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SUPERFUND

Progress, Problems, and
Reauthorization Issues

Statement of
Richard L. Hembra,
Director, Environmental Protection Issues,
Resources, Community, and Economic Development Division



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Mr. Chairman and Members of the Subcommittee:

We appreciate the opportunity to be here today to discuss the progress that has been achieved in the Environmental Protection Agency's (EPA) Superfund program, problems with the operation of the program, and the major issues that need to be considered in the reauthorization debate. Our testimony today is based on numerous reviews we have conducted of Superfund issues. Appendix I lists our relevant reports and testimonies.

In summary, the Superfund program--originally envisioned as a short-term project to clean up a limited number of hazardous waste sites--has become an expensive, contentious, and long-term effort involving potentially thousands of sites. Although the Superfund program has made some progress, especially in responding to emergency releases of hazardous substances and in enforcing the cleanup obligations of polluters, a formidable task remains and difficult issues need to be addressed if this program is to operate efficiently and effectively. We believe the following are the main Superfund issues needing attention:

- First, how can the pace of site cleanups be accelerated? For the foreseeable future, EPA expects that more sites will enter the cleanup process than leave it. Consequently, the number of sites either waiting to be cleaned up or somewhere in the process can be expected to increase.
- Second, how can Superfund costs be better controlled? While cleanup costs are mounting, high administrative costs and contract mismanagement have wasted trust fund resources. At the same time, EPA's low recovery of past cleanup costs has driven up the federal government's share of these costs. In addition, the transaction costs associated with the Superfund enforcement and liability system need to be assessed to determine whether they can be reduced.
- Third, how effective are completed cleanups in protecting human health and the environment? The permanence of some cleanup remedies is uncertain. Over the next few years, as more cleanups are completed, the efficacy of cleanup remedies will need to be monitored and evaluated.
- Last, what is the appropriate level of federal investment to address the human health and environmental risks posed by hazardous waste sites? These risks have not been adequately defined. The Congress and the public need better information to help set expectations for the program in light of alternative possible uses for scarce environmental protection resources.

BACKGROUND

Before discussing each of these issues in more detail, I would like to briefly review the Superfund program's development and operation.

The program was created by the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) to clean up the nation's most dangerous hazardous waste sites. This act provided EPA with a \$1.6 billion fund accumulated from special taxes, general revenues, and other sources to carry out cleanup activities. In addition, the Congress provided EPA with strong enforcement authorities to make parties that were responsible for site contamination either clean up the sites themselves or reimburse EPA for government-funded cleanups. The program has since been reauthorized twice, bringing the cumulative authorization to \$15.2 billion.

The scope and cost of Superfund have greatly exceeded initial expectations. The Superfund cleanup list has grown from 406 original sites in 1983 to 1,275 sites at the end of fiscal year 1992, and EPA expects the list to approach 2,000 sites by the year 2000. The \$15.2 billion now authorized will not come close to paying the federal government's \$27.2 billion share of the cleanup costs for already listed sites--according to EPA's latest published estimate.¹ Moreover, the ultimate costs and number of sites needing cleanup could be much higher than EPA's estimates. A 1991 University of Tennessee study estimated that, if Superfund grew to 3,000 sites, cleanup costs for EPA and the private sector--excluding costs for federal facilities and Superfund's program administration--could amount to \$150 billion in undiscounted 1990 dollars over the next 30 years.

A description of the Superfund process may help in understanding our discussion of the issues. When a hazardous waste site is identified, EPA begins a series of evaluations to determine whether contamination is serious enough to include the site on the National Priorities List (NPL), the official list of Superfund sites. Once listed, the site becomes eligible for remedial actions to permanently clean up the pollution. To identify the most appropriate remedial action (or cleanup) at each NPL site, EPA conducts a remedial investigation and feasibility study to (1) assess the types and quantities of hazardous waste present and (2)

¹ The costs of cleaning up the federal government's hazardous waste sites are also considerable. For example, cleanup cost estimates for two agencies with the most serious environmental problems, the Department of Defense and Department of Energy, are close to \$200 billion. These costs will be paid for out of agency budgets and other appropriations, not the Superfund trust fund.

consider alternative cleanup remedies. After completing these studies, EPA chooses a remedy and documents its choice in a Record of Decision (later referred to as a cleanup plan). During the remedial design phase, implementation plans for the selected remedy are developed. Once designed, a remedial action can be constructed. Finally, after the remedy has been constructed and all cleanup actions and administrative processes have been completed, the site may be deleted from the NPL. Of course, EPA can take emergency removal actions to address immediate, serious site threats at any time during the process.

EPA relies almost exclusively on private contractors to carry out Superfund cleanups. A very large portion of the program's funds have been obligated for contractors' costs, mostly through cost-reimbursable contracts. These contracts, compared with fixed-price contracts, transfer more of the risk of unexpected cost increases to the government, while at the same time offering the agency more flexibility in assigning work to its contractors. However, they require careful government oversight to avoid contractor abuses.

Now, I would like to highlight some of the Superfund program's accomplishments.

