmental Protection Agency found that the list for Illinois was essentially complete. One effort involved a manual comparison of generators on Illinois' list with those on EPA's list. According to the compliance monitoring manager, the comparison identified no additional federally regulated hazardous waste handlers.

In the second study, Illinois identified recurring standardized industrial classification codes<sup>3</sup> on EPA's list to determine industry types, such as metal and textile industries, likely producing hazardous wastes. Illinois then looked at sources such as Dunn and Bradstreet, Moodies, and telephone directories for Illinois businesses in the identified industries. Illinois compared the results with EPA's list and identified 1,200 companies not on EPA's list. Illinois sent survey forms to these businesses and followed up with telephone

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<sup>2</sup>Some of these 67,000 have subsequently advised EPA or states that they had notified in error or were no longer involved in activities that would require notification. As of August 1984, EPA records listed 66,000 hazardous waste handlers. EPA estimates indicate that the actual number that handle federally regulated hazardous waste may be much lower.

<sup>3</sup>Standardized industrial classification codes identify establishments by the type of activity in which they are engaged and are used for facilitating collection, tabulation, and analysis of data on such establishments.

calls and 200 visits to those most questionable. According to the deputy division manager, only 2 of the 1,200 businesses turned out to be generators of federally regulated hazardous wastes. One business was unaware of EPA's notification requirement, while the other business intentionally did not notify EPA of its existence.

The other three states in our review did not test EPA's initial list of hazardous waste handlers.

#### State concerns about identification

According to officials in the four states reviewed, they were aware of most hazardous waste handlers covered by federal regulations. However, they were less confident about those generators that produce less than 1,000 kilograms and that are covered by state regulations.<sup>4</sup>

The Chief of the Permits Management Unit of the Toxic Substances Control Division for the California Department of Health Services said that large generators and generators of extremely hazardous waste have notified EPA; however, he believes that many small-quantity generators covered only by state regulations have not identified themselves. He said that the state is encouraging the counties to identify these generators (through a county licensing program discussed later in this chapter).

Massachusetts officials in a written response to our questions said that they did not have the data on which to base an opinion; however, a program review of EPA Region I by EPA headquarters in April 1983 noted that Massachusetts staff believe that many Massachusetts small-quantity generators (20-999 kilograms) may be operating outside the system.

The Chief of Field Operations for the New Jersey Department of Environmental Protection said that he was less certain about having identified hazardous waste generators producing 100 to 999 kilograms than he was about those producing 1,000 kilograms or more. He believed the state had identified all of those producing 1,000 kilograms or more and about 95 percent of those regulated below 1,000 kilograms.

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<sup>4</sup>Each of the four states in our review requires generators below the 1,000-kilogram threshold to obtain an EPA or state identification number and comply with all or some of the requirements applicable to larger generators. Illinois and New Jersey have a 100-kilogram small-quantity exemption, and Massachusetts a 20-kilogram exemption. California has no small-quantity exemption.



The Manager of the Compliance Monitoring Section of the Division of Land Pollution Control for the Illinois Environmental Protection Agency believed that at least 90 percent of the Illinois generators in the 100-999 kilogram range had been identified.

#### State programs to identify generators without identification numbers

The four states in our review rely on small-quantity generators that need EPA or state identification numbers to use the manifest system to voluntarily notify the state of their existence. In Massachusetts and California, additional efforts are underway to identify hazardous waste generators that have not identified themselves.

#### Massachusetts non-notifier program

The Massachusetts Department of Environmental Quality Engineering initiated a non-notifier program in March 1983 to determine if any hazardous waste handlers had not notified EPA or Massachusetts of their activities. To date, about 900 potential non-notifiers have been identified through this program. These firms were discovered by comparing data available from all environmental departments' programs (e.g., Air Pollution Emission Inventory, Metropolitan District Commission sewerage industrial users) and EPA data. No data were available on how many firms the state checked to determine how many should have notified.

We visited the state environmental department's northeast field office, which had 565 (67 percent) of the state's potential non-notifiers. The Chief of the RCRA Compliance Unit in this field office stated that none of the potential non-notifiers had been inspected as of August 1984 because of limited resources and higher priorities. This official did not know when the field office would be able to inspect the potential non-notifiers, because known generators have to be inspected first.

#### California county licensing program

The California Department of Health Services encourages counties to identify and regulate hazardous waste generators. As of December 31, 1983, the department had agreements with 8 of 58 counties stipulating county responsibilities for the regulation of hazardous waste generators.

In August 1981, the California Department of Health Services agreed to allow Los Angeles County to inspect and enforce hazardous waste regulations at generators located within

the county, except for those with state TSD facility permits. The state retained responsibility for TSD facilities. In August 1982, the county established a licensing requirement for hazardous waste generators. Licensing fees were to provide funds for the county's inspection and enforcement activities.

The county used standardized industrial classification codes to identify potential hazardous waste generators from a California Office of Employee Development (state unemployment insurance office) data base. County Department of Health staff selected 18 industrial codes under which they believed hazardous waste generators would likely be classified. Using these codes, the county identified about 18,000 Los Angeles County businesses through a computer search of California Department of Employee Development records. According to the county's program manager, the county has licensed and collected fees from about 14,000 generators; about 4,000 of the 18,000 potential generators did not produce hazardous wastes. Some of the firms licensed already had identification numbers, but according to the supervisor of the inspection unit, half of the 10,000 generators inspected as of July 1984 did not. He said that he believed that these were mostly small-quantity generators (producing less than 1,000 kilograms a month) but did not have records showing the quantities of waste they produced.

#### INFORMATION ON THE TYPES AND QUANTITIES OF WASTE GENERATED IS LIMITED

Federal regulations and regulations in the states reviewed require periodic reporting by generators on the types and quantities of waste produced. Reporting requirements, however, had not been fully implemented in California, and Massachusetts had problems in getting its generators to submit the reports. None of the states reviewed planned to verify the accuracy of these reports because such verification was considered impractical. While there is no requirement that states verify generator reports, without accurate information on the types and quantities of waste a generator produces, it is possible for generators to comply with notification, manifest, and other requirements for only a portion of the total waste produced and illegally dispose of the remaining waste outside of the system of regulatory controls. While none of the cases we reviewed involved legal charges concerning this type of activity, the system may be vulnerable.

#### Use of RCRA reports to assure that generators operate within the system

RCRA requires EPA to establish generator reporting standards that provide periodic information on the types, quantities, and disposition of waste produced but does not require that this

information be verified. Beginning in 1984, federal regulations require generators that ship wastes off-site (except for those qualifying for the small quantity-exemption) and TSD facilities to prepare biennial reports every even-numbered year on the types and quantities of hazardous waste handled during the previous year. In EPA-authorized states, state reporting requirements apply.

Illinois requires annual rather than biennial reports; its exemption for reporting is the same as the federal small-quantity exemption (1,000 kilograms a month).

Massachusetts also uses the federal small-quantity exemption level for reporting requirements but requires annual reports from generators and on-site TSD facilities and monthly reports from commercial, off-site TSD facilities.

New Jersey's small-quantity exemption level for reporting is 100 kilograms, and reports are required annually.

California has no small-quantity exemption, and TSD facilities are required to report annually. Generators report biennially every even-numbered year but for the 2 previous years rather than just the previous year as is required under federal regulation.

Comparing generator reports on the types and quantities of waste produced with other reports required by RCRA can help assure that hazardous waste generators dispose of their wastes properly. For example, EPA or an EPA-authorized state could review a generator's manifest records. If the generator was not authorized to treat, store, or dispose of its wastes, its manifest records should show that all of the wastes it produced for the reporting period were sent to an approved TSD facility. EPA or an EPA-authorized state could further verify that all of these wastes were received by the designated TSD facility by reviewing the facility's annual or biennial report on the wastes it handled.

Complete report data  
not yet available in  
California and Massachusetts

In California, regulations for generator and TSD facility reporting were in draft form as of August 1984; therefore, no reports had been received. As soon as regulations are finalized, the state plans to establish a reporting deadline.

Massachusetts regulations required generators and TSD on-site facilities to send in their first report on the types and quantities of waste handled by March 1, 1983. However, only 19

percent of the state's generators and 22 percent of the state's on-site TSD facilities submitted the required reports. For the first report, Massachusetts relied on generators responding to reporting requirements covered in its regulations and did not send a letter reminding them of those requirements. For the second report, due on March 1, 1984, Massachusetts sent letters with annual report forms to all generators and TSD facilities covered by the regulation. Response rates for the second year, as of October 1984, were better: 80 percent of the generators and 97 percent of the on-site TSD facilities responded.

In contrast, both Illinois and New Jersey have received high response rate to requests for reports on the types and quantities of waste handled during 1982. Both sent out requests for reports and sent followups when responses were not received. Illinois achieved a 99 percent response rate and New Jersey, 93 percent.

#### Difficulty in ensuring report accuracy

Accurate information on the types and quantities of waste produced is essential to using these reports to assure that generators dispose of their wastes properly. None of the states reviewed had plans to verify the accuracy of generator reports because such verification was considered impractical.

The Chief of Field Operations for the New Jersey Department of Environmental Protection said that verifying a generator's reported waste production would be a major undertaking requiring a full-time engineer or auditor at each generator's facility.

The Chief of the RCRA Compliance Unit in the Massachusetts Department of Environmental Quality Engineering for its north-east field office believed that it would be very difficult to verify the types and volume of hazardous wastes that a firm generates. Such an effort would be resource intensive and time consuming; also, it would be practical only on a selective basis, such as when a tip indicated that a firm was not accurately reporting its hazardous waste activity.

The Illinois Environmental Protection Agency's Field Operations Chief said that to verify the reported quantities of hazardous waste produced would require 24-hour surveillance of generators' production processes, weighing what goes in and comes out. He further said that analyzing production records would not likely produce reliable results if the firm was illegally disposing of hazardous wastes. He said that if a generator is falsifying reports, odds are that it would also be altering production records.

The Senior Waste Management Engineer in the California Department of Health Services, Alternative Technology/Policy Development Section, believed that his agency could not accurately estimate the quantity of waste produced by the average hazardous waste generator because it could not pay the high salaries necessary to obtain people with the skill required for such analysis.

In its comments on a draft of this report, EPA pointed out that verification of reported wastes would be impossible unless the quantity and quality of waste generated were uniform. EPA also said that in high volume, low cost per unit volume process lines, records are usually no better than 70 percent accurate, making falsification unnecessary. (See app. II.)

## CONCLUSION

EPA and the states cannot assure that all hazardous waste generators dispose of their wastes properly because they do not know of all the generators and may not have complete information on the types and quantities of wastes produced. All 27 generators in the generator enforcement cases we reviewed were operating outside of the regulatory system. That is, they either failed to notify EPA or the state of their existence, disposed of their wastes on-site without a permit, and/or shipped their wastes off-site without a manifest. Under these conditions, EPA or the states cannot conduct inspections, check manifests, or take other steps to detect or deter illegal disposals.

