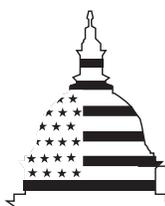


May 2000

SUPERFUND

Extent to Which Most Reforms Have Improved the Program Is Unknown



GAO

Accountability * Integrity * Reliability

Contents

Letter	5
--------	---

Appendixes		
Appendix I:	Fourteen Reforms That EPA Considers as Fundamental and as Having Achieved Measurable Results	24
Appendix II:	Characteristics of 48 Reforms That EPA Did Not Classify as Both Fundamental and Measurable	78
Appendix III:	Objectives, Scope, and Methodology	110
Appendix IV:	Comments From the Environmental Protection Agency	113
Appendix V:	GAO Contacts and Staff Acknowledgments	117

Tables		
Table 1:	Fourteen Fundamental/Measurable Reforms and Their Output and Outcome Measures	10
Table 2:	Performance Goals and Measures for Encouraging the Use of Alternative Dispute Resolution	24
Table 3:	Performance Goals and Measures for Promoting “Enforcement First”	28
Table 4:	Performance Goals and Measures for Promoting Settlements With Small Waste Contributors	31
Table 5:	Performance Goals and Measures for Reaching Agreements With Prospective Purchasers	35
Table 6:	Performance Goals and Measures for Providing Compensation for Orphan Shares	39
Table 7:	Performance Goals and Measures for Encouraging the Use of Site-Specific Accounts	43
Table 8:	Performance Goals and Measures for Revised Guidance on Settlements With Miniscule Waste Contributors	47
Table 9:	Performance Goals and Measures for Updating Remedy Decisions	49
Table 10:	Performance Goals and Measures for Increasing Construction Completions	53
Table 11:	Performance Goals and Measures for Establishing the National Remedy Review Board	57
Table 12:	Number of Board Reviews and Estimated Savings, Fiscal Years 1996-2000	58
Table 13:	Performance Goals and Measures for Using the Superfund Accelerated Cleanup Model	61

Table 14: Performance Goals and Measures for Promoting Community Involvement	67
Table 15: Performance Goals and Measures for Funding Brownfield Assessment Pilot Projects	74
Table 16: Six Fundamental Reforms That Lack Performance Measures	79
Table 17: List of 42 Reforms That EPA Did Not Specifically Identify as Having Fundamentally Changed the Superfund Program	88

Figures

Figure 1: Comparison of Four Regions' Superfund Workloads and Rates of Implementation for Three Reforms	15
Figure 2: Superfund Liability Cases Initiated Using Alternative Dispute Resolution, Fiscal Years 1993-98	25
Figure 3: Each Region's Percentage of National Superfund Cases in Which Alternative Dispute Resolution Was Used, Fiscal Years 1993-98	26
Figure 4: Percentage of New Cleanup Actions Funded by Responsible Parties, Fiscal Years 1987-99	29
Figure 5: Average Percentage of New Cleanups Funded by Responsible Parties, by Region, Compared With the National Average, Fiscal Years 1995-99	30
Figure 6: Number of <i>De Minimis</i> Settlements, Fiscal Years 1987-99	32
Figure 7: Each Region's Percentage of National <i>De Minimis</i> Settlements, Fiscal Years 1987-99	33
Figure 8: Number of Prospective Purchaser Agreements Completed, Fiscal Years 1989-99	36
Figure 9: Each Region's Percentage of National Prospective Purchaser Agreements, Fiscal Years 1989-99	37
Figure 10: Number of Orphan Share Compensation Offers, Fiscal Years 1996-99	40
Figure 11: Each Region's Percentage of National Orphan Share Compensation Offers, Fiscal Years 1996-99	41
Figure 12: Number of Special Accounts Established, Fiscal Years 1990-99	44
Figure 13: Each Region's Percentage of National Special Accounts Established, Fiscal Years 1990-99, Compared With Its Percentage of National Superfund Sites	45
Figure 14: Number of Cleanup Remedy Updates per Year, Fiscal Years 1982-99	50
Figure 15: Each Region's Percentage of National Cleanup Remedy Updates, Fiscal Years 1996-99, Compared With Its Percentage of National Superfund Sites	51

Figure 16: Number of Sites Designated as Construction Complete, Fiscal Years 1981-99	54
Figure 17: Each Region's Percentage of National Construction Complete Sites, Fiscal Years 1981-99, Compared With Its Percentage of National Superfund Sites	55
Figure 18: Each Region's Percentage of National Remedy Review Board Reviews	58
Figure 19: Number of Non-Time-Critical Removals, Fiscal Years 1980-99	62
Figure 20: Each Region's Percentage of National Non-Time-Critical Removals, Fiscal Years 1992-99, Compared With Its Percentage of National Superfund Sites	63
Figure 21: Each Region's Percentage of National Integrated Assessments, Fiscal Years 1994-99, Compared With Its Percentage of National Superfund Sites	64
Figure 22: Community Advisory Groups Established, Through the End of Fiscal Year 1999	68
Figure 23: Technical Assistance Grants Awarded, Fiscal Years 1988-99	69
Figure 24: Technical Outreach Projects Initiated, Fiscal Years 1994-99	70
Figure 25: Each Region's Percentage of National Community Involvement Activities, Through the End of Fiscal Year 1999	71

Abbreviations

CERCLA	Comprehensive Emergency Response, Compensation, and Liability Act
EPA	Environmental Protection Agency
GAO	General Accounting Office
GPRA	Government Performance and Results Act
NPL	National Priorities List
OMB	Office of Management and Budget



B-284890

May 12, 2000

Congressional Requesters

For years, the Environmental Protection Agency's (EPA) Superfund program has been criticized for a number of problems. These have included the pace and cost of cleaning up hazardous waste sites, the agency's approach for holding waste contributors liable for cleaning up sites, and the overall effectiveness of the program. Responding to these criticisms, in June 1993, EPA began implementing a series of 62 administrative reforms—actions that it could take under its existing legal authority to improve the program's fairness, efficiency, and effectiveness. According to EPA, these reforms have led to faster cleanups of more sites, thereby better protecting public health and the environment. In addition, EPA maintains that the reforms have promoted the selection of more cost-effective cleanup methods and fairer enforcement of the law. The agency has publicly stated that, because of the administrative reforms, comprehensive legislative reform of the Superfund program is no longer necessary, although the agency is willing to support certain targeted legislative changes.

As the Congress considers reauthorizing the Superfund law, it has been debating the extent to which legislative changes to the program would be desirable. A key factor in making this determination is the extent to which EPA's administrative reforms have addressed previously identified weaknesses in the program. In this context, you requested that we review EPA's reforms to

- determine their demonstrated results and evaluate the performance measures the agency uses to gauge these results and
- identify legislative changes to the program that either the agency or key stakeholders—including, among others, officials representing parties responsible for cleanups, environmental groups, and states—believe are still necessary.

We obtained basic information from EPA for all 62 reforms, including their characteristics, scope, implementation status, overall goals, and performance measures, where available. We also conducted a more detailed analysis of a subset of 14 reforms that the agency characterized as having significantly and measurably improved the program. Appendix I provides a summary of our analysis of each of the 14 reforms. Appendix II

provides a summary of the information we collected on the remaining 48 reforms. To determine the results of the reforms and any legislative changes needed, we met with a judgmental sample of officials representing key stakeholders affected by the Superfund program, including various industry groups, state cleanup agencies, and environmental groups. Officials representing industry and state cleanup agencies provided the majority of the comments about the reforms. (App. III provides a listing of the stakeholders we contacted and a more detailed discussion of our scope and methodology.)

Results in Brief

EPA claims and stakeholders agree that, in general, the Superfund program has improved and the administrative reforms have collectively contributed to this improvement. However, we determined that, for a majority of the 62 reforms, it is difficult for the agency to demonstrate the extent to which they are working and have met the goals set for them—to make the program faster, fairer, and more efficient. While maintaining that all the reforms are important, EPA reform managers acknowledged that

- 42 reforms did not have a fundamental effect, and EPA could not easily collect the data to measure the results achieved for most of them;
- 20 reforms had a fundamental effect; for these reforms,
 - the agency's performance measures demonstrated that 7 had achieved benefits, such as dollar savings—EPA has saved \$70 million to date by identifying less costly cleanup alternatives—and greater community involvement in cleanups;
 - the agency's measures counted the number of times that 7 were implemented but did not demonstrate the results achieved; and
 - the agency did not have measures to demonstrate the results that 6 had achieved.

Furthermore, EPA's data for the 14 fundamental and measurable reforms show two trends suggesting that the progress made to date may be eroding. First, the implementation rates for almost half of these reforms peaked in fiscal year 1997 and declined in subsequent years. Second, the implementation rates for some reforms varied widely among the regions, possibly indicating inconsistent application. Moreover, stakeholders identified regional inconsistency as a problem with some reforms, and EPA acknowledged that ensuring such consistency is a challenge. Therefore, better measurement and oversight of the key reforms, as well as better understanding of the reasons for regional variation in the implementation of some, could help EPA obtain the maximum benefits possible from its

reform initiative. We are making recommendations that the agency take such actions.

EPA and stakeholders agree that targeted legislative changes would do more than the agency's administrative reforms to protect certain parties from the current Superfund law's liability provisions; however, they disagree on the extent of change. According to EPA, it is not seeking any legislation to codify its reforms, but it would support legislative proposals to limit liability for some parties that stakeholders have identified. These parties include prospective purchasers of contaminated property and current owners who are not responsible for or aware of contamination on their property. EPA does not see a need for other legislative changes, such as limiting liability for small businesses, because it believes its reforms have created the tools needed to provide relief for these parties.