ACCOMPLISHMENTS SHOULD NOT BE OVERLOOKED

Although Superfund cleanups are few, the program is not without its successes, one of the most noteworthy of which is its emergency removals. Superfund money can be used to respond to hazardous waste emergencies at both NPL and non-NPL sites. Such emergencies can range from accidental spills to serious public health or environmental threats posed by long-standing hazardous waste problems. Emergency removals include such activities as treating, removing, or containing wastes; installing site security; providing safe alternative water supplies; or relocating residents. The program's accomplishments in this area have been considerable; more than 3,200 emergency actions had been taken at 2,540 sites as of the end of fiscal year 1992.

EPA's enforcement efforts have also been productive in recent years. Beginning in 1989 EPA strengthened its efforts to get responsible parties to meet their cleanup obligations in an initiative called "Enforcement First." This initiative has worked. The value of responsible party cleanup settlements--that is, agreements to undertake privately financed site cleanups--increased from about \$200 million in fiscal year 1987 to over \$1.5 billion in fiscal year 1992. From October 1989 through fiscal year 1992, EPA estimates that it has achieved responsible party settlements totaling \$5.4 billion.

Finally, we would like to mention that cleaning up hazardous waste sites has proven to be more difficult than was originally

expected when the Superfund program was established. During the course of our work, we have had an opportunity to inspect numerous NPL sites in various stages of cleanup--from sites just entering the process to those that are complete. For example, at four sites located in the Clark Fork Basin in Montana, over a century of mining, milling, smelting, and wood treating have left a major contamination problem on 50,000 acres that stretch about 140 miles along the Clark Fork River and its tributaries. Cleaning up these sites will be a complex, costly, and time-consuming challenge for EPA and the state of Montana.

Other sites are not as complex and progress has proceeded further. For example, we recently inspected in rural Illinois a municipal landfill that accepted municipal and industrial waste until 1973. The cleanup work is now complete and the site, which was placed on the NPL in 1983, is about to be deleted from the list. During site investigation work, EPA found contamination from metals, polychlorinated biphenyls (PCBs), and organic chemicals in site groundwater, soil, and sediments in the nearby river. Then, under EPA oversight, responsible parties cleaned up the site by installing a landfill cap and a groundwater extraction system that sends contaminated water to the municipal water treatment plant. In all, the cleanup took about 9 years and, according to an EPA estimate, cost EPA and the responsible parties about \$10 million dollars. One could argue, of course, that it still took too long to solve the problem and cost too much money. But the fact is, this program took a hazardous, potentially health-threatening landfill and controlled the threat to the community.

Although the program has had its accomplishments, as we all know, many problems continue to plague it. Let me turn my attention to some of these problems and issues that need to be addressed as we prepare for Superfund reauthorization.

PACE OF CLEANUPS NEEDS TO BE ACCELERATED

The first issue I would like to raise is the slow pace of Superfund cleanups--one of the most frequently criticized aspects of the program. The progress of sites that have entered the Superfund cleanup "pipeline" has become sluggish, in part, because of a lengthy study and evaluation process, and few sites have emerged from the end of the pipeline. The challenge facing EPA is how to unclog the Superfund pipeline without sacrificing cleanup quality. Also, EPA needs to consider how it can further develop states' cleanup capabilities to help supplement its own efforts.

At the end of fiscal year 1992, EPA had completed remedial construction and removal work at only 149, or 12 percent, of the 1,275 Superfund sites. Forty of these sites have been cleaned up and deleted from the NPL. At the remaining 109 sites, the remedy has been constructed, but final cleanup levels have yet to be achieved because long-term cleanup measures, such as groundwater

pumping, are still under way, or the sites were going through various steps in the deletion process, such as obtaining state concurrence on EPA's intention to delete a site. Cleanup work was under way at an additional 374 sites. The remaining 752 sites have progressed no further than the remedial study or design phase of the process and are still years away from being cleaned up.

To illustrate how slowly the Superfund process moves, appendix II compares the status of the sites in the cleanup pipeline in October 1986 and in September 1992. As this figure shows, in 1986, only 25 of the 888 sites in the Superfund pipeline had been cleaned up. Six years later 387 additional sites have entered the pipeline, but only an additional 15 had been completely cleaned up. This leaves 1,235 sites--97 percent of all Superfund sites-- still in the cleanup process. Moreover, many of these sites will still be in the process well beyond the end of the century.

In fairness to EPA, many of these cleanups are lengthy because they are complex and, with existing technology, will require sustained action over many years to achieve targeted cleanup goals. However, a major cause of the slow cleanup pace is the extended time that EPA takes to choose and design a cleanup remedy. These study and design phases have grown longer over time. Site studies once expected to take 2 years to complete are now lasting 4 years or more. Remedial designs that were done in 18 months are now taking 3 years. Add to these time frames another 3 years needed to complete the cleanup action, and the average cleanup now requires about 10 years.

In response to criticism of the slow pace of Superfund cleanups, in October 1991 EPA set goals for speeding up cleanups and has begun to experiment with ways to expedite the process. EPA established new goals for completing construction at Superfund sites; under the goals, an average of about 65 sites is to be completed per year through the end of this decade. Historically, however, EPA has also added about 100 new sites annually to the program. To keep this backlog of sites from growing, EPA will need to shorten cleanup study and construction time.