The first step in controlling hazardous waste generators is to identify them. EPA and the states believe they have identified most generators, particularly the larger ones, but say it is difficult to be certain they know all of them. The states are less certain about the smaller generators--those exempt from federal regulations but covered by state regulations.

The next step in controlling hazardous waste is to know the types and quantities of waste that generators produce. This information may be important if EPA and the states are to deter generators from legally disposing of some of their wastes while illegally disposing of other wastes. However, hazardous waste reporting requirements to provide this information were not fully implemented in California and Massachusetts, and state officials in all four states told us that verifying the accuracy of reported data may be resource intensive, time consuming, or impossible.

As discussed in chapter 1, RCRA requires EPA to issue regulations providing for a manifest system and any other reasonable means of assuring that all hazardous wastes are disposed of at approved TSD facilities. Whether additional steps to identify generators and the types and quantities of waste are

warranted depends to a large degree on the extent of illegal disposals, which is not known (see ch. 2). While further steps to identify hazardous waste generators (except for small-quantity generators soon to be covered by federal regulations) and the types and quantities of waste they produce may not be practical, EPA and the states cannot assure that all wastes are disposed of properly to the extent that this information is not known. Since obtaining this information may not be practical, other methods of detecting or deterring illegal disposals (see ch. 7) may be more appropriate.

## CHAPTER 4

### THE MANIFEST SYSTEM MAY SERVE AS A DETERRENT

#### BUT HAS NOT DETECTED ILLEGAL DISPOSALS

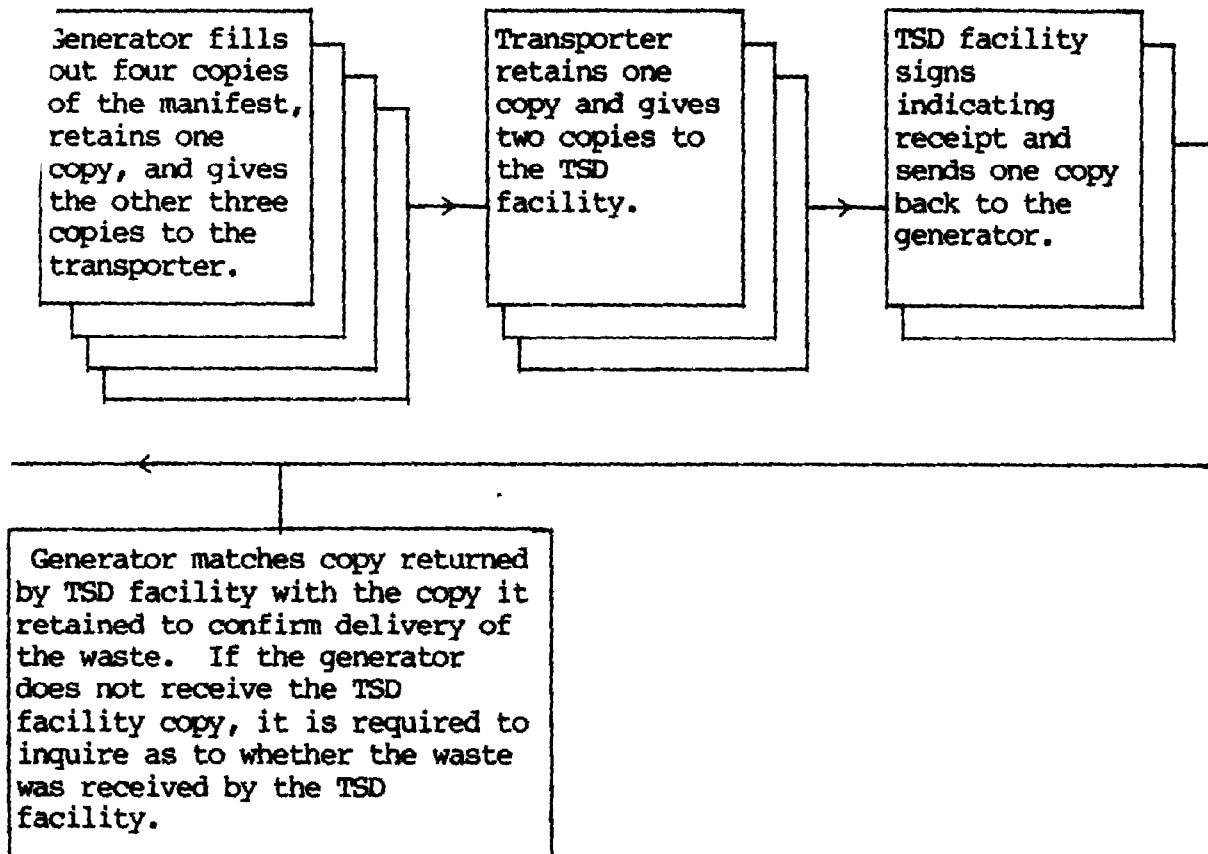
In chapter 3, we discussed generators operating outside of the regulatory system; this chapter discusses the manifest system which is designed to deter or detect illegal disposals by transporters. During the period covered by our review, the four states reviewed had not detected any cases of illegal disposal through the manifest system. We found, however, that transporters can circumvent manifest controls by forging the manifests. In addition, some state officials said they believed that generators may not be monitoring manifests to ensure delivery of the waste to its destination and that state followup on leads provided by the manifest system may not always be thorough.

#### HOW THE MANIFEST SYSTEM WORKS

Federal regulations require generators to complete a manifest and provide a copy of it for each party handling the waste, plus an extra copy for the TSD facility to return to the generator following delivery of the waste. Once the waste is shipped off-site, the generator is still responsible for assuring that the waste reaches a permitted TSD facility. If the generator has not received the return copy of the manifest signed by the owner/operator of the designated TSD facility within 35 days of shipment, it must contact the transporter and/or TSD facility to determine the status of the shipment. If within 45 days it has not been able to verify the proper delivery of the waste, it must then file an exception report with EPA or the authorized state agency for investigation by that agency. The generator's matching of its copy with the returned TSD facility copy and the filing of exception reports is the federal manifest system's mechanism for detecting hazardous waste shipments that were not delivered to designated TSD facilities. The process, assuming one transporter, is depicted on the following page.

## Manifest System

( IV



When introducing its regulations for the manifest system, EPA stated that the manifest was intended to serve as a check against illegal disposals and that it would greatly assist EPA or EPA-authorized states in their enforcement of hazardous waste regulations. Some state officials believe that the manifest system is more a mechanism for deterring illegal disposal than for detecting it. For example, the Compliance Monitoring Chief of the Illinois Environmental Protection Agency said that the manifest in some instances can detect illegal disposals but that the system is meant to deter rather than detect illegal disposals. The Chief of Field Operations, Division of Waste Management, New Jersey Department of Environmental Protection, said that the manifest system is a deterrent to illegal disposals. He said that it has the potential of detecting illegal disposals, but that the system can be circumvented.

### TRANSPORTERS CAN CIRCUMVENT THE MANIFEST SYSTEM

Transporters can illegally dispose of hazardous wastes and avoid detection by falsifying the manifest document. For



example, the transporter can forge the TSD facility copy of the manifest and return it to the generator, which may lead the generator to believe that the waste was disposed of properly. Because the generator has no way of knowing that the manifest has been falsified, the transporter is then in a position to illegally dispose of the waste without fear of detection through the generator's manifest matching and exception reporting. If the generator paid the transporter for both the transportation and disposal of the waste, expecting the transporter to pay the TSD facility, the transporter could then keep the total amount.

Based on information in case files maintained by the investigating or prosecuting agencies, we identified two cases in our analysis of the nine transporter enforcement cases where the transporter had forged the manifest in this manner. The transporter illegally disposed of the waste and avoided paying a disposal fee to the TSD facility. In one of these cases the transporter was convicted of forgery and illegal disposal, and in the other case enforcement action had not been completed. A citizen tip led to the identification of one illegal disposer; and in the other case, the illegal disposer was discovered by tracing the abandoned barrels back to the generator. In the remaining seven cases, the files did not disclose why the manifest did not detect the illegal disposal.

#### STATE VIEWS ON OTHER POTENTIAL MANIFEST PROBLEMS

The four states reviewed could not tell us of any illegal disposal cases identified through generator exception reporting where charges were brought during our review period (December 1, 1980, through December 31, 1983).<sup>1</sup> One reason is that the manifest system can be circumvented. As discussed below, some state officials indicated other possible reasons, including (1) generators may not be matching manifest, (2) generators may be confused about exception report requirements, and (3) state followup on exceptions may not be thorough.

#### Some generators may not be matching manifests

The four states in our review had received 26 generator exception reports. The exception report data provided to us by the states covered different time periods in each state but were the only data available. California had received two for the period from June 1981 through October 1983. Illinois had

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<sup>1</sup>On February 21, 1984, an Illinois transporter was indicted for illegal disposal, and a generator exception report contributed to this action. This case was not included in our review because charges were brought after our cut-off date.

received five for the period from May 1982 through December 1983. New Jersey had 16 during the period from May 1982 through December 1983. Massachusetts had three during the period from November 1982 through December 1983. To illustrate the relatively low number of exception reports, California generators typically prepare manifests for about 60,000 hazardous waste shipments each year, Illinois generators prepare about 42,000 each year, New Jersey about 26,000, and Massachusetts about 24,000.

Evidence on the extent to which generators were following exception report requirements was not available, but state inspectors that we talked with believed that at least some generators were not. The states reviewed did not maintain data showing the number of exception reports that should have been filed versus the number filed. However, the state inspectors that we talked with believed that some generators were not complying with the requirements for matching manifests to determine whether an exception report was appropriate. We spoke with seven inspectors, including at least one in four<sup>2</sup> of the five state field offices we visited. While opinions varied as to the extent of noncompliance (10 percent to 50 percent), each believed, based on the way the generator filed its manifest documents, that at least some generators were not matching their copy with the TSD facility copy. For example, some generators stapled the TSD facility copy of the manifest to their copy when their facility copy was returned, while other generators maintained the TSD facility copy and their copy in separate files.

Consistent with these views, a 1982 consultant study for EPA concluded that generators largely ignored the generator exception report requirement.<sup>3</sup> The study cited as an example that Oregon's state manifest matching system<sup>4</sup> had detected 30

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<sup>2</sup>We did not ask the southern California field office about generator compliance with manifest matching requirements because of the limited number of generator inspections performed by that office.

<sup>3</sup>Sources of Information for Assessing Manifest System Noncompliance, A. T. Kearny, Inc., 1982, pp. 25-27 and 40.