Background

In 1980, the Congress passed the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), commonly known as Superfund, to clean up highly contaminated hazardous waste sites. EPA places sites that it determines may need long-term cleanup actions, called remedial actions, on its National Priorities List (NPL). For sites needing cleanup, EPA or private parties conduct studies to assess the risks and select, design, and construct cleanup remedies. CERCLA authorizes EPA to compel the parties responsible for the contaminated sites to clean them up. Under CERCLA, any responsible party at a site can, under some circumstances, be held responsible for the entire cost of the cleanup.¹ Responsible parties can, in turn, sue other parties to recoup some of their own expenses. Through this process, parties can incur high legal costs. The law also allows EPA to pay for cleanups and seek reimbursement from the parties, and it established a trust fund, financed primarily by taxes on crude oil and chemicals, to help EPA pay for its cleanups and related activities. The Superfund program's authorization and the authority for the taxes financing the trust fund expired in 1995 and have not been renewed. The Congress continues to fund the program through annual appropriations from the Superfund trust fund and general revenues.

¹Responsible parties include present (and some former) site owners, operators, transporters, and persons who arrange for the treatment or disposal of hazardous substances.

Meanwhile, to address concerns about the high costs and long duration of cleanups, EPA, beginning in 1993, publicly announced three separate rounds of administrative reforms—actions it could take within its existing legislative authority. These include

- 17 reforms announced in June 1993,
- 19 reforms announced in February 1995, and
- 26 reforms announced in October 1995.

These 62 reforms were intended to cover a range of activities, such as (1) providing liability relief to certain parties, including contributors of small volumes of waste or innocent landowners and purchasers, (2) selecting more technologically advanced and cost-effective cleanup remedies, (3) providing funds to assess brownfield sites to promote their economic redevelopment,² (4) providing technical assistance so that communities and tribes located near sites can better participate in cleanup decisions, and (5) providing for an expanded role for states and tribes in the performance of the program.

In 1997, we reviewed the 45 reforms from the second and third rounds and reported that EPA regarded 25 of them, or 56 percent, as fundamental changes to the Superfund program but could quantify accomplishments for only 6 of them, or 13 percent.³ EPA stated that, overall, it did not need additional legislative authority to achieve the reforms' goals but that targeted new authority would enhance their implementation.

The Government Performance and Results Act of 1993 (the Results Act) requires that agencies, among other actions, (1) establish strategic plans containing general goals for the agencies and (2) prepare annual performance plans that establish goals and measures to assess the results of individual programs. Therefore, in response to requirements of the Act, EPA established three general goals for the reforms—faster, fairer, and cost-effective cleanups—and performance measures for a number of the reforms, all of which support the agency's strategic and annual goals for the Superfund program overall. The performance measures for the reforms are

²EPA defines brownfields as abandoned or underused facilities, usually in industrial or commercial areas, where redevelopment is hampered by real or perceived environmental contamination.

³*Superfund: Information on EPA's Administrative Reforms* (GAO/RCED-97-174R, May 30, 1997).

intended to demonstrate progress toward achievement of their goals, which include, among others, increasing the number of sites where the construction of the cleanup remedy has been completed and maximizing the participation in cleanups of the parties responsible for contamination at sites.

EPA Does Not Have Performance Measures to Link Most Reforms to Improvements in the Program

EPA claims that as a result of the administrative reforms, the program is fairer and cleanups are 20 percent faster and cheaper.⁴ The stakeholders we contacted also commented that overall, after 20 years, they have a better working relationship with EPA, the agency is fairer in dealing with responsible parties, and it is easier to use remedies that are, in their opinion, more reasonable and cost-effective. But stakeholders also had questions about the extent to which some of the administrative reforms had really improved the program. We reviewed EPA's performance measures for each reform and found that the agency has more measures in place since our last review, and for a small number of reforms, the measures demonstrate results such as cost savings. However, EPA cannot directly link the majority of its reforms to improvements in the program.

According to EPA reform managers, all 62 reforms are important and have helped to improve the program, but 42 of them involve activities that (1) did not have a fundamental impact on the program and (2) could not easily be measured for any results achieved. EPA reform managers identified the remaining 20 reforms as activities that have had a fundamental effect on the program. EPA has established performance measures for 14 of them—an increase since our prior review, when EPA had measures for 6 of its key reforms. As table 1 illustrates, EPA's measures for all 14 reforms track the number of times they were implemented, but measures for only 7 reforms demonstrate how they have improved the program.

⁴GAO and EPA have, in the past, disagreed on whether the methodology that EPA uses as a basis for saying that the program is cleaning up sites faster is appropriate (see *Superfund: Times to Assess and Clean Up Hazardous Waste Sites Exceed Program Goals* (GAO/T-RCED-97-69, Feb. 13, 1997), *Superfund: Times to Complete the Assessment and Cleanup of Hazardous Waste Sites* (GAO/RCED-97-20, Mar. 31, 1997), and *Superfund: Duration of the Cleanup Process at Hazardous Waste Sites on the National Priorities List* (GAO/RCED-97-238R, Sept. 24, 1997)). We have not assessed the agency's estimate of cost savings.

Table 1: Fourteen Fundamental/Measurable Reforms and Their Output and Outcome Measures

Fundamental/measurable reform	Year of reform	Measures that count frequency of implementation (output)	Measures that demonstrate results (outcome)
Encourage greater use of alternative tools for resolving liability disputes	1993 ^a	EPA has used this tool at 9-24 sites each year. The number of settlements that EPA reached peaked in fiscal year 1997 and declined slightly the following year. Data for fiscal year 1999 were not available.	
Promote “enforcement first”—getting private parties to fund most of the cleanups	1993 ^a	EPA maintains that responsible parties have funded about 70-84 percent of cleanups since fiscal year 1992, the year before EPA announced the reform.	
Promote more settlements to provide liability protection for <i>de minimis</i> contributors (parties that contribute small amounts of waste)	1993 ^a	EPA has achieved more settlements after the reform (33-105 each year) than before the reform. The number of settlements EPA achieved peaked in fiscal year 1997, significantly declined in fiscal year 1998, and only slightly increased in fiscal year 1999.	
Negotiate agreements to provide liability protection for prospective purchasers of contaminated property	1995 ^a	EPA has signed 16-28 agreements each year since the reform. The number of agreements EPA achieved peaked in fiscal year 1997 and has been declining over the past 2 years.	EPA facilitated the purchase of 1,500 acres of contaminated property and the redevelopment of hundreds of thousands of adjacent acres.
Provide compensation for cleanup costs attributable to insolvent and defunct parties (orphan shares)	1995	EPA has made from 20-30 compensation offers each year, for a total of \$175.3 million. EPA has reached agreement on a total of 47 of these offers, for \$88 million.	
Encourage the use of special accounts for site-specific cleanup costs	1995 ^a	EPA has set up 18-33 accounts each year since the reform, making over \$570 million available for site-specific cleanups. EPA will measure the number and amounts of disbursements from these accounts beginning in fiscal year 2000. The number of accounts EPA established peaked in fiscal year 1997 and has been declining over the past 2 years.	

Continued

Fundamental/measurable reform	Year of reform	Measures that count frequency of implementation (output)	Measures that demonstrate results (outcome)
Revise guidance on liability protection settlements for <i>de micromis</i> parties (parties that contribute miniscule amounts of waste)	1995	EPA has made a total of 16 settlements. ^b	
Update cleanup remedy decisions to take advantage of new science and technology	1995 ^a	EPA began updating remedies as early as 1983 and has updated 61-85 remedies each year since fiscal year 1995, the year before it announced this reform. The number of remedies EPA updated peaked in fiscal year 1997, declined in fiscal year 1998, and remained at about that level in fiscal year 1999.	EPA estimates the net future cost savings from the updates conducted during fiscal years 1996-99 could total \$1.3 billion. ^c
Increase the number of sites where the construction of all cleanup remedies has been completed	1993 ^a	EPA has completed the construction of all remedies at 61-88 sites each year since fiscal year 1992, the year before it announced this reform.	
Establish the National Remedy Review Board to review high-cost proposed remedies	1995	EPA has reviewed 9-11 cleanup proposals each year.	EPA estimates that its reviews have saved a total of \$70.7 million to date.
Use the Superfund Accelerated Cleanup Model (which allows the use of shorter-term cleanup actions, called removals, and combined site assessment activities)	1993 ^a	EPA has accomplished 12-27 non-time-critical removals each year since fiscal year 1992, the year before it announced this reform. EPA accomplished a total of 442 integrated assessments and 405 combined assessments through fiscal year 1999.	EPA estimates that it saves, on average, about \$2,500 and 11 months by combining assessments at a site.
Fund brownfield assessment pilot projects	1995 ^a	EPA funded a total of 305 assessment grants through October 1999.	EPA estimates that over 1,900 properties have been assessed, 120 have been cleaned up, and 169 have been redeveloped and that over 5,800 jobs and about \$1.9 billion of private dollars have been leveraged at sites assessed with EPA funds.
Establish community advisory groups	1995 ^a	EPA has helped to form 3-16 community advisory groups each year. The number of groups EPA established peaked in fiscal year 1997 and has been declining over the past 2 years.	EPA surveyed members of communities near 7 Superfund sites and determined that 47 percent believe that EPA is effectively involving them in the Superfund process.

Continued from Previous Page

Fundamental/measurable reform	Year of reform	Measures that count frequency of implementation (output)	Measures that demonstrate results (outcome)
Promote early and more effective community involvement (primarily through technical assistance grants and outreach projects)	1993	<p>EPA has awarded 4-37 grants each year since fiscal year 1988 and has conducted 7-46 technical outreach projects each year.</p> <p>The number of grants awarded since the reform peaked in fiscal year 1995, declined the next year, and has remained at about that level.</p> <p>The number of outreach projects established peaked in fiscal year 1998 and declined in fiscal year 1999.</p>	EPA surveyed members of communities near 7 Superfund sites and determined that 47 percent believe that EPA is effectively involving them in the Superfund process.