In addition, EPA in early 1992 announced a new initiative, referred to as the Superfund Accelerated Cleanup Model (SACM). Among other things, this model calls for combining the removal and remedial parts of the program and for standardizing investigation procedures and remedies to help accelerate the initial assessments and subsequent cleanups of Superfund sites. While we certainly

support the intent of this initiative, it is still too early to determine what effect it will have.

Moreover, EPA also needs to deal with the significant problem of cleaning up federal facilities. Although federal agencies should set the example for hazardous waste management, they have made limited progress in Superfund site assessments and cleanups. In fact, even less progress has been made on federal sites than on other Superfund sites. Currently, a backlog of federal sites awaits assessment for inclusion in the Superfund program that, at present rates of progress, could take decades to clean up. In addition, no federal sites have been completely cleaned up, and few have even entered the cleanup phase.

Finally, EPA also needs to explore the potential for assigning increased responsibility to the states as a way of expediting action on hazardous waste sites. Even if EPA succeeds in streamlining its process, major Superfund cleanups will continue to take many years and cost tens of millions of dollars. In addition, EPA has a backlog of over 7,000 sites awaiting final evaluation for inclusion on the NPL and several thousand more sites that are being assessed. We have estimated that 130,000 or more additional sites are possibly contaminated.² Nevertheless, the Congress has held funding for Superfund steady in recent years. The combination of high cleanup costs and numerous potential sites limits Superfund's capacity to deal with the nation's hazardous waste problem. In the past we have reported that, while cleanup capabilities vary widely among the states, some states have substantial cleanup programs and others are developing them.³ EPA may be able to transfer additional responsibilities to at least some states for cleanup of some sites, such as those where responsible parties are agreeing to perform cleanups.

COST OF CLEANUPS IS HIGH

The second issue that I would like to raise is the high costs associated with Superfund cleanups. As you know, Superfund's current \$15.2 billion authorization represents only a partial payment on a much larger cleanup bill facing this program. As previously mentioned, EPA's latest estimate of the government's share of cleanup costs for already listed sites is \$27.2 billion. This estimate, by the way, is substantially understated in our view because it omits the costs for sites that will be added to the NPL

²Superfund: Extent of Nation's Potential Hazardous Waste Problem Still Unknown (GAO/RCED-88-44, Dec. 17, 1987).

³Hazardous Waste Sites: State Cleanup Status and Its Implications for Federal Policy (GAO/RCED-89-164, Aug. 21, 1989).

in the future and does not reflect realistic costs for completing ongoing cleanups at already listed sites.⁴

With this high price tag, the federal government must find ways to achieve cleanups cost effectively. However, a number of cost concerns raise serious questions about the program's efficiency.

High Administrative Costs

One such cost concern is the high percentage of trust fund moneys that EPA is spending on administrative matters. As appendix III shows, about 44 percent (\$4.6 billion) of the \$10.5 billion total Superfund appropriations through fiscal year 1992 went for actual cleanup operations--that is, emergency removals and the design and implementation of cleanup remedies. Another 11 percent (about \$1.2 billion) went for enforcement activities. The remaining \$4.7 billion, or 45 percent of Superfund's budget, was earmarked for areas that EPA describes as support activities. Some of these support costs pay for such necessary program activities as the staff to oversee removal and remedial work and research and development. However, the proportion of costs going for things other than actual cleanups is so large that it warrants scrutiny by EPA and the Congress.

In addition, EPA's large outlays of Superfund dollars to contractors raises concerns about the cost-effectiveness of having work performed by contractors rather than in-house personnel. The Director, Office of Management and Budget, has also recently raised this issue and directed federal agencies to assess the cost-effectiveness of work performed by contractors. At EPA, this issue is compounded by the agency's heavy use of cost-reimbursable contracts, which require a significant commitment of resources to properly administer. As we mention in the next section, EPA has not always followed sound contract management practices--resulting in wasteful spending. In addition, it has had problems controlling the administrative costs charged by some of its Superfund contractors.

Need for Better Contract Management

Superfund's contract management controls and oversight also need to be improved. A very large portion of the program's money has been paid to contractors that study site contamination, design and build remedies, help EPA with enforcement, and do other Superfund tasks. Most of these contractors work under cost-reimbursable contracts that promise to pay all of a contractor's allowable costs and, hence, provide little incentive for

⁴Superfund: EPA Cost Estimates Are Not Reliable or Timely
(GAO/AFMD-92-40, July 1, 1992).

contractors to control their costs. Partly for this reason, we have selected Superfund as 1 of 17 federal programs most vulnerable to fraud, waste, and abuse.

Our work has disclosed weaknesses in EPA's contracting policy and administration that have exposed Superfund to excessive costs. Many of these problems involved breakdowns in the controls over contractor costs. For example, with cost-reimbursable contracts, EPA should carefully review contractors' spending plans before approving them, check bills for allowable charges before paying them, and verify charges later by auditing contractors' records. However, we have reported that EPA has not adequately used these controls.⁵

The following examples illustrate how trust fund money can be wasted in the absence of effective contractor oversight. We testified in March 1992 that one of Superfund's largest contractors included about \$2.3 million of expenses not allowable under the Federal Acquisition Regulation (FAR) in its indirect cost pool, a portion of which is charged to EPA.⁶ These expenses included alcoholic drinks at company parties and travel by nonemployee spouses.