<sup>4</sup>In states that have their own manifest matching system, generators and TSD facilities are required to send manifest copies to the state, and the state matches the two to assure that the waste reaches the designated TSD facility. In these states, federal regulations still require generators to match manifest and prepare exception reports. Each of the states in our review had or was implementing a state matching system. Such a system is not required under federal regulations. (See chapter 7 for more information on state matching.)

cases where the TSD facility had not sent a copy of the manifest to the state. In most of these cases, the state found that the TSD facility also had not sent a copy to the generator, but the generator had not prepared an exception report. The study concluded that a low number of exception reports indicates that the regulated community was disregarding this aspect of the manifest system.

In commenting on a draft of this report, EPA said that a key reason for generators' not submitting exception reports is the unwillingness of generators to "turn in" low bid transporters. EPA said this is especially true for smaller volume generators that routinely have great difficulty finding transportation for their wastes. (See app. II.)

Some generators may be confused  
about exception report requirements

According to the Chief, Procedures, Regulations and Development Section, Toxic Substances Control Division, California Department of Health Services, some generators may not have full knowledge of exception report requirements. California did not require generator exception reports at the time that EPA authorized its program (June 1981), and California State regulations do not require exception reports now. However, a state law effective in March 1982 required hazardous waste generators to comply with both federal and state regulations until new state regulations become effective. Since federal regulations require exception reports, California generators should be preparing them. However, the Chief told us that some generators may not be aware of this requirement. She believes this may be a contributing factor to the low number of exception reports that have been submitted. New state regulations consistent with the federal requirement for exception reports were in draft as of August 1984.

The Compliance Monitoring Chief of the Illinois Environmental Protection Agency attributes the small number of generator exception reports to generators' confusion between state and federal regulations. Illinois regulations cover both hazardous wastes and special wastes.<sup>5</sup> Generators that produce only special waste are exempt from filing exception reports. Special waste generators that also produce hazardous waste are not

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<sup>5</sup>Illinois had a hazardous waste control program prior to RCRA, but the waste was called special waste rather than hazardous waste and its control program covered more waste than RCRA. When RCRA became effective, Illinois continued its regulation of special wastes that were not covered under RCRA. Waste oil, for example, is classified as a special waste in Illinois.

exempt, but according to the Chief, these generators may be confused because of the differences between special waste and hazardous waste exception report requirements.

State officials in Massachusetts and New Jersey did not identify any differences between state and federal regulations that could confuse generators about when they were required to submit exception reports.

State followup on generator-submitted exception reports may not be thorough

Officials in California and Illinois indicated that state followup on exception reports may not be thorough or timely. The Chief of the Hazardous Waste Management Unit, Toxic Substances Control Division, California Department of Health Services, said that he recalled receiving two generator exception reports and that they were sent to field offices for followup. He did not know the status of that followup, he could not recall which field offices the reports were sent to, and he had no records on file of the exception reports received. Thus, the Chief did not know whether the two generator exception reports received were the result of a problem with the generator's or TSD facility's manifest records or the result of the transporter illegally disposing of the hazardous waste.

Illinois does not have specific procedures for following up on generator exception reports. The central office files contained five generator exception reports. The files clearly documented that the state had followed up on one exception report. The other four lacked sufficient documentation; however, the Compliance Assurance Manager said three of the four were followed up and he had not yet initiated any action on the fourth (which was dated 17 weeks before our visit). The manager said specific procedures do not exist for following up on generator exception reports. He said he does not always check on reports in a timely manner, nor does he document the followup. He said he does not emphasize exception reports because they are primarily paperwork errors. He looks over exception reports when they initially arrive, and if a report strongly indicates illegal disposal, he will immediately follow up with the generator.

Officials in Massachusetts and New Jersey did not cite followup on the exception reports as a problem. Followup on exception reports in these states showed that exceptions were not the result of illegal disposals but rather the result of other problems such as clerical errors.

CONCLUSIONS

While the manifest system may be a deterrent to illegal disposals, it has not identified any illegal disposals in the

states we reviewed. A major weakness in the manifest system is that it can be circumvented by transporters through forgery. In addition, we noted three possible problems in implementing the manifest system: (1) some generators may not be matching manifests, (2) some generators may be confused about exception report requirements, and (3) some states may not be following up on all manifest exception reports. The extent to which generators are not matching manifests is not known. Also, when they are performed, state followups indicate that exceptions are the result of clerical errors or other problems rather than illegal disposals. It is unclear, therefore, whether correcting these implementation problems will result in any increased detection. Other ways in which the manifest system can be strengthened are discussed in chapter 7.

## CHAPTER 5

### ROUTINE GENERATOR AND TRANSPORTER INSPECTIONS

#### ARE NOT DESIGNED TO DETECT ILLEGAL DISPOSALS

Although the states reviewed generally met or exceeded EPA targets for the number of generator and transporter inspections, no illegal hazardous waste disposal cases were discovered through routine inspections. State officials said that finding illegal disposals through routine inspections is not likely because they are not designed to detect illegal disposals and generators/transporters can hide evidence of their illegal activities. Also, over two-thirds of the generators caught illegally disposing of hazardous wastes in the enforcement cases we reviewed had not identified themselves as generators and, therefore, were not inspected. Inspections or investigations (resulting from complaints) specifically designed to detect alleged illegal disposals have detected illegal disposals (see ch. 6).

The Department of Transportation's Bureau of Motor Carrier Safety (BMCS) also inspected some hazardous waste transporters in the four states reviewed, but like the environmental agencies, BMCS did not detect any cases of illegal disposal. These inspections were done to determine compliance with Hazardous Material Transportation Act (HMTA) requirements and were part of an ongoing program to inspect hazardous material shippers and transporters. These inspections were different from those conducted by state environmental agencies. BMCS inspections focused on transportation safety issues, while environmental agency inspections focused on compliance with RCRA requirements.

#### STATES HAVE GENERALLY MET EPA INSPECTION TARGETS BUT HAVE NOT DETECTED ILLEGAL DISPOSALS

Although the states reviewed generally met or exceeded generator/transporter inspection targets, these inspections did not result in the identification of illegal disposals during our period of review, unless that inspection was initiated by a complaint or tip.

EPA establish a target of having 10 percent of all generators/transporters inspected for compliance with RCRA standards during fiscal year 1983.<sup>1</sup> Prior to 1983, EPA had no generator/transporter inspection targets. The following table

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<sup>1</sup>Ten percent of the generators/transporters as defined under federal regulations, excluding those smaller generators covered by state regulations only.

reflects the targets that EPA regions established with the four states we reviewed under fiscal year 1983 RCRA grants. These targets did not always equal 10 percent. For example, no targets were set for Massachusetts. However, as shown below, the number of inspections performed by Massachusetts exceeded EPA's 10-percent objective.

Table 1  
Fiscal year 1983  
Generator/Transporter Inspections and Targets

<u>State</u>	<u>Transporters</u>			
	<u>Total number</u>	<u>10 percent</u>	<u>Inspections targeted</u>	<u>Inspections performed</u>
California	958	96	0	939 <sup>a</sup>
Illinois	653	65	b	b
Massachusetts	58	6	0	115
New Jersey	358	36	28	70

<u>State</u>	<u>Generators</u>			
	<u>Total number</u>	<u>Ten percent</u>	<u>Inspections targeted</u>	<u>Inspections performed</u>
California	5,149	515	525	453
Illinois	1,043	104	330 <sup>b</sup>	337 <sup>b</sup>
Massachusetts	3,127	313	0	679
New Jersey	3,250	325	117	235

<sup>a</sup>Inspected by the California Highway Patrol in connection with transporter licensing requirements.

<sup>b</sup>Targets and number of inspections for generators include both generators and transporters.

On the basis of the above information provided by the four states reviewed, Illinois, Massachusetts, and New Jersey exceeded fiscal year 1983 inspection targets and California fell short by about 14 percent. The targets established for New Jersey, however, were less than the 10-percent EPA objective.

**DIFFICULTIES IN DETECTING ILLEGAL DISPOSALS THROUGH GENERATOR INSPECTIONS**

Officials in each state reviewed said that detecting illegal disposals through routine generator inspections is difficult. For example, the chief of the RCRA Compliance Unit in the Massachusetts northeast field office said that if a generator wants to illegally dispose of hazardous waste and is not careless about leaving evidence, an inspection would not likely detect the violation. The Chief of Field Operations for

the New Jersey Division of Waste Management also said that illegal disposals are hard to uncover because people hide their illegal activities. Each of these officials said that routine inspections were not specifically designed to detect illegal disposals.

Routine generator inspections in each of the states reviewed were designed to determine general compliance with generator hazardous waste regulations and would not likely disclose hidden illegal activities. Generator regulations include pre-transportation requirements for containing, storing, packaging, labeling, and marking of hazardous wastes. Also included are paperwork requirements for manifesting, recordkeeping, and reporting. State inspectors said that they used a checklist to determine compliance with these requirements and physically inspected the business' operation.

The enforcement cases files that we reviewed showed that 19 of the 27 generators caught illegally disposing of hazardous wastes would not have been inspected at all because they had not identified themselves to federal or state agencies. For the eight remaining cases, it was difficult for us to determine from the files whether the generator's illegal activities would have been discovered through an inspection, except when the violation was blatant. For example, in one case a generator disposed of hazardous waste on its property into a seepage pit 9 feet wide and 10 feet deep. Residue from hazardous spills surrounding and leading to the pit were clearly visible.

DETECTING ILLEGAL DISPOSALS THROUGH  
INSPECTION OF TRANSPORTER FACILITIES  
IS UNLIKELY

The scope of transporter inspections varied in the four states reviewed but generally focused on transporter licensing or safety requirements. Massachusetts inspects transporters at their facilities about twice a year, at least once in connection with the annual state hazardous waste transporter licensing requirement. Inspectors primarily look for compliance with licensing requirements, which includes meeting vehicle safety and insurance standards, and review manifest documents for completeness. California also inspects transporters during licensing, but the inspection, performed by the California Highway Patrol, is limited to compliance with vehicle safety requirements. New Jersey's inspections are similar to Massachusetts', but New Jersey does not inspect all transporters each year, and the inspection is not done in conjunction with licensing. Illinois inspections include a review of manifest documents for completeness and a brief check of the condition of vehicles.



State officials did not see much potential for transporter inspections' detecting illegal hazardous waste disposal. The Chief of the Division of Waste Management for the New Jersey Department of Environmental Protection said that it is hard to detect illegal disposals through transporter inspections unless the transporter is caught in the act. He said that stopping transporters on the highway and sampling to see if the wastes match their manifests might detect illegal disposals, but this is an expensive process. The Chief of the Surveillance and Transportation Unit of the Toxic Substances Control Division of the California Department of Health Services said that the cost of highway inspections would be high with little return because of the number of trucks on the highways. The Chief of the RCRA Compliance Unit for the Northeast field office of the Massachusetts Department of Environmental Quality Engineering, Division of Hazardous Waste, said that little could be done to detect illegal disposals through routine transporter inspections. He noted that sampling was time consuming and resource intensive and that, even if irregularities were discovered, the state may not be able to prove intent to illegally dispose of the wastes unless the transporter was caught in the act. The Director of the Illinois State Police Hazardous Material Section said that the only way to catch illegal transporters is to observe the illegal dumping or inspect every transporter on the highway.