Continued from Previous Page

^aThis was not a new activity, but EPA reemphasized or revised it as part of the agency's administrative reform effort.

^bAccording to EPA, the fact that so few parties have asked for a settlement means that such parties are no longer being threatened with lawsuits from larger parties for a share of the cleanup costs. Therefore, in EPA's view, the reform is a success.

^cWe did not verify the accuracy of EPA's savings estimate; a 1997 industry study cautioned that these savings may be overstated.

Source: GAO's presentation of information from EPA.

EPA's outcome measures demonstrate positive results for seven reforms. The measures indicate that two reforms have helped the agency move toward its goal of more cost-effective cleanups by achieving significant dollar savings on the types of remedies selected at sites. The measures also demonstrate that five other reforms have achieved positive results, such as an increase in the number of brownfield sites assessed (since assessment leads to cleanup and redevelopment) and feelings of greater participation in cleanup decisions expressed by some communities that received grants, technical assistance, or outreach from EPA.

For the seven reforms that do not have outcome measures, it is difficult for EPA to determine how well they are working, whether they need revision to become more effective, and whether they are achieving their intended results—faster, fairer, and cheaper cleanups. For example, it is difficult for the agency to determine from its performance measures whether using alternative dispute resolution has led to settlements with responsible parties that are fairer, take less time, and reduce legal costs. It is also difficult for the agency to determine, just by counting how many times a reform has been implemented each year, the extent to which the reform has become a routine part of the overall program.

EPA reform managers acknowledged that it is very difficult to set performance measures that directly demonstrate the extent to which the 14 reforms are achieving their goals. The managers pointed out that a number of reforms, such as those addressing the remedies selected at a site, work together to cumulatively benefit the program and the agency cannot separately measure the contribution of each reform. The managers further acknowledged that factors other than the reforms themselves likely contributed to the benefits the agency attributes to some of the reforms. For example, an agencywide policy on the use of alternative dispute resolution across all EPA programs, not the Superfund reform alone, helped to increase the use of this technique, and the agency cannot measure the success of this reform alone.

In a November 1997 internal review of the reforms, EPA acknowledged limitations in its performance measures and agreed that it needed to do more than count how many times a reform has been implemented to determine its results. Furthermore, when the agency has tried to improve its evaluation of a reform, its efforts have paid off. Specifically, it has learned in some instances that a reform was not working as well as intended and needed to be improved. For example, in 1999, EPA completed the first phase of an ongoing effort to measure the effects of its community involvement reforms. One of its findings was that only about half of those surveyed considered the agency effective in involving their communities in the Superfund process, leading the agency to conclude that it needed to improve its implementation of these reforms. To its credit, EPA is taking actions to evaluate the performance of the reforms overall, as well as of certain individual reforms. The agency is about to update its 1997 internal review of the reforms to develop a strategy to improve their implementation. In addition, it is currently compiling the results of a survey it conducted with 36 property buyers to determine how effectively its agreements with these buyers to limit their liability under Superfund law have helped to stimulate the reuse of their properties.

The agency recognizes that to fully evaluate the results of reforms, it needs input from responsible parties. One way of obtaining this input is by surveying parties on the reforms. However, under the Paperwork Reduction Act, EPA cannot survey more than nine members of the public without the approval of the Office of Management and Budget (OMB). In 1999, EPA asked OMB for general authority to conduct up to 15 separate surveys of responsible parties' experiences with the reforms. OMB denied the request, in part because it did not specify how EPA planned to collect and analyze the data. However, OMB encouraged EPA to resubmit its

request after it had developed a statistical data collection and analysis plan, among other things. EPA managers said they are trying to decide how to respond to OMB's suggestions, given the agency's limited resources for contractors to perform surveys and competing priorities for these resources. During March of this year, however, EPA did obtain general agencywide authority from OMB to conduct customer satisfaction surveys. This authority may be sufficient for the reform managers to survey responsible parties on the reforms.

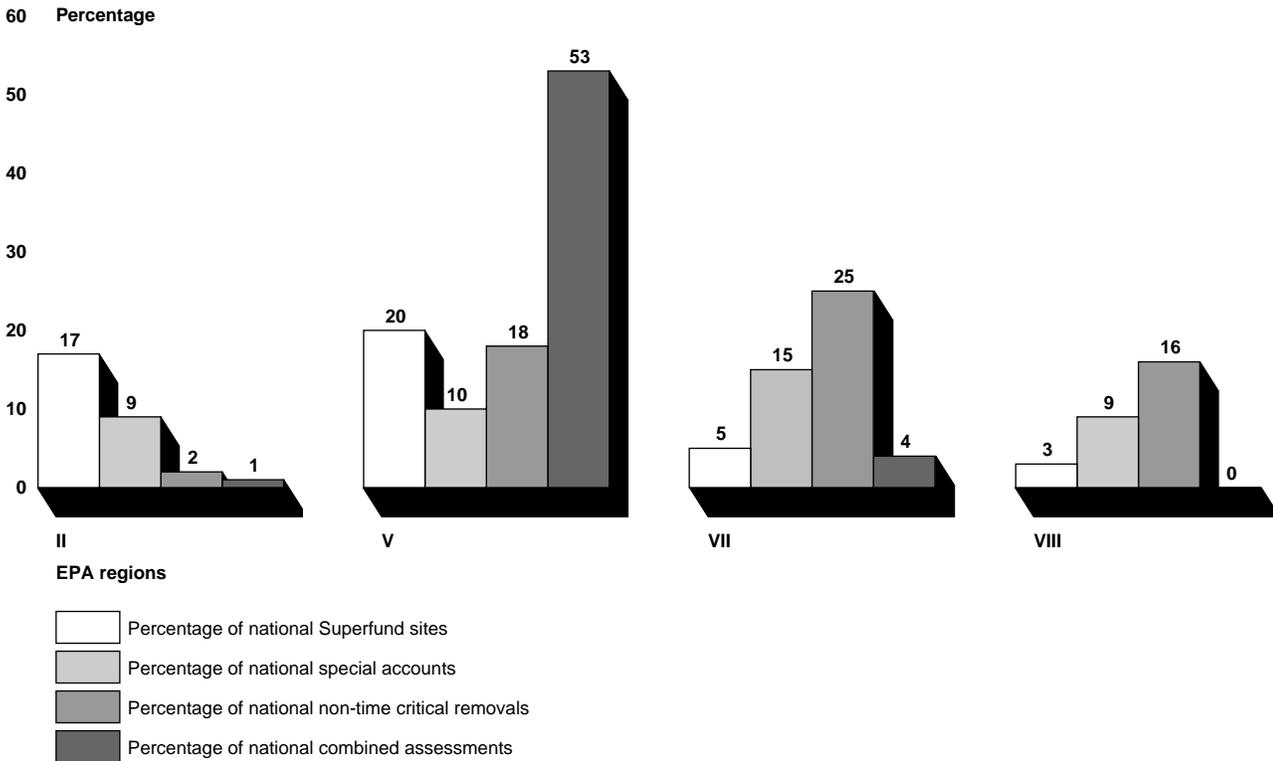
EPA's data on the 14 reforms also showed two trends indicative of limits on the progress achieved to date and possibly in the future, namely, that EPA may not be sustaining its implementation of the reforms and that the regions may be inconsistent in their use of some reforms. First, EPA's data on the number of times the 14 reforms have been implemented showed that for almost half of the reforms, implementation peaked in fiscal year 1997 and then declined in subsequent years. This suggests that the regions may not be sustaining the level of implementation achieved after the reforms were announced and may need additional support or incentives to sustain their implementation. Alternatively, other factors may be mitigating the effects of the reforms over time. EPA reform managers acknowledged that the implementation of some reforms may naturally decline at some time in the future, when EPA has finished constructing most remedies and is likely to be bringing fewer sites into the program. We acknowledged in two 1999 reports that the construction of most remedies at sites currently in the program would be completed by 2005 and that, because states are now taking on more of the cleanup workload, fewer sites may come into the program in the future.⁵ However, EPA cleanup managers stated that these possible future trends for the program do not explain the declines in implementation that we identified for fiscal years 1998 and 1999.

Second, EPA's data also showed that the regions varied widely in the number of times they used most of the reforms, possibly indicating inconsistency in their use of the reforms. According to the data, all regions appear to be giving priority to completing the construction of cleanup remedies. In part, this is because EPA headquarters has made this a top priority for the Superfund program, has monitored the regions' implementation closely, and this past year for the first time made mid-year

⁵*Superfund: Progress Made by EPA and Other Federal Agencies to Resolve Program Management Issues* (GAO/RCED-99-111, Apr. 29, 1999), and *Superfund: Half the Sites Have All Cleanup Remedies in Place or Completed* (GAO/RCED-99-245, July 30, 1999).

regional budget adjustments to reward the regions that were achieving this goal. However, the data for other reforms do not appear to show consistent levels of implementation across the regions. For example, regions II and V have relatively large portions of the overall Superfund workload to manage—17 and 20 percent, respectively. Yet Region V implemented a significantly higher portion of the total non-time-critical removals and combined site assessments than Region II, as figure 1 illustrates. Likewise, regions II and V used special accounts and removals less frequently or as often as regions VII and VIII, yet these latter two regions had much smaller portions of the Superfund workload. Such regional variation could indicate that certain regions are not realizing the potential savings in time and costs expected from the reforms.

Figure 1: Comparison of Four Regions' Superfund Workloads and Rates of Implementation for Three Reforms



Source: GAO's presentation of data from EPA.

EPA reform managers pointed out that factors other than the sizes of the regions' Superfund workloads may account for the variation and are beyond the regions' control. For example, for several reforms, such as those to enhance community involvement in cleanups, the regions can offer the reforms, but it is up to stakeholders to pursue them. Or, one region may have fewer sites involving multiple responsible parties, so that region may have fewer opportunities to use some of the reforms aimed at achieving faster, cheaper settlements. However, without determining why such significant variations exist among the regions, EPA cannot be sure that its reforms are being used to the maximum extent possible.