Cost control has been largely neglected, while EPA management's attention to the Superfund program has been focused on trying to get sites cleaned up. For instance, remedial contractors' program management costs--in large part, their administrative charges--have been too high because EPA hired more contractors than it needed. While EPA officials were aware of the problem, they have been slow to reduce contracting capacity because of concern that cleanups would be delayed if the work load increased. So far, EPA has terminated only one contract. We are currently reviewing the extent of and reasons for these high program management costs as well as the agency's plans to control these costs on the next generation of Superfund cleanup contracts.

⁵Superfund Contracts: EPA Needs to Control Contractor Costs (GAO/RCED-88-182, July 29, 1988); EPA's Contract Management: Audit Backlogs and Audit Follow-up Problems Undermine EPA's Contract Management (GAO/T-RCED-91-5, Dec. 11, 1990); Superfund: EPA Has Not Corrected Long-Standing Contract Management Problems (GAO/RCED-92-45, Oct. 24, 1991).

⁶Federally Sponsored Contracts: Unallowable and Questionable Indirect Costs Claimed by CH²M Hill (GAO/T-RCED-92-37, Mar. 19, 1992).

Further, in October 1991 we reported that EPA had not corrected long-standing contract management problems.⁷ We said that a pattern was apparent in EPA's response to contract management deficiencies--namely, extended study of the problems, sometimes leading to revised plans or procedures, but with insufficient follow through to actually get the problems corrected. The underlying causes of this pattern seemed to be a lack of high-level attention to contract management and the delegation of responsibility to the regions without sufficient oversight and accountability.

EPA is taking steps that, if fully implemented, will address many of the weaknesses that we have just discussed. For example, EPA has (1) elevated the agency's procurement function within the organization, (2) required development of independent cost estimates against which it can compare contractors' spending proposals, (3) increased contract audit resources, and (4) reported Superfund contract management as one of the agency's internal weaknesses. In addition, the agency has recently placed limits on its previously open-ended indemnification of contractors--that is, its agreements to pay for any damages caused by contractor negligence at Superfund sites. While these actions are consistent with some of our recommendations, we believe that it will take strong commitment and follow-up on the part of EPA management to effectively implement these initiatives.

Cost Recovery

Besides needing to improve contract management to reduce excessive government costs, EPA needs to focus more attention on its limited recovery of its past cleanup costs from responsible parties--another factor that drives up the federal government's share of Superfund cleanup costs. As of September 30, 1992, EPA had collected just 10 percent of the \$5.7 billion that it had classified as recoverable from responsible parties. Our reports have identified the following causes of this low recovery: inadequate records to evaluate recovery efforts, understaffing, failure to pursue many costs, and statutory restrictions on interest charges. EPA has proposed a rule that would almost triple the amount of indirect costs that it could seek to recover from responsible parties, but other changes are needed. For example, EPA needs to develop the necessary information to assess the adequacy of its efforts to recover past costs.

In addition, CERCLA limits the amount of interest costs EPA can seek to recover from responsible parties in two ways. First, the act allows interest accrual to begin from the date that funds are spent or the date that payment is demanded, whichever is later.

⁷Superfund: EPA Has Not Corrected Long-Standing Contract Management Problems (GAO/RCED-92-45, Oct. 24, 1991).

EPA sometimes waits several years after funds are expended to demand repayment, thereby significantly limiting the amount of interest accrued and thus recoverable. Second, CERCLA allows EPA to charge interest only at the government's borrowing rate and not at higher commercial interest rates. We estimated that in 1990 alone EPA could have accrued \$105 million in interest on its fiscal year 1989 expenditures if both of these statutory limits on interest charges had been changed. Moreover, the provision of charging the lower government borrowing rate, in effect, represents a subsidy to the responsible parties that leave their cleanups to the government. This subsidy results because responsible parties that borrow money for cleanups have to obtain financing from lenders at commercial rates, while the parties that reimburse EPA are charged the government's lower borrowing rate.

High Operations and Maintenance Costs

A growing concern is the high costs associated with operating and maintaining Superfund sites once remedies have been constructed. This cost issue is becoming more visible with the rising number of sites moving into this stage of the cleanup process. At the end of fiscal year 1992, nearly half (or 72) of the 149 sites where construction is complete or that have been deleted from the NPL required operation and maintenance. The payment of these costs falls on the states for fund-financed cleanups and responsible parties for privately financed cleanups.⁸ And these costs can be considerable. For example, an EPA contractor estimates that states will incur about \$1 billion in operation and maintenance costs over the next 8 years. Concerns also have been raised about the ability of some states and responsible parties to finance these long-term costs. This concern raises a serious issue since EPA says that CERCLA prohibits it from performing and paying for operations and maintenance once a remedy is in place. In an ongoing review we are examining the challenges that EPA will face in managing and monitoring sites that have been deleted from the NPL or where construction has been completed.

Transaction/Liability Costs

Another cost concern involves transaction, or liability costs. In addition to the litigation expenses and other costs incurred by EPA and responsible parties as a direct result of EPA's enforcement program, Superfund has produced a second round of litigation among the responsible parties and between these parties and their insurance companies over how to share cleanup costs. Local governments and small businesses that may have contributed relatively small portions of toxic substances to contaminated sites

⁸Nine states and other parties are litigating EPA's position that CERCLA requires the states to finance 100 percent of the operation and maintenance costs.

have been drawn into the legal battles. Since some sites have hundreds of responsible parties that may have one or more insurers, some Superfund legal cases have become very difficult and time-consuming to resolve. On the other hand, Superfund's system of liability, in making those who caused the cleanup problem responsible for cleanup costs, provides an incentive for good waste disposal practices.