HAZARDOUS MATERIAL TRANSPORTATION ACT  
INSPECTIONS HAVE NOT DETECTED  
ILLEGAL DISPOSALS

In addition to inspections by state environmental agencies, hazardous waste transporters<sup>2</sup> are inspected by the Department of Transportation's Bureau of Motor Carrier Safety for compliance with HMTA requirements. No illegal disposals were discovered through these inspections in the states reviewed.

Hazardous waste transporters  
inspected for compliance with  
hazardous material regulations

In accordance with a June 1980 agreement between EPA and the Department of Transportation, BMCS inspects hazardous waste transporters for compliance with hazardous material regulations under its program for inspecting hazardous material transporters. This agreement does not require BMCS to conduct RCRA inspections but requires BMCS to advise EPA of any possible violation of RCRA regulations observed during HMTA inspections. EPA, not BMCS, is to take appropriate enforcement action for RCRA violations.

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<sup>2</sup>BMCS may inspect a hazardous waste generator which also transports its own waste.

During 1983, BMCS conducted 54 inspections at hazardous waste transporter facilities in the states reviewed and 136 inspections on the highways.

HMTA inspections not designed to detect illegal disposals

BMCS inspections are designed to determine compliance with HMTA regulations, not to detect illegal disposals. BMCS inspections are substantially different from inspection by state environmental agencies, although some of the same areas are covered. BMCS inspections emphasize safety of the vehicle or container and driver qualifications. Safety checks cover the container's structure, labeling, and compatibility with the product being hauled, and the vehicle's brakes, lights, emergency equipment, valves, and placarding. Driver qualification checks concern the proper licensing of the driver and verifying that the number of hours driven over a specific period does not exceed stated limits. State environmental agency inspections emphasize the safety of the facility and compliance with RCRA manifesting and recordkeeping requirements. Both agencies may look at container labeling and manifest documentation.

No illegal disposal cases were discovered through BMCS inspections in the four states reviewed.

CONCLUSION

In the states we reviewed, routine generator and transporter inspections had not helped to discover illegal disposal of hazardous wastes. One major reason for nondiscovery was that many of those generators that illegally disposed of their wastes (19 of the 27 enforcement cases files analyzed) had not identified themselves to EPA or the state as hazardous waste generators and therefore were not inspected. Another reason was that routine inspections were not designed to detect illegal disposals but were designed to determine general compliance with RCRA and HMTA requirements. However, designing routine inspections to detect illegal disposals may not be appropriate without an indication that a large portion of the generators and transporters illegally dispose of hazardous wastes, because illegal disposals are hard to find. Therefore, routine inspections should not be relied on exclusively to detect illegal disposals. Other methods of detecting illegal disposals are discussed in chapter 7.

## CHAPTER 6

### ILLEGAL DISPOSAL CASES ARE RESULTING IN ENFORCEMENT ACTIONS AND PENALTIES

Most of the enforcement cases we reviewed began with a tip from an employee or other individuals. The states and EPA generally succeeded in obtaining criminal convictions (or civil penalties) against people caught illegally disposing of hazardous wastes. Penalties imposed were generally well below the maximum allowed by law, but prosecuting attorneys told us that more recent penalties are tougher and should help deter illegal disposals.

The states we reviewed believe that administrative authority to issue civil fines without going to court would be helpful in expediting enforcement action.

### MOST ENFORCEMENT CASES BEGIN WITH A TIP FROM EMPLOYEES OR OTHERS

In 34 of the 36 enforcement cases we reviewed, a tip from a citizen, an employee, or other individual was responsible for the state's detecting the illegal disposal. As a result of these tips, the state (or county) initiated special inspections or investigations to determine the validity of the alleged illegal activities. Sixteen of the 34 cases began with citizen complaints. For example, in one case a citizen complained to a city department of odorous liquid flowing onto the street. A subsequent investigation showed that a metal-plating firm was discharging hazardous waste (containing such toxic substances as cyanide, chromium, and lead) onto its property which flowed onto adjacent property and into the street. In 13 cases an employee of the police department, road department, city sanitation department, or other governmental unit reported the illegal activity. In five cases an employee or former employee at the firm subsequently charged informed the authorities. The remaining two were discovered by a hazardous waste inspector while responding to complaints against other generators.

### STATES AND EPA HAVE WON MOST ILLEGAL DISPOSAL CASES

Generally, the four states have been successful in their actions against those caught illegally disposing of hazardous wastes. Civil or criminal proceedings were completed in 28 of the 36 state cases we analyzed. The states had obtained criminal convictions, civil penalties, or a court order for injunctive or other relief for each of the 28 completed cases. The fines imposed ranged from \$250 to \$100,000, and prison

sentences ranged from 20 days to 7 years. (See the table on page 39 for information on the fines and penalties obtained for the completed cases.)

Information supplied to us by EPA indicates that until fiscal year 1983, when EPA's National Enforcement Investigations Center was established as an investigative unit to coordinate the agency's environmental criminal enforcement activity, EPA successfully prosecuted only a few cases involving illegal disposals. During fiscal years 1983 and 1984 (as of March 31, 1984), however, EPA had developed and referred 14 cases to the Department of Justice for criminal prosecution. Acting for EPA, Justice had completed criminal proceedings in 10 of the 14 cases and had obtained convictions in all of the completed cases.

In one case, however, a U.S. district court dropped criminal charges of illegal disposal of hazardous waste without a permit against two supervisory employees of a New Jersey truck repair firm. The firm pleaded guilty in September 1983 to three criminal charges under RCRA of disposing of hazardous waste without a permit and was fined \$20,000 on each count. In dropping criminal charges against the two employees, the court maintained that Congress intended to limit the definition of liable "person" to the owner/operator who is responsible for obtaining RCRA permits. The court's decision was reversed on appeal. But according to the Director, Environmental Crimes Unit of the Department of Justice, other courts may not rule in a similar fashion. Variant rulings could cause serious enforcement and prosecution problems if the situation is not remedied.

Two bills were introduced in the 98th Congress (H.R. 5002 and S. 2741) to make corporate officers and employees also responsible for criminal acts with respect to hazardous waste activities. The Director of the Environmental Crimes Unit told us that this legislation is necessary so that the courts will clearly understand the liability of corporate officers and employees for criminal acts under RCRA. The 98th Congress closed without acting on this proposed legislation.

PENALTIES ASSESSED ARE BELOW MAXIMUM  
ALLOWED, BUT STATE OFFICIALS BELIEVE  
THEY DETER ILLEGAL DISPOSALS

Although sentences and fines imposed for the 28 completed illegal disposal cases we reviewed were generally below the maximum allowed under the law, state officials told us that those imposed, particularly in more recent cases, have deterred illegal disposal. These officials believed that fines, and especially jail sentences, serve as a warning to those considering illegal disposal.

Maximum Penalties and Penalties  
Imposed For Completed Cases

<u>Case number</u>	<u>Maximum penalties allowed</u>		<u>Penalties Imposed<sup>a</sup></u>				<u>Month of resolution</u>
	<u>Sentence (years)</u>	<u>Fine</u>	<u>Sentence (prison)</u>	<u>Fine</u>	<u>Damages<sup>b</sup></u>	<u>Other</u>	
1	1	\$ 25,000	None	\$ 5,000	\$ 2,000	1 year probation	Apr. 1981
2	1	25,000	None	5,000		1 year probation	Aug. 1981
3	1	25,000	None	15,000	2,500	1 year probation	Oct. 1981
4	0	25,000	N/A	25,000	6,000		Oct. 1981
5	1	25,000	None	5,000		3 year probation	Oct. 1981
6	0	25,000	N/A	none	8,917		Dec. 1981
7	1	25,000	None	2,000		1 year probation	Apr. 1982
8	0	25,000	N/A	22,994		Injunction imposed	Aug. 1982
9	1	25,000	None	2,000	1,500	2 year probation	Sept. 1982
10	1	25,000	None	1,000			Nov. 1982
11	0	62,000	N/A	16,500			Dec. 1982
12	1	25,000	None	1,200		1 year probation	Feb. 1983
13	1	50,000	None	1,000		1 year probation	Apr. 1983
14	1	50,000	None	None		525 hours community service in lieu of 60 days in jail or 2 years probation and \$2,000 fine	June 1983
15	0	30,000	N/A	None		Company ordered to take steps to prevent cyanide releases from its operations	June 1983
16 <sup>c</sup>	70	550,000	3 years (suspended)	15,000			July 1983
16 <sup>d</sup>	10	50,000	3 years (suspended)	250		2 year probation	July 1983 <sup>f</sup>
16 <sup>e</sup>	0	1,650,000	N/A	15,000			July 1983 <sup>f</sup>
17	45	297,000	7 years	10,000			July 1983

Sentence number	Maximum penalties allowed		Sentence (prison)	Penalties imposed <sup>a</sup>			Month of resolution
	Sentence (years)	Fine		Fine	Damages <sup>a</sup>	Other	
18	0	\$ 25,000	N/A	\$ 10,000	\$ 25,000		July 1983
19	67	3,350,000	90 days	100,000			July 1983
20	10	500,000	None	27,575		Revocation of Industrial Waste Permit	Aug. 1983
21	1	25,000	None	None	921		Aug. 1983
22	0	25,000	N/A	1,000			Sept. 1983
23 <sup>b</sup>	5	250,000	None	None		1,200 hours of community service	Oct. 1983
23 <sup>b</sup>	5	250,000	90 days	10,000			Oct. 1983 <sup>f</sup>
24	6	15,300,000	20 days	2,000		2 year probation	Oct. 1983
25	0	85,000	N/A	4,000	15,000		Dec. 1983
26	2	100,000	None	None		750 hours of community service/ 3 year probation	Dec. 1983
27 <sup>g</sup>	2	100,000	120 days	None		1 year probation	Jan. 1984
27 <sup>h</sup>	2	100,000	None	None		1,000 hours of community service and 1 year probation	Jan. 1984 <sup>f</sup>
27 <sup>e</sup>	0	100,000	N/A	75,000	250,000	Advertise Incident in <u>Wall Street Journal</u> at a cost of \$34,410	Jan. 1984 <sup>f</sup>
28 <sup>c</sup>	230	1,515,000	3 years	None			Feb. 1984 <sup>f</sup>
28 <sup>h</sup>	235	1,492,500	3 years	None			Feb. 1984
28 <sup>d</sup>	35	307,500	5 years	None			Feb. 1984 <sup>f</sup>

<sup>a</sup>Based on case files reviewed.

<sup>b</sup>There is no limit on damage that may be assessed.