Furthermore, EPA reform managers acknowledged that ensuring regional consistency is a constant challenge for the agency and that some regions were quicker than others to embrace the reforms. In fact, in a 1997 review of the reforms, EPA itself identified the need to ensure better commitment to the reforms. The EPA managers noted that differences in the organizational structures and leadership of the regions could lead to inconsistencies in implementing the reforms. Likewise, industry and state cleanup agency officials expressed concerns that some regions, and even cleanup managers within regions, are less willing than others to implement certain reforms. These officials felt, therefore, that they could not realize the full benefits of the reforms, such as lowering litigation and cleanup costs.

EPA reform managers in headquarters and in the two regions we contacted outlined EPA's current methods to help ensure that the regions implement the reforms. These include the use of headquarters liaisons to the regions who monitor the regions' progress towards annual targets—the number of times the regions implement certain reforms—and conduct regional visits, conference calls, and training sessions to discuss the reforms. EPA has also issued new or updated guidance on the use of some of the reforms. By better targeting these methods, EPA could more fully achieve the reforms' goals across the regions.

EPA and Stakeholders Support Legislative Changes to Varying Degrees

EPA and some stakeholders we contacted—officials representing industry, state cleanup agencies, and environmental and community groups—agreed on the benefits of establishing some of the administrative reforms in law but disagreed on the need to do so for other reforms. More specifically, the stakeholders preferred that reforms intended to provide liability protection to certain parties, such as prospective property purchasers, be established in law. Stakeholders worried that otherwise, EPA regions had too much

discretion to decide which parties would benefit and affected parties did not have a firm basis to challenge these decisions. EPA managers explained that the agency would support legislation, if proposed, to provide liability relief for such parties but that the agency itself is not currently seeking any legislation to codify its reforms. According to EPA, it would support such proposals because they would (1) give such parties greater assurance that they would not be held liable for the costs of a cleanup under Superfund, (2) reduce the parties' legal costs, and (3) promote the development of brownfields, since the fear of being held liable under current Superfund law can deter parties from pursuing brownfield cleanups and redevelopment.

Stakeholders and EPA both favored legislation that would provide liability protection for

- prospective purchasers of contaminated property,
- landowners who were not responsible for or aware of contamination on their property (innocent landowners),
- owners of property contiguous to a contaminated site, and
- small municipal waste generators and transporters.

Both EPA and the officials representing industry would also like the agency to be able to compensate parties more extensively for the shares of cleanup costs attributable to insolvent or defunct parties as a means of promoting faster and less costly settlements. However, EPA cleanup managers said that the agency could not afford to do this without obtaining additional funding authority for this purpose from the Congress. The managers said the agency continues to request additional funds for the Superfund program that would allow it to devote more resources to covering such shares of cleanup costs—\$150 million in fiscal year 2001—but have not yet obtained such funds.

EPA and stakeholders did not agree on the need for other legislative changes. For example, EPA did not agree with the executive director of the organization representing small businesses on the need for further legislative authority to protect such businesses. The agency maintains that its administrative reforms aimed at removing small waste contributors from lengthy settlement negotiations, protecting them from litigation, and adjusting their settlement costs on the basis of their ability to pay provided these businesses with ample relief. The executive director acknowledged that these reforms were helpful but said that some member businesses still report incurring high legal costs that threaten their financial viability.

Therefore, these businesses would like the liability protection and other benefits of the reforms established in law to make them less discretionary and further reduce costs.

EPA and stakeholders also differ on how much liability relief should be extended to parties that conduct cleanups under state programs. In general, officials representing industry and the states explained that the fear of being held liable under the current Superfund law deters parties that would voluntarily clean up sites under state programs, especially brownfield sites.⁶ EPA has maintained that it cannot provide parties that clean up a site under a state program with full relief from Superfund liability. But the agency can provide these parties with assurances that it no longer has any interest in the site unless it presents an imminent and substantial endangerment to public health or the environment in the future. The industry and state officials believe that this qualified relief from liability is not sufficient to overcome barriers to cleanups and that a legislative solution may be necessary.

Several bills that would exempt various parties from liability and therefore would limit the potential sources of funding for cleanup costs have been introduced in the Congress in recent years. While some proposed bills to reauthorize the Superfund program would reinstate the expired Superfund taxes, others would not. The Congress has not passed any of these bills.

Conclusions

EPA claims and stakeholders agree that the Superfund program is working better and that, at least collectively, the administrative reforms have played some part in this improvement, but the agency has not measured the impact of most reforms. This limits the agency's ability to determine how well the reforms are working and where it may need to adjust its reform efforts. EPA's ability to better measure the results of its reforms could be further limited if the agency does not obtain important data and input from the responsible parties that are conducting a majority of cleanups, as well as other key stakeholders, such as community and environmental groups. Furthermore, without sustaining the most important reforms and ensuring that all regions are implementing them to the maximum extent possible, the agency is not assured that it is fully achieving potential benefits, such as saving significant cleanup dollars and cleaning up sites more quickly.

⁶State voluntary cleanup programs offer parties incentives, such as state liability protection, to voluntarily address waste sites.

Therefore, as the agency updates its internal review of the reforms and develops a reform strategy, it has the opportunity to consider ways that it could better (1) measure the results of the most important reforms and (2) verify that it does not have a problem with inconsistent regional implementation for some reforms.

Recommendations

To achieve the maximum benefits possible from the Superfund administrative reforms, the Administrator, EPA, should direct the Assistant Administrator for Solid Waste and Emergency Response, who manages the Superfund program, to address, in EPA's internal review and update of the reforms, ways in which the agency can

- cost-effectively obtain additional data—for those reforms with the greatest potential for improving the program—that would help it better assess the reforms' results, including continuing to pursue authority from OMB to solicit input from private parties and other key stakeholders on the success of the reforms, and
- target incentives or other strategies as necessary to sustain the implementation of some reforms and better understand whether regional variation in their use reflects inconsistencies that need to be addressed.

Agency Comments

We provided copies of a draft of this report to EPA for its review and comment. EPA's comments are reproduced in appendix IV. EPA said that it would evaluate our recommendations and include them in its Superfund reforms strategy, as appropriate. However, EPA had three principal concerns about our findings. While we acknowledge the agency's position on these issues, as discussed individually below, we continue to believe that our findings were soundly developed and fairly presented. Therefore, we did not change our report in response to these concerns. Specifically:

- The agency regards all 62 reforms as important and believes that they have improved the program, even if the precise results of many cannot be measured. EPA said that it had designated 20 of the 62 reforms as fundamental because they had the biggest impact, individually, on the program, but that many of the remaining 42 reforms work together with the fundamental reforms to improve specific aspects of the program, such as remedy selection. We had already noted in the report that the agency considered all reforms to be important and beneficial to the

program and that the agency believed certain reforms worked together to improve the program, even though the agency could not measure their individual contributions to the improvements.

- The agency disagreed with our finding that several of the reforms it designated as fundamental have not produced measurable outcomes. The agency also stated that it is difficult to measure progress toward certain goals, such as greater fairness in the program and lower litigation costs, but there are a number of indicators of this progress. In addition, EPA said that it has been unable to obtain the authority from OMB to survey private parties on the reforms' accomplishments. In assessing these accomplishments, we asked the agency to provide us with any data that it had to demonstrate results. We took these data and used two criteria to designate whether the data represented output or outcome performance measures: (1) the standard definition under the Results Act that an output measure counts activities undertaken while an outcome measure assesses the results of a program activity compared to its intended purpose, and (2) the extent to which the performance measure directly assessed progress toward or achievement of EPA's stated goals for a reform. Subsequently, we found that our designation of EPA's performance measures as measuring either activities conducted or results achieved was consistent with the way the agency itself characterized them in its issued work plan for Superfund, generated in response to the Results Act. Furthermore, we had already acknowledged in the report some of the difficulties the agency faced in measuring progress toward the reforms' goals and attempting to obtain authority to ask stakeholders for important data that the agency needed to measure the reforms' results.
- The agency maintains that it has sustained a high level of commitment to implementing the reforms. Furthermore, the agency stated that the trend data cited in the report indicating possible declines and regional variation in the implementation of some reforms over the past several years do not demonstrate a decrease in the agency's commitment but could reflect the impact of other factors. These include factors such as annual differences in the types and number of cleanup activities being conducted in a particular region, or an overall decline in the cleanup workload as more sites progress through the cleanup process. These factors could also include ones that the agency cannot control, such as different levels of interest among stakeholders in using community advisory groups or technical assistance grants. We had already acknowledged in the report that the trends showing variation in implementing the reforms could be due to a number of factors. One of these factors was not, however, an overall decline in the cleanup

workload. As we point out, the agency itself had admitted that such a decline could affect reform accomplishments in the future, but does not explain the decrease in accomplishments over the past several years. Furthermore, our point is that without good performance data, the agency cannot know if certain trends indicate implementation problems that the agency needs to address or are due to factors outside the agency's control. We showed that when the agency has obtained data from stakeholders on the reforms' accomplishments, it has learned valuable information about implementation problems and taken subsequent action to address them. Therefore, we believe that by focusing on the most critical reforms and significant variation in their implementation and verifying the root cause of this variation, the agency could achieve similar improvements in these reforms.

In addition to these overall comments, EPA provided technical and clarifying comments that we incorporated in the report as appropriate.

Unless you announce its contents earlier, we plan no further distribution of this report until 30 days after the date of this letter. At that time, we will send copies of the report to appropriate congressional committees and interested members of the Congress. We will also send copies of this report to the Honorable Carol M. Browner, Administrator, EPA; and the Honorable Jacob Lew, Director, Office of Management and Budget, and we will make copies available to others on request. Please contact me at (202) 512-6111 if you or your staff have any questions. Key contributors to this report are listed in appendix V.