Some parties and insurers have called for changes to the Superfund enforcement and liability system to reduce litigation. But before a change in Superfund's liability system can be justified, we need to explore the possibility of reducing costs within the present system. For example, under Superfund EPA can use certain settlements, called de minimis settlements, for parties who contributed only small amounts of contaminants to sites. These settlements generally protect these parties against suits by other responsible parties. In our 1989 report we found that this authority was not being used often.⁹ The increased use of this settlement authority would reduce some of the more controversial litigation surrounding the program. We are currently reviewing EPA's use of available enforcement tools to reduce these costs.

EFFECTIVENESS OF COMPLETED CLEANUPS IS UNCERTAIN

The third issue I would like to discuss is the effectiveness of completed site cleanups. An effective cleanup should be fully protective of human health and the environment and should maintain this protection over time.

Last year we reported problems with EPA's remedy selection process that raised serious questions about the completeness and consistency of cleanup decisions at Superfund sites.¹⁰ Specifically, based on our case study of 34 cleanup plans, we found examples of sites where cleanup decisions had been made despite the fact that cleanup goals were not established for hazardous contaminants or were not set for all polluted media, such as soil or groundwater. Other cleanup plans had insufficient justification for selecting a particular cleanup remedy. Such plans do not meet EPA's program guidance and provide inadequate assurance that the cleanup remedy will provide sufficient long-term protection of human health and the environment.

In the past, cleanup effectiveness has been difficult to assess primarily because few site cleanups had been completed. The question of how to choose cleanup remedies for sites has tended to

⁹Superfund: A More Vigorous and Better Managed Enforcement Program Is Needed (GAO/RCED-90-22, Dec. 14, 1989).

¹⁰Superfund: Problems With the Completeness and Consistency of Site Cleanup Plans (GAO/RCED-92-138, May 18, 1992).

overshadow consideration of whether the remedies chosen actually work. As more sites begin to leave the pipeline, the question of how effectively cleanup has been achieved will become a central issue. We currently have an ongoing review that is analyzing the cleanup efforts and costs incurred at the 149 sites that were deleted from the NPL or classified as "construction complete," as of the end of fiscal year 1992. When this review is completed, which we anticipate will be this summer, we expect to report the cleanup successes and problems that have been encountered at these sites and the implications they may have for sites still in the pipeline. With EPA projecting that 200 sites will have completed construction of the remedial action by the end of fiscal year 1993 and 650 by the year 2000, we believe that in the future greater attention needs to be focused on how successful remedies are at permanently eliminating or controlling contamination.

One area that has a significant impact on the effectiveness and cost of cleanups is technology. Currently, available technologies are often expensive, ineffective, or unacceptable to the public. There are already some signs of problems with the effectiveness of remedies. For example, some clay "caps" that were built to isolate contaminated soil have failed to do so because, over time, they have cracked and allowed contaminants to migrate from the site. Also, an EPA study of one of the most common Superfund remedies--pumping and treating groundwater--raises serious questions about the effectiveness of this technology for remedying certain types of groundwater contamination. After examining 19 sites where pumping and treating techniques had been used for up to 10 years, the study concluded that contamination had been reduced, but not to target levels. More disturbingly, once the pumps were turned off, contaminant concentrations rose again since contamination sources had not been eliminated.

Last year we testified that EPA's efforts to develop innovative technologies were piecemeal and lacked a systematic plan and strategy for identifying and ranking cleanup technology needs.¹¹ Although EPA was reporting that the number of innovative technology field demonstrations and innovative technologies selected for use in cleaning up Superfund sites had increased, we found that EPA had not systematically assessed Superfund site cleanup needs, had trouble matching new technologies with the requirements of specific sites, and lacked reliable cost and efficacy data on innovative technologies, which hampered their use. In addition, we found that requirements for issuing permits, as well as regulations and agency policies, served as barriers to the development and use of innovative technologies.

¹¹Superfund: EPA Needs to Better Focus Cleanup Technology Development (GAO/T-RCED-92-92, Sept. 15, 1992).

With increased emphasis on faster cleanups, more responsible-party cleanups, and pressure for the use of cost-effective remedies, EPA must make every effort to ensure the effectiveness and integrity of Superfund site cleanups.

LEVELS OF RISKS AND INVESTMENT HAVE NOT BEEN ADEQUATELY IDENTIFIED

The last issue is that the Congress and the public need more precise evaluations of hazardous waste site risks to make decisions on what the long-term investment in Superfund should be. If the problem is overstated, resources may be misallocated to a less important environmental issue; if it is understated, an important need may not be adequately addressed.