<sup>c</sup>Company president/chairman.

<sup>d</sup>Company employee.

<sup>e</sup>Company.

<sup>f</sup>Month of resolution is that of the company president or vice president. Actual month of resolution for other officials, employees, or the company may be different.

<sup>g</sup>Plant manager.

<sup>h</sup>Company vice president.

The Chief of the New Jersey Environmental Prosecution Section said that judges have recently started to administer tougher sentences against those convicted of illegal hazardous waste disposal. For example, in a case settled in February 1984, the president and vice president of a firm caught illegally disposing of hazardous waste were sentenced to 3 years in the state prison, and an employee was sentenced to 5 years. The head of the Los Angeles City Attorney's Environmental Protection Unit also cited recent examples of tough sentences and penalties. In a July 1983 case, the president of the firm was sentenced to 90 days in jail and fined \$100,000. In a January 1984 case, the company's vice president was sentenced to 120 days in jail, and the plant manager was required to perform 1,000 hours of community service; the company was fined \$75,000, assessed another \$250,000 for damages, and required to advertise its wrongdoing and penalty in the Wall Street Journal at a cost of about \$34,000. The New Jersey and Los Angeles attorneys told us that stiff fines and especially jail sentences deter illegal disposals. Illinois and Massachusetts environmental officials or attorneys made similar statements.

In commenting on a draft of this report, EPA added that publicizing successful prosecutions of illegal disposal cases can have a deterrent effect on potential violators. (See app. II.)

#### ADMINISTRATIVE CIVIL PENALTY AUTHORITY HELPFUL IN ENFORCEMENT

The environmental agencies in the four states we reviewed did not have administrative civil penalty authority, the authority to administratively issue civil penalties or fines to enforce hazardous waste regulations, but officials told us that it would help expedite enforcement actions. Currently, civil penalties must be levied by the state courts rather than administratively by the state environmental agencies.<sup>1</sup>

California, Illinois, Massachusetts, and New Jersey environmental agencies do not have administrative authority to issue civil penalties. In these states, such matters must be referred to the state attorney general to bring civil suit. However, state officials believe that administrative penalty authority would expedite enforcement action. The Enforcement Program Manager of the Illinois Environmental Protection Agency said that the length of time, often 3 to 4 years, required to litigate cases is a problem. He believes the time would be much shorter with administrative order authority because it would not

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<sup>1</sup>EPA pointed out in its comments on a draft of this report that states can also refer cases to EPA for possible administrative sanctions. (See app. II.)

necessarily require court proceedings. The Chief of the Massachusetts Attorney General's Environmental Protection Division, the Chief of the Toxic Substances Control Division of the California Department of Health Services, and the Director of New Jersey's Department of Environmental Protection each made similar statements.

As of August 31, 1984, EPA was in the process of proposing a regulation that would require all states to delegate administrative penalty authority to their environmental agencies. According to the Director of the RCRA Enforcement Division, the regulation process will take about 6 months to complete. He said that if the regulation becomes effective, states will be required to have administrative civil penalty authority in order to receive EPA's final authorization to administer their own hazardous waste programs. States that already have final authorization will be required to adopt administrative authority within 1 to 2 years of the effective date of the regulation. In commenting on a draft of this report, EPA emphasized its position that state administrative authority to issue civil penalties would be helpful in expediting enforcement actions. (See app. II.)

#### CONCLUSIONS

Thirty-four of the 36 enforcement cases reviewed began with a tip from a citizen, an employee, or someone else. In the remaining two cases, a member of a special investigating unit looking for illegal activity elsewhere discovered the illegal disposals.

For each of the 28 completed cases, the states have been successful in obtaining a fine, prison sentence, court order for injunctive, or other relief. While the penalties assessed generally were not the maximum allowed, they are getting stiffer; and state officials told us that stiffer sentences serve as an effective deterrent.

In addition, state officials told us that administrative authority to assess civil fines could expedite enforcement actions. EPA is in the process of proposing a regulation that would require all states to delegate administrative penalty authority to their environmental agencies.



## CHAPTER 7

### ADDITIONAL METHODS

#### FOR DETECTING OR DETERRING ILLEGAL DISPOSALS

We obtained information on several additional methods, not covered in federal regulations, used or considered by EPA or the four states reviewed for detecting or deterring illegal disposals. These methods involve (1) the use of various methods to tighten or supplement the manifest system, (2) encouragement of public involvement to report suspicious activity or violations, (3) the use of special investigative units, and (4) revocation of licenses for transporters convicted of illegal disposals. The first and last actions are directed at hazardous waste that is shipped off-site. The second and third actions apply to all potential violations of storage and disposal regulations. Because the extent of the illegal disposal problem is unknown, we could not determine the cost effectiveness of these additional methods but recognize that most would require additional resources to implement.

#### METHODS TO TIGHTEN OR SUPPLEMENT THE MANIFEST SYSTEM

EPA or the states reviewed have used or considered several methods to tighten or supplement the manifest system. These methods involve the use of (1) a shipment notice from generators to TSD facilities, (2) state manifest matching, (3) waste tax report matching against manifests, and (4) generator and TSD facility biennial/annual report matching.

#### Hazardous waste shipment notice regulation to detect forged manifests

When a generator contracts with a transporter for both transportation and disposal, it may create an incentive for the transporter to circumvent the manifest system and illegally dispose of the waste. Under such a contractual arrangement, the generator pays the transporter for both transportation and disposal, and the transporter pays the disposal fee when it delivers the waste to the TSD facility. If the transporter illegally disposes of the waste, it avoids paying the disposal fee.<sup>1</sup> If the transporter then forges the manifest indicating that the TSD received the waste, the generator receiving the forged manifest may not detect the problem.

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<sup>1</sup>No data were available on the disposal fee avoided by the two transporters caught forging manifests (discussed in chapter 4). However, in another enforcement case we analyzed, the transporter avoided paying a disposal fee of over \$7,000 by illegally disposing of a load (78 barrels) of hazardous waste.

When introducing manifest regulations, EPA contemplated additional regulations which would have made it difficult for transporters to circumvent manifest controls by forging manifests. EPA stated in the February 26, 1980, Federal Register, when introducing its manifest regulations, that it was considering additional regulations requiring generators to give TSD facilities prior notice of their hazardous waste shipments. This notice could be matched with the manifest when the waste is delivered to the TSD facility. An unmatched notice would indicate that the waste was not delivered. According to EPA's program manager for the Waste Information Program of the Permits and State Program Division, EPA did not issue prior notice regulations because it expected that most generators would contract directly with TSD facilities, and therefore additional communication in the form of a notice would be unnecessary.

On the basis of information provided to us by the largest commercial TSD facility in each of the four states reviewed, we found that the contractual relationship EPA expected has not developed in all cases. Rather, generators frequently contract with independent transporters for both transportation and disposal. Three of the four TSD facilities told us that from 45 to 60 percent of the generators disposing of waste in their facilities contracted with independent transporters for both transportation and disposal. The other facility said that 20 percent of the generators pay the transporter for both transportation and disposal.

#### GAO observation

A requirement that generators give TSD facilities prior notice of their hazardous waste shipments could tighten controls over illegal disposal by transporters. Such notification might be accomplished by having the generator mail a copy of the manifest to the TSD facility. The TSD facility would then be in a position to verify that the shipment was received.

A prior notice system, however, would duplicate information already exchanged in those cases where generators contract directly with the TSD facility for disposal services and could entail additional administrative expense for the generator and the TSD facility. Such duplication could be lessened by exempting the prior notice in those cases in which the generator contracts with the TSD facility for disposal.

An alternative to the prior notice might be to encourage or require generators to contract with independent transporters only for the transportation service. Such a requirement or practice would result in separate contracts and payments to the transporter and the TSD facility. This arrangement could reduce the economic incentive for the transporter to illegally dispose of the waste since it would no longer receive payment from the generator for disposal.

## State manifest matching to detect illegal disposals

California, Illinois, and Massachusetts were using computers to match manifests, and New Jersey was about to implement such a system in an attempt to detect shipments of hazardous wastes that did not reach approved TSD facilities.

The states use the manifest data for many purposes. For example, Illinois uses them for monitoring a hazardous waste tax imposed on TSD facilities. However, we only reviewed the effectiveness of the states' manifest matching process.

Manifest matching by states requires input from generators and TSD facilities. In states that match manifests, generators are required to send the state a copy of the manifest upon shipment of hazardous wastes, and TSD facilities are required to send a copy to the state when they receive the wastes. The states enter manifest data into their computers and match manifest copies. If no match is achieved within specified time limits, the computer generates an exception, just as the generator would note an exception if it did not receive a manifest copy back from the TSD facility.

State manifest matching has resulted in numerous exceptions (unmatched manifests) but has not identified illegal disposals. The situation in the three states varies:

--After the first 11 months of operation the California system had about 31,000 unmatched manifests and an additional 39,000 manifests in a suspense file due to incomplete or erroneous data on the manifest, out of a total of about 121,000 manifests received. To resolve these discrepancies, the state followed up with letters to generators and TSD facilities, but over the months the number of unresolved exceptions increased. According to the Supervisor of the Management Information System Unit of the Toxic Substances Control Division, California Department of Health Services, California does not maintain summary records on followup actions, but followup is showing that most exceptions were the result of administrative error, such as failure to send a copy of the manifest to the state.

--According to the Manifest Sub-Unit Supervisor for the Illinois Environmental Protection Agency, the Illinois system produced about 1,200 exceptions during fiscal year 1983 out of about 280,000 to 360,000 manifests processed for both hazardous and special wastes. He said that exceptions were primarily the result of paperwork errors.

--The Massachusetts Department of Environmental Quality Engineering stated in a written response to our questions that about 48,000 manifests were received during the year ending September 30, 1983, but the department had no data on the number requiring followup and the number checked out. The department stated that current staffing levels did not permit investigation of all exceptions and that they are checked out only in conjunction with complaints or other enforcement actions.

According to state officials in California, Illinois, and Massachusetts, 2 to 3 years from the date of implementation are needed to resolve manifest accuracy and computer programming problems associated with a computerized matching system. According to the Manifest Sub-Unit Supervisor for the Illinois Environmental Protection Agency, because of these problems, its system did not attain a high level of accuracy until late 1982, nearly 3 years after initial operations. The Chief of the Toxic Substances Control Division, California Department of Health Services, said that California's system would not be fully operational until early 1985, over 2 years after its initial operation in January 1983. Massachusetts estimates that its system will be fully implemented in mid-1985, provided the state legislature provides the needed funds; its program also started operation in January 1983.

#### GAO observation

Although the states reviewed may use manifest data effectively for other purposes, they could not cite any illegal disposal cases identified through computer matching of manifests. The states have experienced problems in getting complete and accurate data from generators and TSD facilities and in "debugging" computer programs. Coupled with these problems are the time and cost to implement and administer the matching process. State matching during the systems' first 3 years has resulted in numerous exceptions, more than the states had resources to follow up.