A handwritten signature in black ink, appearing to read 'Peter F. Guerrero', with a long horizontal flourish extending to the right.

Peter F. Guerrero
Director, Environmental Protection
Issues

List of Requesters

The Honorable Thomas J. Bliley, Jr.
Chairman, Committee on Commerce
House of Representatives

The Honorable Michael G. Oxley
Chairman, Subcommittee on Finance
and Hazardous Materials
Committee on Commerce
House of Representatives

The Honorable Sherwood L. Boehlert
Chairman, Subcommittee on Water
Resources and Environment
Committee on Transportation
and Infrastructure
House of Representatives

Fourteen Reforms That EPA Considers as Fundamental and as Having Achieved Measurable Results

This appendix summarizes our analysis of the 14 administrative reforms that the Environmental Protection Agency (EPA) characterized as having significantly and measurably improved the Superfund program. For each of the reforms, our analysis considers the performance goals and measures and the results identified by EPA, our own and stakeholders' observations, and EPA's and others' views on the need for any additional authority to implement the reform.

Encourage Greater Use of Alternative Dispute Resolution

In 1993, EPA initiated a reform to encourage parties at Superfund sites to use alternative methods for resolving disputes over liability for cleanup costs. These methods—used by the agency since 1987—include employing neutral parties to organize negotiations to allocate cleanup costs among all involved parties and facilitate settlement deliberations. EPA initiated training for staff and allocated funds to its regions for alternative dispute resolution programs. Table 2 shows EPA's performance goals and measures for this reform.

Table 2: Performance Goals and Measures for Encouraging the Use of Alternative Dispute Resolution

Reform	Goals	EPA's performance measures	
		Outcomes	Outputs
Encourage greater use of alternative dispute resolution in settling disagreements over Superfund liability	Increase program's fairness	None	Number of Superfund enforcement cases/sites using alternative dispute resolution: 133 since 1987
	Reduce litigation and associated costs		Percentage of cases using alternative dispute resolution that reach settlement: 78-80 percent

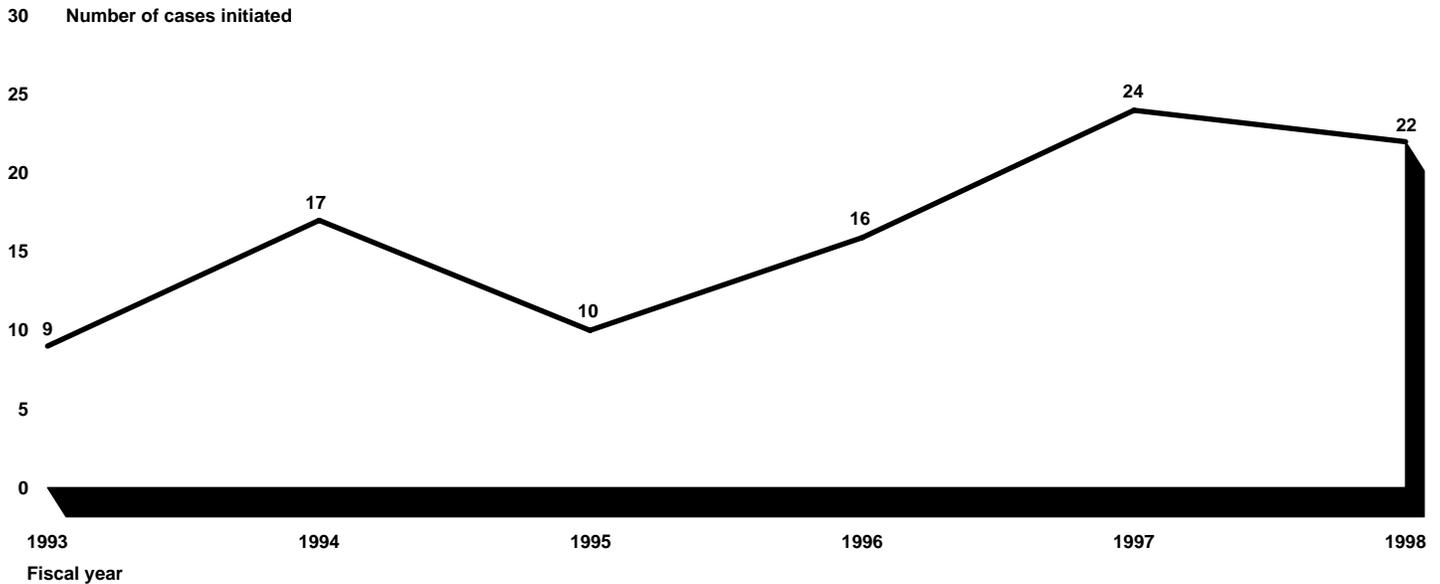
Source: GAO's classification and presentation of information from EPA.

Results of Reform Identified by EPA

Figure 2 shows how many Superfund liability cases EPA initiated each year using alternative dispute resolution.

**Appendix I
Fourteen Reforms That EPA Considers as
Fundamental and as Having Achieved
Measurable Results**

Figure 2: Superfund Liability Cases Initiated Using Alternative Dispute Resolution, Fiscal Years 1993-98



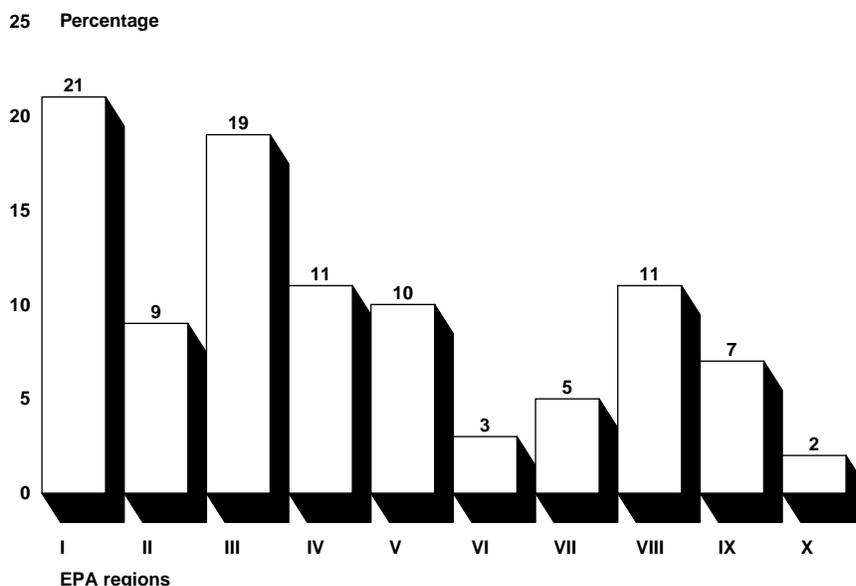
Note: Fiscal year 1998 was the last year for which EPA was able to provide complete data on this reform.

Source: GAO's presentation of data from EPA.

EPA's data for fiscal years 1993-98 indicate that all regions have used alternative dispute resolution techniques in resolving Superfund disputes (see fig. 3).

**Appendix I
Fourteen Reforms That EPA Considers as
Fundamental and as Having Achieved
Measurable Results**

Figure 3: Each Region's Percentage of National Superfund Cases in Which Alternative Dispute Resolution Was Used, Fiscal Years 1993-98



Source: GAO's presentation of data from EPA.

GAO's and Stakeholders' Observations

- **Sustained effects:** The data show that the use of alternative dispute resolution techniques has increased since the reform was initiated. However, the use of these techniques decreased in fiscal year 1998. The data are insufficient to determine if this is a long-term trend.
- **Contribution of other factors:** EPA reform managers acknowledge that other initiatives—including an agencywide policy and several laws¹ authorizing the use of alternative dispute resolution techniques—have contributed to the greater use of these techniques in Superfund cases, but they cannot isolate the effects of either the reform or these other factors.
- **Regional implementation:** The data show variations among the regions in implementing this reform that do not correspond with differences in the sizes of their Superfund workloads. According to EPA reform managers, one possible explanation for these variations is that not all

¹Including, among others, the Alternative Dispute Resolution Act of 1998 (P.L. 105-315) and the Civil Justice Reform Act (P.L. 101-650).

**Appendix I
Fourteen Reforms That EPA Considers as
Fundamental and as Having Achieved
Measurable Results**

sites are appropriate for the use of alternative dispute resolution techniques. However, the agency cannot determine the number of sites that might be appropriate for using the techniques.

- **Performance measurement:**
 - Counting the number of times alternative dispute resolution is used does not directly demonstrate that the program is fairer and that litigation and its associated costs have decreased. Nevertheless, the increased use of alternative dispute resolution could imply that the program is “fairer” than it would have been otherwise because all parties are satisfied with how cleanup costs are allocated under the agreements reached.
 - EPA does not (1) track litigation costs; (2) have access to this information; and (3) according to EPA reform managers, have authority to require private parties to provide it.

**Views on Additional
Authority Needed**

EPA reform managers do not believe that the agency needs any additional legal authority to pursue this reform.

**Promote “Enforcement
First”**

In 1990, EPA began to emphasize more vigorous Superfund enforcement to increase the proportion of cleanup actions funded by responsible parties. EPA included “enforcement first” among the administrative improvements it announced in fiscal year 1993. Under this initiative, EPA seeks commitments from responsible parties to fund and perform at least 70 percent of all new remedial action work at Superfund sites. Table 3 shows EPA’s performance goals and measures for this reform.