In September 1990 EPA's Science Advisory Board recommended that EPA's program priorities be better aligned with health and environmental risks.¹² In effect, the board advocated spending money where it would do the most good, that is, where it would reduce health and environmental dangers the most. We have also recommended that EPA work with the Congress to allocate resources according to severity of risks posed by environmental problems and educate the public about relative environmental risks.¹³

The potential scope of the federal hazardous waste site cleanup effort is enormous. The Office of Technology Assessment (OTA) estimates that Superfund could eventually include 10,000 sites or more.¹⁴ As I mentioned earlier, estimates of the ultimate federal costs of cleaning up hazardous waste sites are considerably higher than EPA's current \$27.2 billion estimate. Superfund already accounts for about one-quarter of EPA's budget. Thus, these spiraling cleanup costs place ever-increasing demands on the Superfund trust fund. Furthermore, Superfund is just one part--perhaps even the tip of the iceberg--of the government's cleanup obligation when the hundreds of billions of dollars needed to clean up federal facilities are also considered.

The dimensions of the federal cleanup effort to address such a potentially massive and expensive job need to be based on good information about health and environmental threats. But the scope of Superfund has not been fully justified on the basis of risk.

¹²Reducing Risk: Setting Priorities and Strategies for Environmental Protection, Relative Risk Reduction Strategies Committee, EPA Science Advisory Board (Sept. 1990).

¹³Environmental Protection: Meeting Public Expectations With Limited Resources (GAO/RCED-91-97, June 18, 1991).

¹⁴Coming Clean: Superfund's Problems Can Be Solved, U. S. Congress, Office of Technology Assessment (Washington, D.C.: U.S. Government Printing Office, Oct. 1989).

For example, our August 1991 report on the Agency for Toxic Substances and Disease Registry (ATSDR), a U.S. Public Health Service unit responsible for assessing the health dangers of Superfund sites, showed that the agency has not adequately assessed the health risks of many sites.¹⁵ In fact, because of the questionable value of the assessments we reviewed, we stated that the Congress may wish to consider if the CERCLA requirement for ATSDR health assessments should be continued--after allowing sufficient time for the agency to improve the quality and usefulness of its assessments. EPA's Office of Inspector General is currently reviewing whether the usefulness of these assessments has improved.

CONCLUSIONS

In conclusion, Mr. Chairman, through its removal function, Superfund has performed a valuable service by alleviating emergency conditions at hazardous waste sites, and through its enforcement efforts, EPA has convinced many responsible parties to meet their obligations to help restore contaminated areas. Potential Superfund liability may also have made the handlers of hazardous substances more careful about waste disposal. However, despite a large investment of resources, Superfund has so far achieved little of its primary purpose: the permanent cleanup of major hazardous waste sites. EPA must find ways to increase the speed and control the costs of cleanups, or the logjam of sites "in process" could grow even larger and the already high costs rise beyond the nation's ability to pay for them. Questions about the health and environmental risks of Superfund sites need to be better resolved to ensure that Superfund spending levels are appropriate. Since these issues are interrelated, improvements in one area may result in direct benefits to other areas. For example, increasing the speed of the process may reduce the costs of the program; better defining the health and environmental risks could help in the development and selection of cleanup remedies.

It is important, then, in this short time before Superfund is scheduled for reauthorization, to look for solutions to the issues that we have highlighted today--streamlining the cleanup process, better controlling costs, assessing the effectiveness of cleanup actions, and getting a better handle on the risks posed by hazardous waste sites. We look forward to assisting the Subcommittee in further consideration of these and other issues in any future reauthorization hearings.

Mr. Chairman, this concludes my prepared statement. I will be glad to respond to any questions that you or members of the Subcommittee may have.

¹⁵Superfund: Public Health Assessments Incomplete and of Questionable Value (GAO/RCED-91-178, Aug. 1, 1991).

RELATED GAO PRODUCTS

High Risk Series: Superfund Program Management (GAO/HR-93-10, Dec. 1992).

Superfund: EPA Needs to Better Focus Cleanup Technology (GAO/T-RCED-92-92, Sept. 15, 1992).

Federal Facilities: Issues Involved in Cleaning Up Hazardous Waste (GAO/RCED-T-92-82, July 28, 1992).

Superfund: EPA Cost Estimates Are Not Reliable or Timely (GAO/AFMD-92-40, July 1, 1992).

Superfund: Problems With the Completeness and Consistency of Site Cleanup Plans (GAO/RCED-92-138, May 18, 1992).

Federally Sponsored Contracts: Unallowable and Questionable Indirect Costs Claimed by CH²M Hill (GAO/T-RCED-92-37, Mar. 19, 1992).

Superfund: EPA Could Do More to Minimize Cleanup Delays at the Clark Fork Sites (GAO/RCED-92-20, Nov. 21, 1991).

Superfund: EPA Has Not Corrected Long-Standing Contract Management Problems (GAO/RCED-92-45, Oct. 24, 1991).

Superfund: Public Health Assessments Incomplete and of Questionable Value (GAO/RCED-91-178, Aug. 1, 1991).

Superfund: More Settlement Authority and EPA Controls Could Increase Cost Recovery (GAO/RCED-91-144, July 18, 1991).

Environmental Protection: Meeting Public Expectations With Limited Resources (GAO/RCED-91-97, June 18, 1991).

Hazardous Waste: Pollution Claims Experience of Property/Casualty Insurers (GAO/RCED-91-59, Feb. 5, 1991).