Despite the problems experienced by states in matching manifests, we believe that such an effort may be a deterrent to illegal disposals. It seems reasonable, for example, that a transporter would be concerned about the state's raising questions when the matching process shows that the TSD facility did not send a copy of the manifest to the state.

#### Waste tax report verification to detect forged manifests

According to the Compliance Monitoring Chief of the Illinois Environmental Protection Agency, forged manifests could be identified through monthly checks by his agency to verify the accuracy of TSD facilities' fee reports for an Illinois tax on

hazardous wastes. This report is for tax collection. Illinois TSD facilities prepare the report monthly on hazardous waste shipments received from generators. The state checks the TSD facilities' monthly reports against manifest data in its system. The Chief said that if a transporter illegally disposed of hazardous wastes and sent a falsified manifest to the state (and generator) indicating that the TSD had received the wastes, the taxes due reported by the TSD would be less than those due according to the state's manifest data, and the illegal disposal and forged manifest would surface when the state and the TSD attempted to resolve the discrepancy. However, no illegal disposals had been discovered through this method as of December 1983.

#### GAO observation

Use of TSD facility hazardous waste fee reports to detect cases where the transporter illegally disposed of waste and forged the manifest could help detect illegal disposals, but no such cases have been identified by the Illinois system. If a transporter illegally disposed of wastes and falsified state manifest copies, the state's tax checks would show a tax discrepancy and thorough followup to resolve this discrepancy should disclose the illegal transporter. Because this method is a by-product of another regulatory effort, the collection of hazardous waste taxes, no additional reporting is required.

However, this method does have some limitations. For example, the tax verification would not detect illegal disposal for shipments purportedly shipped to an out-of-state facility because Illinois does not impose a tax on out-of-state facilities. Further, this method has limitations for nationwide application because all states do not require monthly fee reports from TSD facilities, and all states do not have generator manifest data on file.

#### Biennial/annual report matching to detect falsified manifests

New Jersey plans to use the TSD facility's annual report on hazardous wastes received to identify cases where the transporter has forged a manifest to falsely indicate that a TSD facility has received the hazardous waste shipment. New Jersey TSD facilities and generators must attach to their annual reports a listing by manifest control numbers covering each load of hazardous waste they have received. The state plans to match the control numbers on these listings with control numbers on manifests it has received during the year and stored in its computer. Followup on unmatched loads could lead to the discovery of forged manifests.

### GAO observation

New Jersey's plan for identifying cases where the transporter illegally disposed of wastes and forged the manifest could work. The control numbers for a forged manifest would not show up on the TSD facility listings because the facility had not received the wastes. The state's manifest data, however, would show that the generator had sent a shipment to the facility. A match between the listings and state data would identify shipments that never reached the TSD facility, much the same way as the state's computerized matching system, except that the illegal transporter could not falsify a TSD facility's annual/biennial report as it can forge the TSD facility's manifest document.

Potential problems in implementing such a plan throughout the nation include:

- Resources are needed to follow up on unmatched loads, many of which may be caused by missing, incomplete, or inaccurate data on the annual report or manifest.
- Delays can occur in identifying illegal disposals and gaps in coverage because of federal biennial reporting requirements. Federal regulations require a report every even-numbered year on the previous year's activities.
- Matching would not identify the falsified manifests for those shipments purportedly sent to an out-of-state TSD facility. The state would not have the annual reports for out-of-state TSD facilities.
- Only states which require generators to send them manifest copies could match annual/biennial report data with manifest data. Other states may have nothing to match the TSD facilities' manifest listings against.

A modification to the New Jersey plan may work in states that do not receive manifest copies from generators. Federal requirements for generator and TSD facility reporting allow states to directly compare a generator's shipments of hazardous wastes during a year with the TSD facility's receipts. Under federal regulations, a generator must report on the types and quantities of waste sent off-site during the reporting year, and these data must be listed separately for each TSD facility used. The TSD facility must report on the types and quantities of waste received during the year, listed separately by each generator. State report regulations must be at least the equal of these requirements. Therefore, a comparison of a generator's report with the report of the TSD facility that the generator reported using should show whether the TSD facility received the waste.

## INSTITUTIONAL AWARENESS AND PUBLIC INFORMANT PROGRAMS

As discussed in chapter 6, citizens, employees, or others have been responsible for the states' detecting illegal storage or disposal in 34 of the 36 enforcement cases we reviewed. EPA's Director of the Permits and State Program Division said that institutional awareness and public informant programs at state and county levels could be an effective tool in curbing illegal disposals. Following is a description of institutional awareness and public informant programs which were being used or planned by the states reviewed.

### Institutional awareness programs

New Jersey's Division of Criminal Justice and Department of Environmental Protection, along with the Northeast Hazardous Waste Coordination Committee,<sup>2</sup> have sponsored training courses and seminars to inform government employees of the problem of illegal disposal and of their potential role in detecting and preventing it. The courses are designed for state and local prosecutors and police and county health, building, and fire inspectors. The courses range from 1-day awareness seminars to week-long technical training courses.

People that attended the training courses told us about the benefits of this training. As a result of attending an awareness seminar, for example, a state trooper knew whom to call when he saw a tanker truck dumping hazardous waste on the side of the road. In another case, a local policeman spotted what appeared to be drums filled with hazardous waste in a wooded area and notified the proper authorities. The person who dumped the drums was discovered through an investigation and was indicted for illegal disposal. A county health inspector who attended a course called proper authorities when he saw a business dumping waste.

### GAO observation

Educating employees of state and local institutions involves cost but could help detect illegal hazardous waste disposals. These people, in the course of their normal duties, may

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<sup>2</sup>The Northeast Hazardous Waste Coordination Committee is a cooperative multi-state venture to coordinate and provide resources to participating legal, public safety, and environmental agencies with regard to the regulation and enforcement of hazardous waste transportation, storage, treatment and disposal. The participating states are Connecticut, Delaware, Maine, Maryland, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, and Vermont.

come across incidents that should be reported to the appropriate authorities but that, without training, they may not know to report.

### Public informant programs

California and New Jersey have laws authorizing awards to people who provide information that results in an illegal disposer's arrest and conviction. California is implementing such an awards program, and New Jersey plans to do so.

California regulations for its law became effective on February 29, 1984. They allow a maximum state payment to the informant of 10 percent of the fines collected up to \$5,000. The state, however, has not implemented the program yet.

California plans to implement the program with a publicity campaign using television, radio, and newspaper advertisements. It also plans to post notices at various locations, including firms generating or transporting hazardous waste and at various governmental institutions. This campaign will be designed to assist the public in

- recognizing the problem,
- understanding the effects of illegal disposals, and
- knowing to whom to report incidents of illegal disposal.

The Chief of the Regulation Management Unit of the Toxic Substances Control Division, California Department of Health Services, the person in charge of implementing the California program, would like to implement the program with such features as

- a toll-free "hotline" telephone service,
- a well-designed form for gathering data from callers, and
- sufficient and qualified staff to answer the hotline calls.

New Jersey's law authorizes the payment of one-half of the penalty collected for illegal disposal. The state has not paid anyone for information under this law but plans to advertise the law in the future. At the time of our review, New Jersey had not completed its plan.

### GAO observation

As discussed in chapter 6, information provided by informants led to the discovery of 34 of the 36 enforcement cases we examined. We do not know the impact that the financial



incentive of an award would have on detecting illegal disposals since neither California nor New Jersey has implemented its program. However, such programs, along with their publicity campaigns and "hotlines," might help to detect or deter illegal disposals.

A public informant program, however, involves administrative costs for hotlines, public messages and notices, and trained people to listen to and follow up on leads, plus the additional costs of an award. However, a percentage of the penalties collected could be used to cover the cost of awards to informants, and the costs of administering the program may be offset, to some extent, by increased penalty collections resulting from the program.

#### LOCAL GOVERNMENTAL AGENCY INVESTIGATIVE ACTIONS

The Los Angeles County Health Department's Hazardous Waste Control Program and the Los Angeles City Attorney's Environmental Protection Unit, in related operations, identified (or helped to identify), investigated, and/or prosecuted 24 of the 36 illegal disposals reviewed.

Los Angeles County Health Department's Hazardous Waste Control Program Unit responds to hazardous waste complaints. This unit is staffed by 22 full-time professionals--6 industrial waste specialists and 16 sanitary engineers. The county's staff routinely inspects generators for compliance with the state hazardous waste law and investigates possible illegal disposals in response to agency and citizen complaints. The county unit is funded through a hazardous waste generator permit fee. This is the same unit discussed in chapter 3 that is involved in identifying hazardous waste generators.

The Los Angeles City Attorney's Environmental Protection Unit complements the county unit by providing legal and investigative advice and prosecuting cases of illegal disposal. When necessary, the city unit assembles an interagency team of specially trained personnel for a "strike force" operation. The team consists of personnel from such agencies as the county sheriff and health departments, the city fire department, and the city attorney's office, and the strike force has chemical sampling, search warrant, subpoena, and investigative capabilities not totally present in any one of the agencies participating in the operation.

City and county staff involved in this hazardous waste operation believe that interagency cooperation and local media attention have helped obtain information about illegal disposals. Twelve of the 24 illegal disposal cases investigated by the county began as leads provided by other departments such as

the county road department, county flood control department, and city police department. Ten cases were initiated as the result of citizen complaints and informants. A county unit investigator discovered the remaining two cases when responding to other complaints. Enforcement action was completed in 21 of the 24 cases and resulted in fines or prison sentences.

The Director of EPA's Office of Waste Programs Enforcement said that local investigative units can be an effective means of combating illegal disposals, but he believed that state oversight of the activities of such units may be necessary to assure complete and consistent enforcement.

#### GAO observation

These two units identified and prosecuted (or helped to identify and prosecute) two-thirds of the enforcement cases examined in the states reviewed. Much of the success of these units may be attributed to the resources which they have committed to the task. For example, the Los Angeles County unit employs 22 hazardous waste generator inspectors/investigators. We saw no similar level of effort at the county level in the other states reviewed, and no comparable unit at the state level so devoted to looking for illegal disposals.

#### REVOCACTION OF TRANSPORTER LICENSES

Aside from fines and penalties imposed as a result of enforcement against hazardous waste transporters, each of the four states in our review could revoke state-issued transporter licenses.<sup>3</sup>

In the four states reviewed, transporters were required to obtain a license or permit from the state. Transporters could not legally operate within the state without this license, and the license could be revoked or denied if the transporter had illegally disposed of hazardous wastes.