**Appendix I
Fourteen Reforms That EPA Considers as
Fundamental and as Having Achieved
Measurable Results**

Table 3: Performance Goals and Measures for Promoting “Enforcement First”

Reform	Goals	EPA's performance measures	
		Outcomes	Outputs
Emphasize enforcement to encourage cleanups by responsible parties	Increase program's fairness	None	Percentage of total cleanup actions funded by responsible parties: About 70 percent as of fiscal year 1999 (GPRA ^a measure)
	Expedite cleanups		
	Increase the proportion of cleanups funded by responsible parties		Amount committed by parties toward cleanups since 1980: \$16.2 billion

^aAccording to EPA, these measures track and/or project the number of actions that occur throughout the year (accomplishments) and are used to evaluate the program's progress in support of the Government Performance and Results Act of 1993 (GPRA or the Results Act).

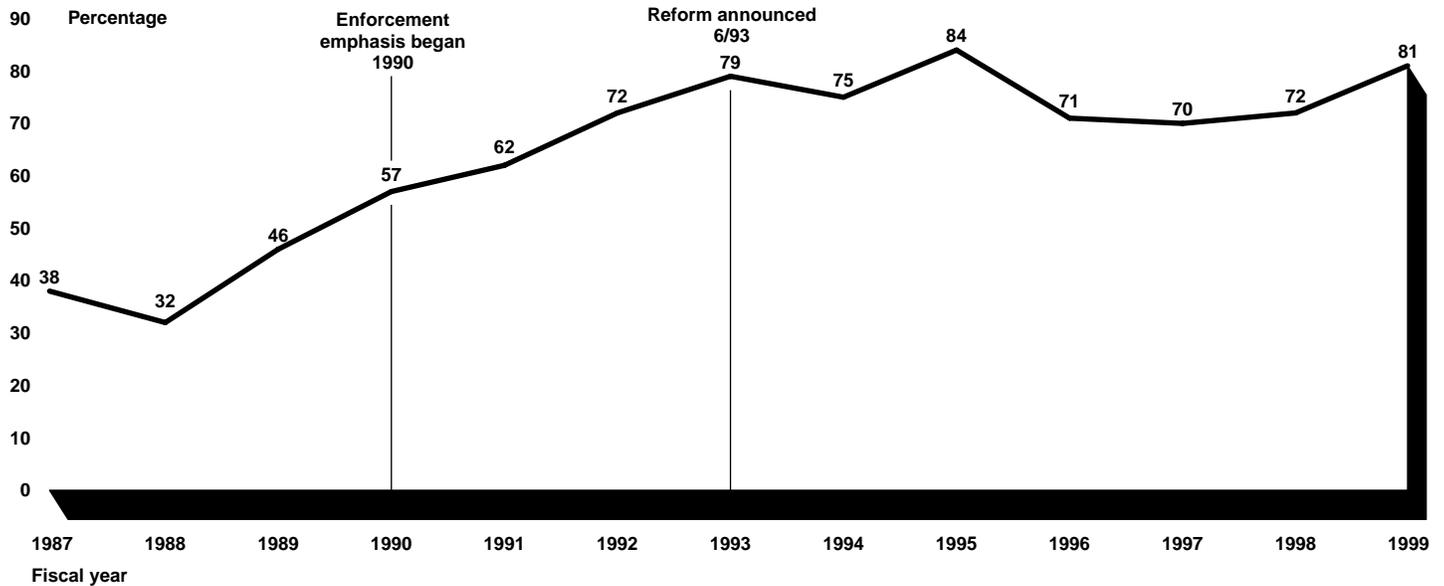
Source: GAO's classification and presentation of information from EPA.

Results of Reform Identified by EPA

Figure 4 shows the percentage of new cleanup actions funded by responsible parties during fiscal years 1987-99.

**Appendix I
 Fourteen Reforms That EPA Considers as
 Fundamental and as Having Achieved
 Measurable Results**

Figure 4: Percentage of New Cleanup Actions Funded by Responsible Parties, Fiscal Years 1987-99

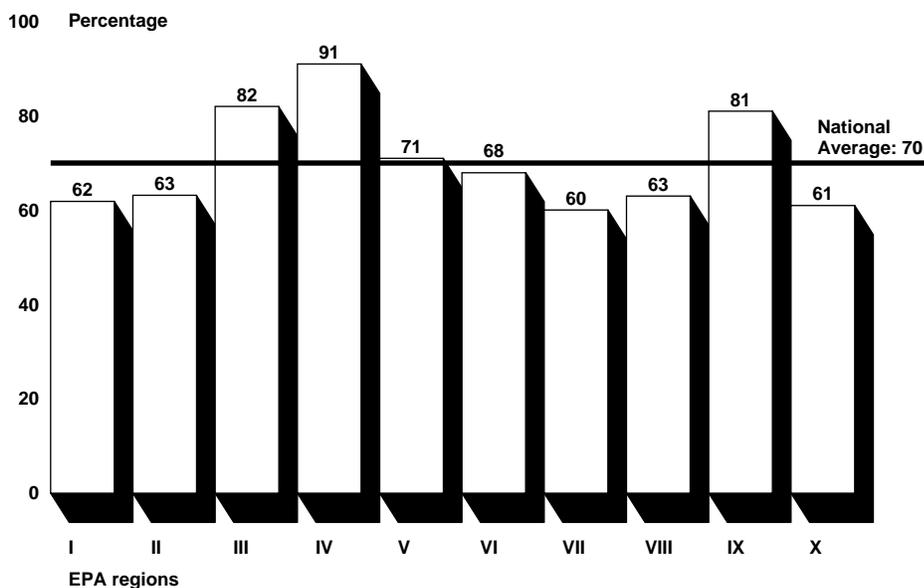


Source: GAO's presentation of data from EPA.

Figure 5 shows, for each EPA region, the average percentage of new cleanups started by responsible parties during fiscal years 1995-99, compared with the national average of 70 percent.

**Appendix I
Fourteen Reforms That EPA Considers as
Fundamental and as Having Achieved
Measurable Results**

Figure 5: Average Percentage of New Cleanups Funded by Responsible Parties, by Region, Compared With the National Average, Fiscal Years 1995-99



Source: GAO's presentation of data from EPA.

GAO's and Stakeholders' Observations

- **Sustained effects:** EPA has, over time, increased the proportion of new cleanup actions financed by responsible parties and, in recent years, maintained this proportion at about 70 percent or higher. Both EPA reform managers and industry representatives credit the reform with these results.
- **Contribution of other factors:** EPA reform managers identified no other factors as contributing to the results credited to this reform.
- **Regional implementation:** Regional data indicate that the regions vary in the extent to which they are obtaining responsible parties' commitments to fund new cleanup activities initiated each year. For each region, responsible parties' rate of participation in cleanups varies from year to year, ranging from 0 to 100 percent. These variations do not correspond with differences in the sizes of the regions' Superfund workloads.
- **Performance measurement:** Measuring the rate at which responsible parties pay for cleanups does not directly measure progress toward or achievement of this reform's goal of increasing the program's fairness. Nevertheless, ensuring that responsible parties are now paying for a larger portion of the Superfund cleanup work than they did earlier in the

**Appendix I
Fourteen Reforms That EPA Considers as
Fundamental and as Having Achieved
Measurable Results**

program could imply that the program is “fairer” than it would have been without the reform.

**Views on Additional
Authority Needed**

EPA reform managers do not believe that the agency needs any additional legal authority to pursue this reform.

**Promote More
Settlements for Small
Waste Contributors**

In 1993, EPA began to emphasize efforts to resolve the liability of *de minimis* parties as early as possible in the Superfund process. According to EPA, *de minimis* parties are those whose contributions of hazardous waste to a Superfund site are minimal in volume and toxicity. With this reform, EPA simplified its requirements for determining parties’ eligibility for such settlements, streamlined the settlement process, and issued guidance to its regions encouraging these settlements. Table 4 shows EPA’s performance goals and measures for this reform.

Table 4: Performance Goals and Measures for Promoting Settlements With Small Waste Contributors

Reform	Goals	EPA’s performance measures	
		Outcomes	Outputs
Encourage more liability settlements with parties that have contributed small amounts of waste at a site (<i>de minimis</i> parties)	Reduce litigation and associated costs	None	Number of settlements with <i>de minimis</i> parties: 465 as of the end of fiscal year 1999 (GPRA measure)
	Increase program’s fairness Encourage more, early, and expedited settlements		Number of parties released from the Superfund liability system: Over 21,000 as of the end of fiscal year 1999

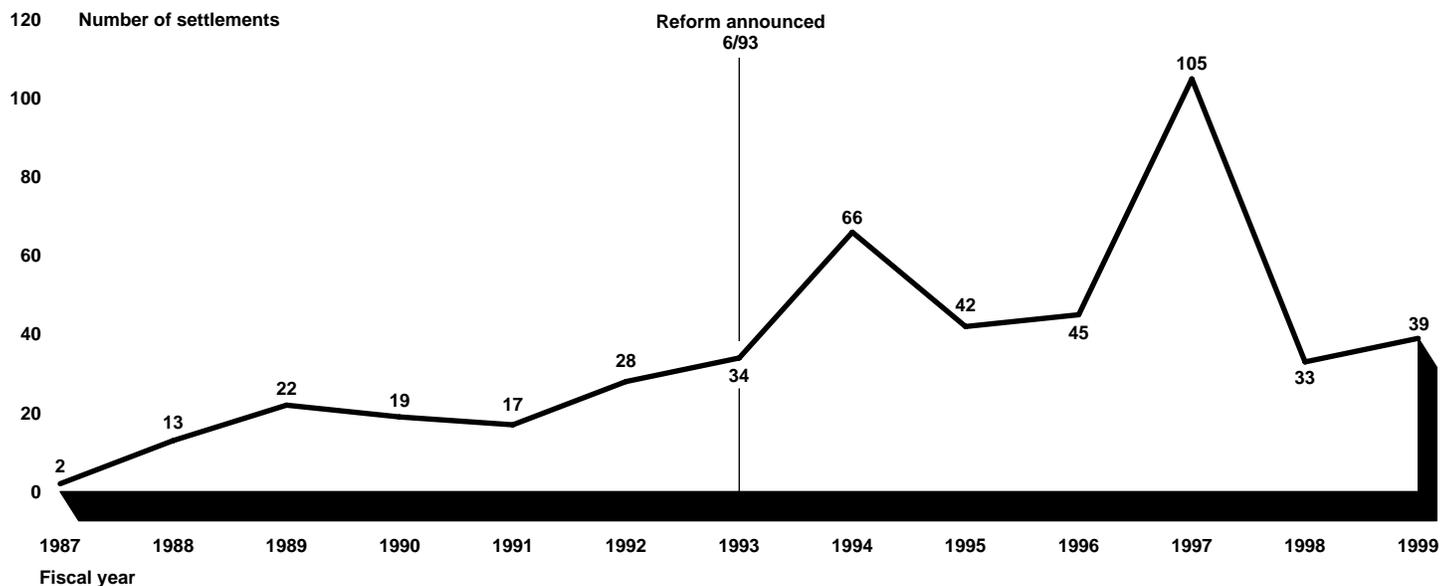
Source: GAO’s classification and presentation of information from EPA.