EPA's Contract Management: Audit Backlogs and Audit Follow-up Problems Undermine EPA's Contract Management (GAO/T-RCED-91-5, Dec. 11, 1990).

Potential Liability of Property/Casualty Insurers for Costs of Cleaning Up Hazardous Waste Sites (GAO/T-RCED-90-109, Sept. 27, 1990).

Superfund: A More Vigorous and Better Managed Enforcement Program Is Needed (GAO/RCED-90-22, Dec. 14, 1989).

Implications of State Cleanups of Hazardous Waste Sites on Federal Policy (GAO/T-RCED-90-5, Nov. 7, 1989).

Superfund: Contractors Are Being Too Liberally Indemnified by the Government (GAO/RCED-89-160, Sept. 26, 1989).

Hazardous Waste Sites: State Cleanup Status and Its Implications for Federal Policy (GAO/RCED-89-164, Aug. 21, 1989).

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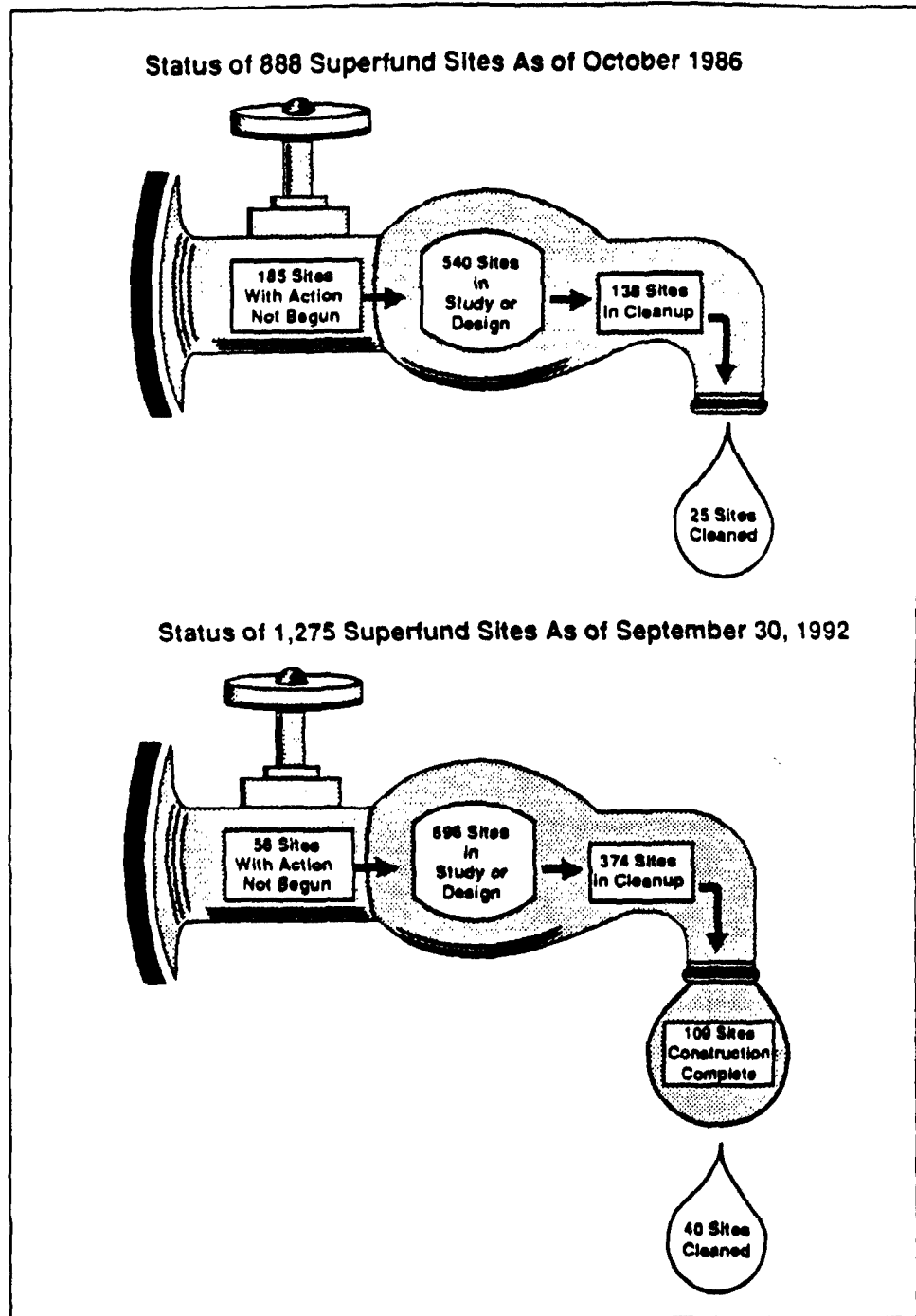
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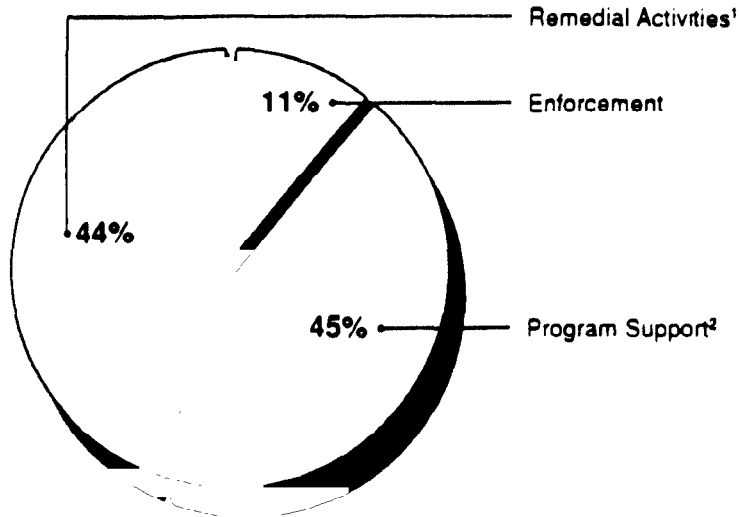
THE SUPERFUND PIPELINE IN 1986 AND 1992