In three of the four states, licensed transporters had to meet certain minimum requirements before a license was issued. For example, in California, Massachusetts, and New Jersey, transporters had to submit proof of liability insurance. This insurance requirement is substantial. For example, in California it is \$600,000 or \$1,200,000, depending on the type of waste handled. Each of the three states also required transporters to register each vehicle used to transport hazardous

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<sup>3</sup>Under federal regulations, hazardous waste transporters must obtain an EPA identification number. The EPA number represents neither a permit nor a license; it is a means of identifying the transporter.

waste. California and Massachusetts inspected each of these vehicles prior to issuing a license, and in New Jersey, vehicles were subject to inspection. For the one remaining state, Illinois, transporters did not have to meet any specific requirement to obtain a license (termed a permit by Illinois). The permit was issued upon application.

We found enforcement cases in three of the four states reviewed where transporters were convicted of or had civil penalties imposed for illegal hazardous waste disposals. There was one case in New Jersey and the firm went out of business after being convicted of illegal disposals. New Jersey had revoked the licenses of two other firms after charges were filed, but before legal proceedings were complete. California had three completed cases, but the transporters' licenses had not been revoked. One of the California licenses had been allowed to expire and the transporter had not applied for renewal. In the other two cases, Los Angeles County had taken civil or criminal action against the firms, but the state licensing unit had no knowledge of the county's actions; therefore, the state had not revoked the firms' transporter licenses. When we advised the state of the illegal activities of these firms, the Chief of the Surveillance and Transportation Unit of the Toxic Substances Control Unit, California Department of Health Services, said that he would review the cases for possible recommendation for license revocation. In Illinois, one transporter had been convicted of illegal disposal. Illinois denied this firm's application for license renewal, the firm went out of business, and the owner reopened under a new name and was given a permit.

One major difference between New Jersey law and the law in the other states in our review may account for the difference in the licensing status of transporters caught illegally disposing of hazardous wastes in those states. Under New Jersey law, transporter license revocation is mandatory upon conviction of illegal hazardous waste disposal. When applying for or when renewing its annual license, a transporter is asked whether it or any of its employees has been convicted of illegal storage or disposal. Under the law in the other states reviewed, a transporter's license may be revoked for illegal hazardous waste disposal. No questions are asked about previous convictions for illegal storage or disposal when a California and Illinois transporter applies for or renews its license, but such information is requested of Massachusetts transporters.

#### GAO observation

The threat to a transporter of losing its license may deter illegal disposal. The insurance requirements and safety inspections performed by the states may deter a transporter that,

without the licensing requirement, could obtain an EPA identification number, represent itself to generators as an authorized transporter, do business for a short time and illegally dispose of the wastes, and leave the area when authorities discover its operation. Further, revocation of hazardous waste transporter licenses has the potential to keep transporters that illegally dispose of hazardous wastes out of the business. However, only in New Jersey, where license revocation is mandatory upon conviction of such a crime, have revocations actually occurred. Also, EPA or EPA-authorized states may have problems in assuring that those that lose their license do not reenter the business under other names.

### CONCLUSION

The states we visited and EPA have considered or implemented additional regulatory and non-regulatory methods to deter or detect illegal disposals. These methods involve new or improved regulatory controls, such as tightening or supplementing the manifest system, and non-regulatory measures, such as encouraging greater public involvement in reporting illegal activities and using special investigative units to identify and prosecute violators. Additional regulatory measures may result in increased deterrence, but on the basis of our enforcement case reviews and discussions with EPA and state officials, we found that they may do little to detect a violator determined to illegally dispose of hazardous wastes. Non-regulatory public informant and investigative units, on the other hand, appear to be better suited to detection and subsequent prosecution. Because the extent of the illegal disposal problem is unknown, we could not determine the cost effectiveness of these additional measures. We recognize, however, that each would require additional resources to implement. While we make no recommendations regarding the use of these additional measures, we believe that a combination of regulatory and non-regulatory approaches is necessary to achieve a balanced enforcement program of effective deterrence and detection.

### AGENCY COMMENTS

EPA, DOT, and California provided written comments on a draft of this report (see apps. II, III, and IV, respectively). EPA did not comment on the report's overall message or any of the conclusions but did provide clarifying or additional information on several specific points. These comments have been added to the report where appropriate. DOT had no recommended changes to the report. California agreed with the report's major conclusions. In addition, it made several suggestions to improve the detection or deterrence of illegal disposals, most of which are addressed this chapter. Illinois and Massachusetts orally indicated that they had no comments. New Jersey indicated orally that they agreed with the overall message and conclusions.

LIST OF ENFORCEMENT CASES ANALYZED<sup>1</sup>Case #1 - Generator with EPA and/or state ID number

A small metal-processing company allowed a "makeshift" nitric acid rinse system to overflow on a regular basis. The acidic discharge flowed from the business to a street drainage system. As a result of this operation, extensive concrete deterioration occurred to the drainage system.

Case #2 - Generator with EPA and/or state ID number

A manufacturing company shipped five 55-gallon drums of metal residue contaminated with sulfonated cutting oil to an unauthorized landfill. The hazardous waste contained excessive levels of copper, nickel, and chromium.

Case #3 - Generator without EPA and/or state ID number

An industrial cleaning products firm dumped a liquid waste containing trichloroethylene and tetrachloroethene into an open pond from which it flowed via a trench into a flood control channel.

Case #4 - Generator without EPA and/or state ID number

Over a 13-year period, a steel-finishing firm dumped paint residue containing lead chromates, lead compounds, and paint solvents into a square seepage pit measuring 9 feet wide by 10 feet deep. Although the amount of waste disposed of is unknown, the generator had eight 55-gallon drums of the hazardous waste residue when caught.

Case #5 - Transporter with EPA and/or state ID number

A liquid waste recovery company made several pickups of hazardous wastes from a medical laboratory. The transporter dumped 600 gallons of solvents into a stream bed. The discharge material contained xylene, ethanol, toluene, and other chemical solvents.

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<sup>1</sup>The information listed is based on case files maintained by the investigating or prosecuting agencies. Legal action resulting in conviction was completed in 28 of these cases at the close of our review. In eight cases the illegal disposal is alleged.

Case #6 - Transporter without EPA and/or state ID number

A septic tank servicing company sprayed 3 loads of clay slurry contaminated with lead (about 2,500 gallons) into an open field. The actions allegedly took place with the permission of the tenant in exchange for septic tank services, but without permission of the property owner. The servicing company operator claimed he did not know that the slurry was a hazardous waste.

Case #7 - Generator without EPA and/or state ID number

A manufacturing company dumped an estimated 10 gallons of highly flammable, liquid solvent into a trash bin.

Case #8 - Generator with EPA and/or state ID number

A metal-plating company discharged metal acids on its property, and the hazardous waste flowed onto adjacent property and into the street. Heavy metal contamination consisting of lead, copper, chrome, nickel, and silver was detected in soil samples taken on and adjacent to the property.

Case #9 - Generator without EPA and/or state ID number

A pool-cleaning company discharged muriatic acid to the ground while cleaning filter disks. The street gutter was severely etched as the result of this practice over a period of time.

Case #10 - Generator without EPA and/or state ID number

A machine shop operation periodically hosed out a cleaning tank, allowing solvents and metal wastes to flow to the street and into a storm drain. The hazardous waste discolored and contaminated the ground with a residue of heavy metals.

Case #11 - Generator with EPA and/or state ID number

An industrial cleaning products manufacturer disposed of 16 barrels containing cyanide-contaminated waste products at the side of a road.

Case #12 - Generator without EPA and/or state ID number

An auto repair shop dumped a mixture of water and carburetor fluid down a drain which led to the street and the gutter. Also, on consecutive days, 3 to 5 gallons of phenol and water residue were found in a trash bin.

Case #13 - Generator without EPA and/or state ID number

An automotive repair shop disposed of 5 gallons of carburetor cleaner to the street by watering down a spill on the company's asphalt driveway. As the result of the discharge to the street, a nearby resident suffered from chemical pneumonia and others complained of the odor.

Case #14 - Generator without EPA and/or state ID number

On several occasions a battery refurbisher dumped an unknown amount of battery acid onto the ground, forming a pool of liquid waste.

Case #15 - Generator without EPA and/or state ID number

State investigators traced the path of contamination from a garden in which cyanide had destroyed the vegetables to its source: a trophy manufacturer. The investigation also proved that the company, as a matter of routine operation, dumped cyanide waste into the sewer.

Case #16 - Generator without EPA and/or state ID number

An automotive repair shop paid an employee \$5 per drum to dispose of sixteen 55-gallon drums of paint thinner waste. The drums were abandoned at three different roadside locations.

Case #17 - Transporter without EPA and/or state ID number

An employee of a hazardous waste generator conspired with another individual to illegally dispose of at least 386 drums (21,230 gallons) of hazardous wastes consisting of paint sludges and solvents. The employee and his co-conspirator charged the generator for both transportation to and disposal at an approved TSD facility. They illegally disposed of the wastes and forged the manifest indicating that the wastes were sent to an approved TSD facility.

Case #18 - Generator without EPA and/or state ID number

An auto-parts-plating company discharged an unknown amount of plant wastewater containing cyanide, chromium, copper, zinc, and nickel into the county sewer system.

Case #19 - Transporter with EPA and/or state ID number

A company which picked up tanks containing metal waste residues (chromium, copper, nickel, zinc, and lead ions) removed the liquid wastes and dumped them down the sewer as opposed to disposing of them at an approved disposal facility. The wastes

were dumped into the county sewer system at the rate of about 2,000 gallons per week.

Case #20 - Generator without EPA and/or state ID number

A metal-plating company dumped an unknown quantity of hazardous wastes containing cyanide, chromium, copper, and zinc into the county sewer system without a permit.

Case #21 - Generator without EPA and/or state ID number

A furniture stripping company disposed of about 400 gallons of paint stripping sludge containing lead, copper, and zinc contaminants into a flood control catch basin.

Case #22 - Generator without EPA and/or state ID number

A weed control company dumped about sixty 55-gallon drums containing tar, paint wastes, and an industrial solvent--tetrachloroethene--into a ravine. When found, many of the drums were rusted and leaking.

Case #23 - Generator without EPA and/or state ID number

A metal-recovery company was disposing of its own wastes in an oil field that the company leased in a national forest. An employee tipped authorities of the company's plan to dump sixty 40-gallon drums of cyanide waste. Subsequently, law enforcement officials established surveillance over the area, watched the illegal disposal, then followed the van back to the warehouse where an investigation found 2,000 gallons of acids (copper hydroxide), 330 gallons of cyanide, and 110 gallons of caustic wastes stored illegally.

Case #24 - Generator without EPA and/or state ID number

An electroplater abandoned his business, leaving 3,000 gallons of cyanide plating wastes on the premises. The state prosecutor stated that the leaking materials, if allowed to remain, might have generated large quantities of hydrogen cyanide gas into the neighborhood. He also suspected that the electroplater illegally disposed of additional wastes off-site.