**Results of Reform Identified
by EPA**

Figure 6 shows the number of *de minimis* settlements per year during fiscal years 1987-99.

**Appendix I
Fourteen Reforms That EPA Considers as
Fundamental and as Having Achieved
Measurable Results**

Figure 6: Number of *De Minimis* Settlements, Fiscal Years 1987-99

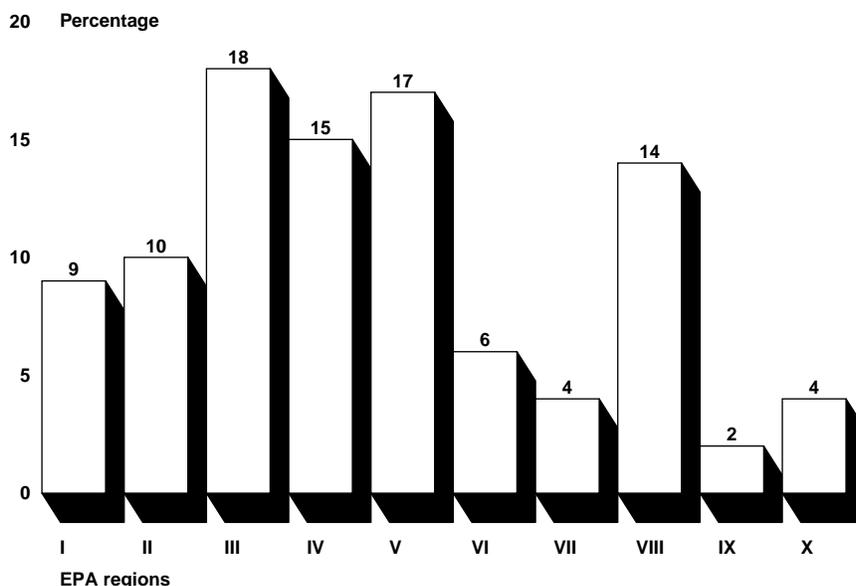


Source: GAO's presentation of data from EPA.

EPA's data show that all regions have completed *de minimis* settlements (see fig. 7).

**Appendix I
Fourteen Reforms That EPA Considers as
Fundamental and as Having Achieved
Measurable Results**

Figure 7: Each Region's Percentage of National *De Minimis* Settlements, Fiscal Years 1987-99



Source: GAO's presentation of data from EPA.

**GAO's and Stakeholders'
Observations**

- Sustained effects:
 - Although the number of *de minimis* settlements has generally increased above prereform levels, this number has fluctuated significantly from year to year since the reform began. The number of settlements EPA achieved peaked in fiscal year 1997 and subsequently declined. Although the data are insufficient to determine if this is a long-term trend, these fluctuations could suggest that EPA may not be sustaining the implementation of this reform.
 - EPA reform managers stated that the number of *de minimis* settlements for fiscal year 1997 is unusually high because (1) 42 of these settlements involved parties at a single site who each wanted an individual settlement and (2) 25 settlements involved *de minimis* landowners at another site who were provided protection for \$0. According to the reform managers, these two site-specific experiences, which appear to have dramatically increased the number of settlements in fiscal year 1997, were anomalies. When the *de minimis* settlements for these two sites are removed, 40 such

**Appendix I
Fourteen Reforms That EPA Considers as
Fundamental and as Having Achieved
Measurable Results**

settlements remain for the year—a total that is more in line with EPA's national average and GPRA target, according to these managers.

- **Contribution of other factors:** EPA reform managers identified no other factors as contributing to the results credited to this reform.
- **Regional implementation:** The data show variations among the regions in implementing this reform that do not correspond with differences in the sizes of their Superfund workloads. According to EPA reform managers, one possible explanation for these variations is that *de minimis* parties are not involved at all sites, and the mix of sites with such parties may vary from region to region and year to year.
- **Performance measurement:** EPA's measures of this reform's success do not directly indicate progress toward or achievement of its goals—increasing the program's fairness and reducing litigation and its associated costs. However, because *de minimis* settlements remove small or innocent parties from the liability allocation process and shield them from costly litigation, the settlements could imply that the program is “fairer” than it would have been otherwise.
- **Views on the reform's benefits/effectiveness:**
 - The executive of the organization representing independent businesses stated that, in his opinion, based on information from member companies, EPA's *de minimis* settlements do not sufficiently protect landowners from Superfund cleanup liability because these parties incur high costs to reach *de minimis* settlements. However, EPA disagrees, maintaining that the majority of *de minimis* parties have paid less than \$5,000 each to resolve their liability.
 - Industry representatives felt that removing *de minimis* parties from the liability allocation process early would shield them from paying their fair share of cleanup costs because they would not incur responsibility for any cost overruns that might occur later in the cleanup. EPA reform managers maintain that *de minimis* parties pay a premium to settle early and that this premium is often in excess of any cost overruns that occur.

**Views on Additional
Authority Needed**

- Some small businesses would like to see *de minimis* protection established in law, including a provision that would treat a party's ability to pay as a mitigating factor in the settlement, according to the executive of the organization representing independent businesses.
- EPA disagrees that additional legislation is needed and argues that it has sufficient authority, models, and guidance in place to successfully accomplish *de minimis* and ability-to-pay settlements.

**Appendix I
Fourteen Reforms That EPA Considers as
Fundamental and as Having Achieved
Measurable Results**

**Agreements With
Prospective
Purchasers**

In May 1995, EPA revised its guidance on agreements with prospective purchasers. In such an agreement, EPA promises not to sue a purchaser for contamination that the purchaser did not cause in exchange for the purchaser's commitment to perform cleanup work or provide funds toward cleaning up the site. EPA (1) revised the criteria for evaluating whether it should negotiate an agreement, (2) broadened the universe of sites at which it would consider negotiating an agreement, and (3) encouraged a more balanced trade-off between the benefits to EPA and the public from these agreements. Table 5 shows EPA's performance goals and measures for this reform.

Table 5: Performance Goals and Measures for Reaching Agreements With Prospective Purchasers

Reform	Goals	EPA's performance measures	
		Outcomes	Outputs
Provide assurances to prospective purchasers of contaminated property that they will not be held liable for cleanup costs	Increase program's fairness	Facilitated the purchase of over 1,500 acres of contaminated property	Number of prospective purchaser agreements signed: 114 since 1989
	Restore contaminated sites to beneficial use	Spurred the redevelopment of hundreds of thousands of adjacent acres nationwide	Number of prospective purchaser agreement requests received/addressed (GPRA measure beginning in fiscal year 2000)

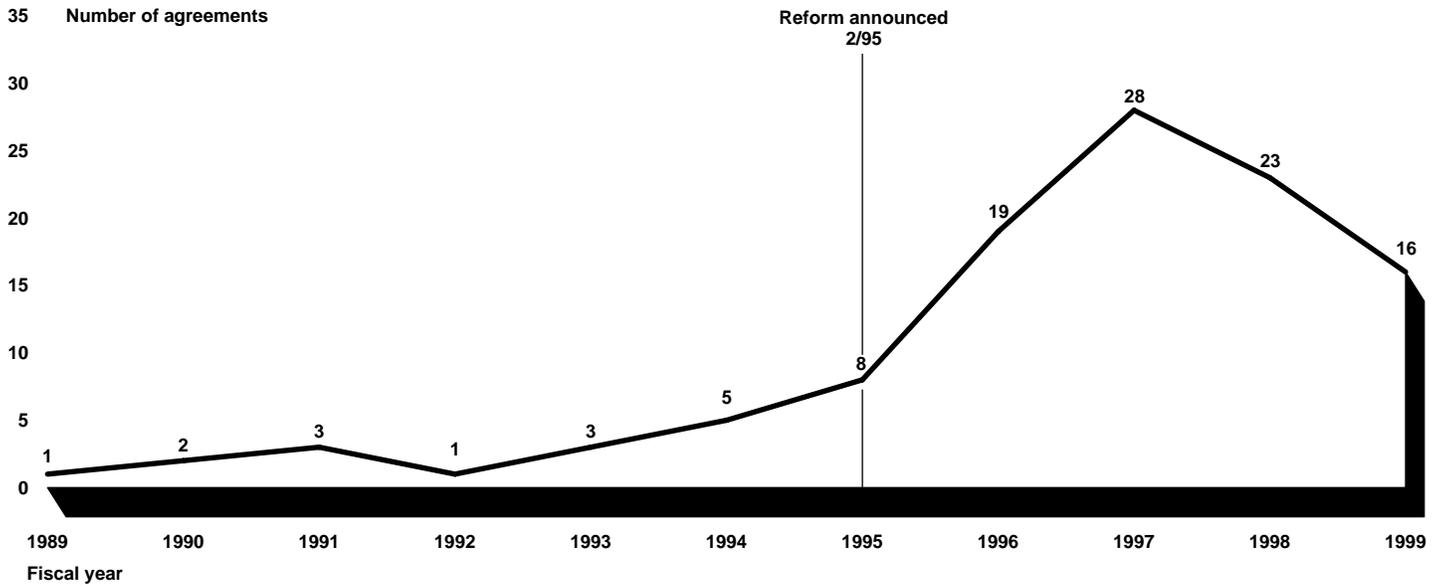
Source: GAO's classification and presentation of information from EPA.