The Superfund Pipeline 1986 and 1992



PERCENTAGE OF PROGRAM COSTS ASSOCIATED WITH
THE VARIOUS PROGRAM ACTIVITIES

Percentage of Program Costs Associated
With Remedial, Enforcement, and
Support Activities



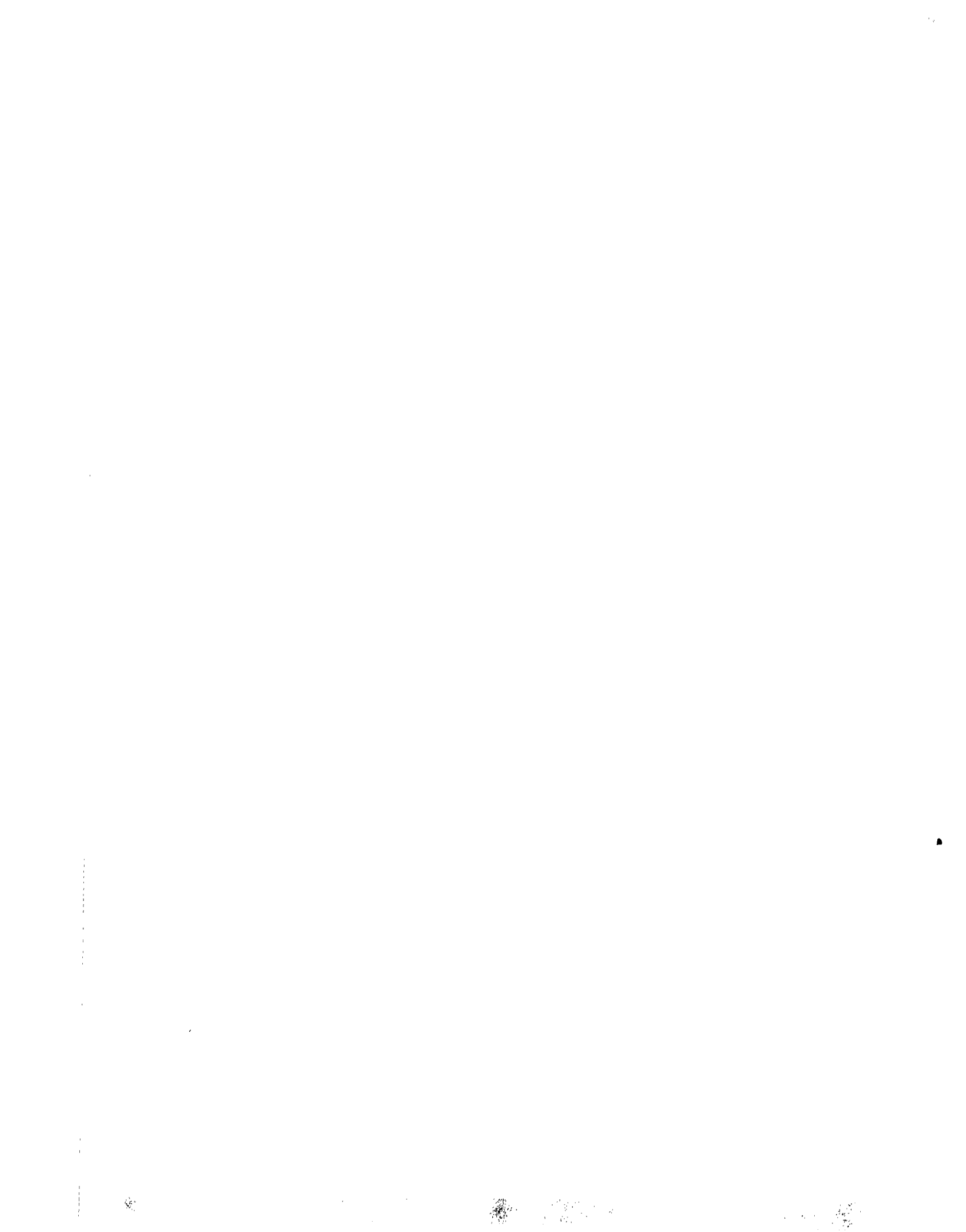
Source: GAO presentation of EPA data as of the end of fiscal year 1992.

¹Remedial activities include the following: remedial investigation/feasibility studies, remedial designs, remedial actions, and removals.

²Program support includes such activities as site assessments, lab analysis, and R & D

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