Case #25 - Transporter with EPA and/or state ID number

A waste oil company placed an unknown amount of waste oil mixed with water into a leaking underground storage tank as a method to recover the oil floating on top of the water while letting the water drain into the ground. Subsequently, the soil and ground water were discovered by state investigators to be contaminated with trichloroethylene, tetrachloroethylene,



tetrachlorobenzene, toluene, xylenes, benzenes, naphthalene, and other carcinogenic and toxic chemicals and substances.

Case #26 - Generator without EPA and/or state ID number

An engine and mechanical equipment remanufacturer placed about 600 gallons of corrosives, solvents, and oil wastes into a large roll-away trash bin. The hazardous waste contained the following metals and dangerous chemicals: lead, zinc, acetone, toluene, benzene, trichloroethylene, 2-hexaneon, methylcyclohexane, ethylbenzene, xylene, and isopropyl alcohol.

Case #27 - Generator with EPA and/or state ID number

A metal-fabrication and -processing plant discharged an estimated 4,000 gallons of dangerous toxics, including hexavalent chromium and various corrosive chemicals, into the county sewer system. County health officials cited the threat of the corrosives mixing with the cyanide wastes to form toxic gases. In addition, the company contaminated the soil in several locations by allowing solidified chrome and nickel particulates, waste caustic soda, and cooling oil to reach the ground during its milling and annealing process.

Case #28 - Transporter/TSD facility with EPA and/or state ID number

A transporter/TSD facility altered shipping documents as to the types and amounts of hazardous wastes that it could legally receive. It also hired an unauthorized trucker to illegally dispose of 71 drums of caustic liquids.

Case #29 - Generator with EPA and/or state ID number

A battery-lead recovery operation discharged acid wastes to the ground, some of which were flushed into an adjacent flood control channel. The wastes, consisting of lead oxides and acids, were described by county investigators as potentially injurious to the workers and to the neighborhood environment. Toxic lead concentration in soil samples was more than 1,000 times the maximum concentrations allowed by state law.

Case #30 - Generator without EPA and/or state ID number

A battery-recycling business discharged lead and acid wastes into the city sewer system, onto the ground, and into trash bins that were subsequently taken to a landfill unauthorized to accept hazardous waste. Laboratory analysis of the soil samples taken in the industrial area immediately surrounding the business and in a nearby residential area revealed substantial

lead contaminates. The county health department recommended that the soil in these areas be removed to a depth of 6 inches to restore environmental equilibrium.

Case #31 - Transporter with EPA and/or state ID number

A transporter abandoned a stolen truck trailer loaded with 78 drums of sulfuric acid and cyanide wastes. Subsequent investigation not only identified the transporter but also connected this company with six other incidents of illegal disposal in three additional counties.

Case #32 - Transporter with EPA and/or state ID number

A transporter illegally stored 77 drums of acids and solvents at a truck stop and also disposed of an unspecified amount of hazardous waste at various unauthorized locations. This transporter had forged manifest documents indicating that the waste was received by an approved TSD facility.

Case #33 - Transporter with EPA and/or state ID number

A transportation company falsely represented to generators that hazardous waste removed by the company would be repackaged and reshipped to an authorized facility. However, it stored hazardous wastes at two unauthorized locations, disposed of wastes down the city sewer, and sent hazardous wastes to an unauthorized landfill. Twelve hundred drums of highly flammable wastes were stored in a building adjacent to a fully occupied high-rise tenement.

Case #34 - Generator with EPA and/or state ID number

A salvage company illegally stored hazardous wastes in its warehouse.

Case #35 - Generator with EPA and/or state ID number

An electroplating company illegally dumped on its property, over an unknown period of time, about 40 gallons a day of liquid wastes containing cadmium and perchloroethylene.

Case #36 - Generator without EPA and/or state ID number

A film recovery business illegally stored 16 million pounds of cyanide-contaminated film chips in 171 truck trailers parked at nine locations.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
WASHINGTON, D.C. 20460

JAN 2 1985

OFFICE OF  
POLICY, PLANNING AND EVALUATION

Mr. J. Dexter Peach  
Director  
Resources, Community and Economic  
Development Division  
U.S. General Accounting Office  
Washington, D.C. 20548

Dear Mr. Peach:

On November 28, 1984, the Environmental Protection Agency (EPA) received the General Accounting Office (GAO) draft report entitled "Difficulties Remain In Preventing Illegal Disposal of Hazardous Waste." EPA reviewed the draft report and has prepared this formal response, with an enclosure, as required by Public Law 96-226. Below is a brief general statement and enclosed are detailed comments, referenced to pages of the draft report.

The report did not mention that States can refer cases to EPA for possible civil or criminal sanctions. EPA encourages the States to refer appropriate violations to EPA's regional offices for issuance of Federal enforcement actions. EPA can take direct enforcement actions against the violating facilities in cases where the States have been unsuccessful in obtaining compliance. The Interim National Criteria for a Quality RCRA program calls for direct enforcement action by EPA in States with interim-authorization where the States lack the means or the will to enforce.

Publicizing successful prosecutions of illegal disposals of hazardous waste can have a deterrent effect on potential violators. EPA believes that the GAO draft report should discuss this as a preventive measure.

We appreciate the opportunity to comment on the draft report, and hope the enclosed comments are useful.

Sincerely yours,

A handwritten signature in cursive script that reads "Milton Russell for".

Milton Russell  
Assistant Administrator for  
Policy, Planning and Evaluation

Enclosure

Specific Comments on the GAO Draft Report,  
"Difficulties Remain In Preventing Illegal  
Disposal of Hazardous Waste"

Pages 22 and 23

In discussing the accuracy of reports submitted by generators, GAO fails to point out that verification would be impossible unless the quantity and quality of wastes generated were uniform. In the next paragraph, the statement is made that generators, who falsify their RCRA annual reports, would probably also falsify their production records. In high volume, low cost per unit volume process lines, records are usually no better than 70% accurate. Therefore, falsification would not be necessary.

Pages 27 to 29

The discussion on the limitations of the "Exception Reporting" system does not identify the key reason for the low number of reports, namely the unwillingness of the generator to "turn-in" its low-bid transporter. This is especially true for smaller volume generators who routinely have great difficulty finding transportation for their waste.

Pages 41 and 42

The report states that administrative authority to issue civil penalties is helpful in expediting enforcement actions. This is a position which EPA has taken for some time. The demonstrated result of "swift justice" is an increase in voluntary compliance.

[GAO note: Page references in this appendix which referred to the draft report were changed to reflect their location in this final report. The clarifications or additions offered by EPA have been included in the report where appropriate.]



U.S. Department of  
Transportation

Assistant Secretary  
for Administration

400 Seventh St., S.W.  
Washington, D.C. 20590

DEC 28 1984

Mr. J. Dexter Peach  
Director, Resources, Community  
and Economic Development Division  
U.S. General Accounting Office  
Washington, D. C. 20548

Dear Mr. Peach:

We have reviewed the General Accounting Office draft report,  
"Difficulties Remain in Preventing Illegal Disposal of Hazardous  
Waste." We have no comments at this time, however, we reserve the  
opportunity to comment on the final report.

If we can be of further assistance, please let us know.

Sincerely,

A handwritten signature in cursive script that reads "Jon H. Seymour".

Jon H. Seymour  
Acting

STATE OF CALIFORNIA—HEALTH AND WELFARE AGENCY

GEORGE DEUKMEJIAN, Governor

## DEPARTMENT OF HEALTH SERVICES

714/744 P STREET  
SACRAMENTO, CA 95814  
(916) 324-1826



DEC 12 1984

J. Dexter Peach, Director  
United States General Accounting Office  
Washington, D.C. 20548

DRAFT REPORT: "DIFFICULTIES REMAIN IN PREVENTING ILLEGAL DISPOSAL OF  
HAZARDOUS WASTE"

We appreciated the opportunity to review your draft report on illegal disposal of hazardous waste. We agree with the major conclusions and are hopeful that its findings will stimulate discussions of this problem in Congress in 1985.

California suspects that illegal disposals do constitute a significant problem. Unfortunately we can't substantiate our suspicions because we suffer from the same lack of quantitative data that other states are limited by. The GAO report finds that small generators (1000 kg/mo) tend to be the ones that are unknown to us, and to EPA; we agree and would go so far as to say that the small generators and transporters are the most likely to illegally dispose, whether it is out of ignorance, intent, economic incentives, or lack of sophistication. We support the small generator changes brought about by the RCRA reauthorization (Solid Waste Management Act Amendments of 1984) as a recognition of the importance of the small generator problem. Unfortunately, the case descriptions in Appendix I of the report illustrate the typical small generator illegal disposal problems that will probably continue to occur, even with a regulatory framework in place.

We believe we're on the right track in supporting county-operated generator identification programs. Counties are much more likely to be aware of events within their boundaries than are regional state offices. Likewise, the report supports our belief that detection of illegal disposals will always be best accomplished by aware municipal employees, citizens, and fire and safety personnel.

Ideally, prevention of illegal disposal and its accompanying effects depends on knowledge of and voluntary compliance with current rules by generators. However, the generator community is not perfectly compliant and it is necessary for government to enforce its regulations. We believe that most of the regulatory activity should take place at the local level and should emphasize prevention followed by enforcement and cleanup where prevention has failed. Prevention activity should encompass education on proper disposal, storage, treatment, transportation, toxic effects, and consequences of improper handling; deterrence (such as heavy penalties backed up by visible enforcement and reporting, as in the manifest program); and public awareness and involvement, which we believe has yet to be fully explored. The GAO report testifies to the positive effects of educated, aware citizens and public sector employees.

Enforcement, we believe, also belongs to the locality. California is almost totally dependent on the localities to prosecute cases and the money penalty structures in California statutes reflect that emphasis by allocating much of the penalty payment to the office bringing the case to closure.

If Congress were to call on California to suggest a national solution to illegal disposal, our plan would probably include:

1. Launching an aggressive national campaign to educate everyone on hazardous waste, from the householder on up, but targeting the small business generator.
2. Instituting a program something like Neighborhood Crime Watch that allows citizen involvement in surveillance. We'd back it up with informant rewards as we did here in California in 1983.
3. Being mindful that intense regulation often generates economic incentives to illegally dispose. Therefore, statutory and regulatory frameworks should strive to reward compliance where that is possible, making lawful disposal a positive act in the mind of the would-be disposer, rather than a negative one.

In closing, California generally agrees that illegal disposal is difficult to prevent, and it will continue to be so as long as there is ignorance of proper disposal techniques, incentives to dispose illegally, and business ethics that emphasize pecuniary gain over public health and environmental protection. Generator identification, wastestream identification, manifests, inspections and reporting all have their places in revealing and tracking hazardous waste, but none will prevent a determined dumper. The best we can hope for is an aware, educated citizenry that cares enough to report what it sees. The best deterrent of all is a half billion watchful eyes.

Sincerely,



Richard P. Wilcoxon, Chief  
Toxic Substance Control Division