**Results of Reform Identified
by EPA**

Figure 8 shows the number of prospective purchaser agreements completed since fiscal year 1989.

**Appendix I
Fourteen Reforms That EPA Considers as
Fundamental and as Having Achieved
Measurable Results**

Figure 8: Number of Prospective Purchaser Agreements Completed, Fiscal Years 1989-99

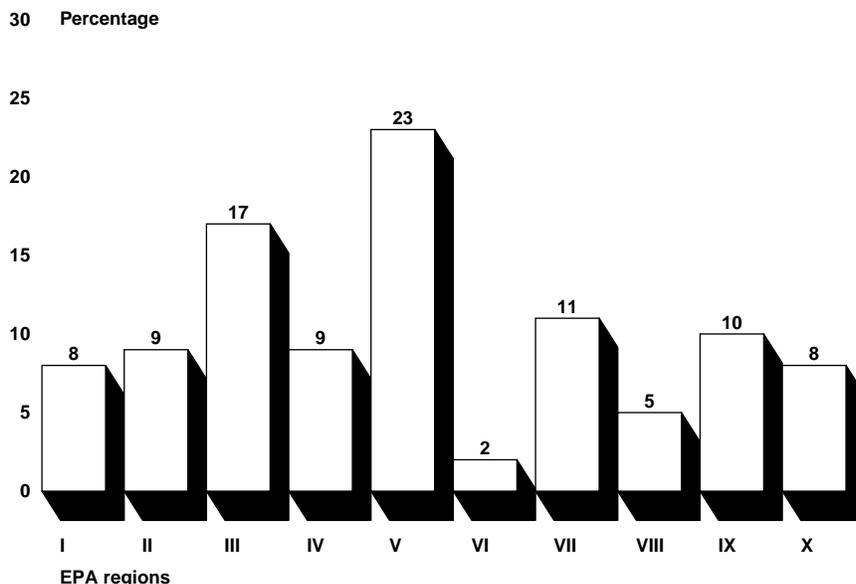


Source: GAO's presentation of data from EPA.

Regional data indicate that all regions are implementing this reform, although at varying rates, as shown in figure 9.

**Appendix I
Fourteen Reforms That EPA Considers as
Fundamental and as Having Achieved
Measurable Results**

Figure 9: Each Region's Percentage of National Prospective Purchaser Agreements, Fiscal Years 1989-99



Source: GAO's presentation of data from EPA.

GAO's and Stakeholders' Observations

- **Sustained effects:** The number of prospective purchaser agreements has increased since the reform was initiated. However, the number of agreements peaked in fiscal year 1997 and has declined during the past 2 years. This decline may indicate that EPA is not sustaining its implementation of this reform. It is difficult for EPA to determine from its performance measures whether the reform has had a significant effect on efforts to redevelop brownfield properties.
- **Contribution of other factors:** EPA reform managers acknowledge that factors other than this reform—particularly the agency's focus on the reuse of contaminated properties— contributed to the overall increase in the number of agreements.
- **Regional implementation:** The data show variations among the regions in implementing this reform that do not correspond with differences in the sizes of their Superfund workloads. According to EPA reform managers, one possible explanation for these variations is that the number of agreements is determined by responsible parties' requests for such agreements, over which EPA has no control. Consequently,

**Appendix I
Fourteen Reforms That EPA Considers as
Fundamental and as Having Achieved
Measurable Results**

according to these managers, the number of agreements for each region would not be expected to be proportional to the size of its workload.

- **Performance measurement:**
 - An increase in the number of prospective purchaser agreements completed does not directly demonstrate that EPA is achieving this reform's goals—increasing the program's fairness and restoring sites to beneficial use. However, because these agreements absolve purchasers of contaminated property who did not cause the contamination of future cleanup liability, the agreements could imply that the program is "fairer" than it would have been otherwise. Similarly, the number of agreements could imply that this reform contributes to property redevelopment because, by limiting liability, an agreement makes the purchase of a contaminated property more economically attractive, encouraging potential buyers to purchase and redevelop it.
 - In fiscal year 2000, EPA began tracking the number of agreement requests received and assessed as a measure of the reform's performance. These data will not directly measure the reform's effect on the program.
 - EPA recognized that it needed to measure the reform's effectiveness more directly. Accordingly, in the summer of 1998, EPA surveyed the regional personnel and private parties who had negotiated the 85 prospective purchaser agreements in existence at that time. Thirty-six of the 85 private party representatives (42 percent) participated in the survey. The findings are being compiled for a summary report, to be available in 2000.

**Views on Additional
Authority Needed**

- Representatives of the responsible parties we contacted believe that this reform does not provide the permanent assurances against liability that they need to make purchases of contaminated property economically attractive. They maintain that legislation is needed to provide full protection.
- EPA supports legislation that would provide relief from liability to prospective purchasers of contaminated property, as well as innocent landowners, contiguous property owners, and small municipal waste generators and transporters.

**Appendix I
Fourteen Reforms That EPA Considers as
Fundamental and as Having Achieved
Measurable Results**

**Provide Compensation
for Cleanup Costs
Attributable to
Insolvent and Defunct
Parties (Orphan
Shares)**

In October 1995, EPA began compensating parties who agree to perform cleanup activities at a Superfund site for some or all of the cleanup costs attributable to other insolvent or defunct parties. Because these parties cannot pay or are no longer available to pay the costs for which they are responsible, their shares of the cleanup costs are known as the orphan shares. EPA developed interim guidance on compensation for orphan shares, limiting it to (1) 25 percent of the cleanup remedy or removal costs, (2) the total past and future oversight costs, or (3) the amount of the actual orphan shares, whichever is less. Table 6 shows EPA's performance goals and measures for this reform.

Table 6: Performance Goals and Measures for Providing Compensation for Orphan Shares

Reform	Goals	EPA's performance measures	
		Outcomes	Outputs
Compensate responsible parties who agree to clean up a site for costs owed by insolvent parties (orphan shares)	Increase program's fairness	None	Number of compensation offers/ dollar amounts offered: 98 offers/\$175.3 million offered through fiscal year 1999 (GPRA measure)
	Reduce litigation and associated costs		Number of compensation agreements reached/dollar amount of compensation provided: 47 agreements/\$88 million through the first quarter of fiscal year 2000
			Maximum amount appropriate for compensation

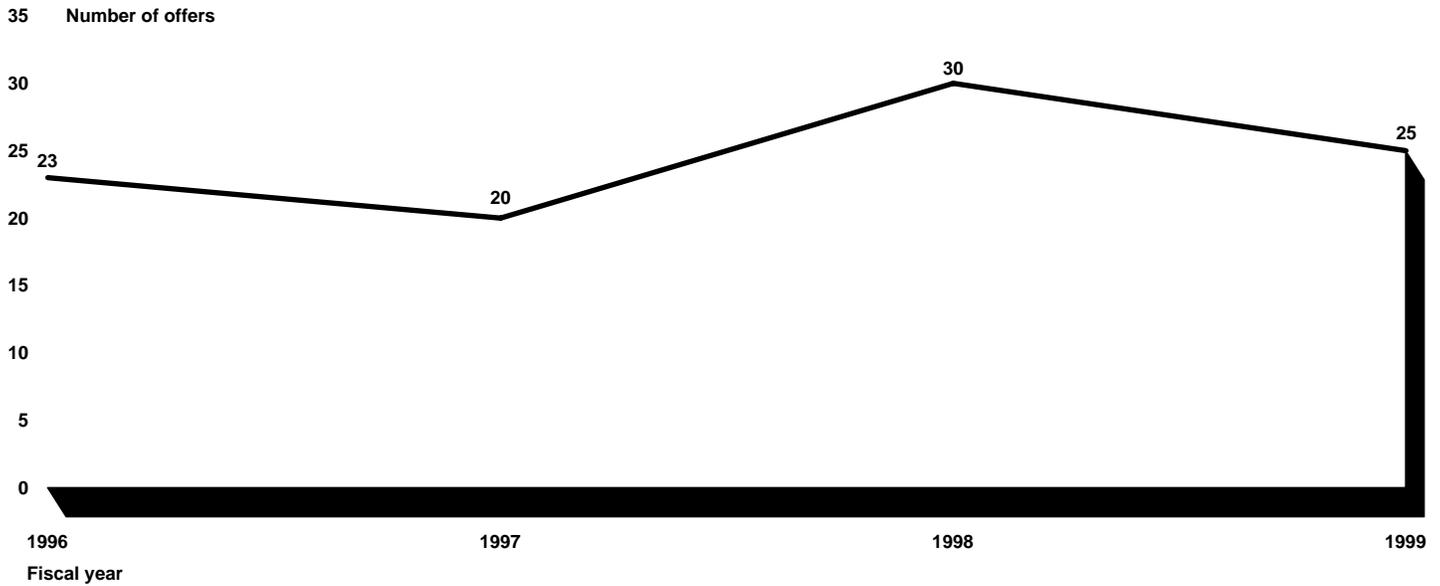
Source: GAO's classification and presentation of information from EPA.

**Results of Reform Identified
by EPA**

Figure 10 shows the number of orphan share compensation offers made through fiscal year 1999.

**Appendix I
Fourteen Reforms That EPA Considers as
Fundamental and as Having Achieved
Measurable Results**

Figure 10: Number of Orphan Share Compensation Offers, Fiscal Years 1996-99

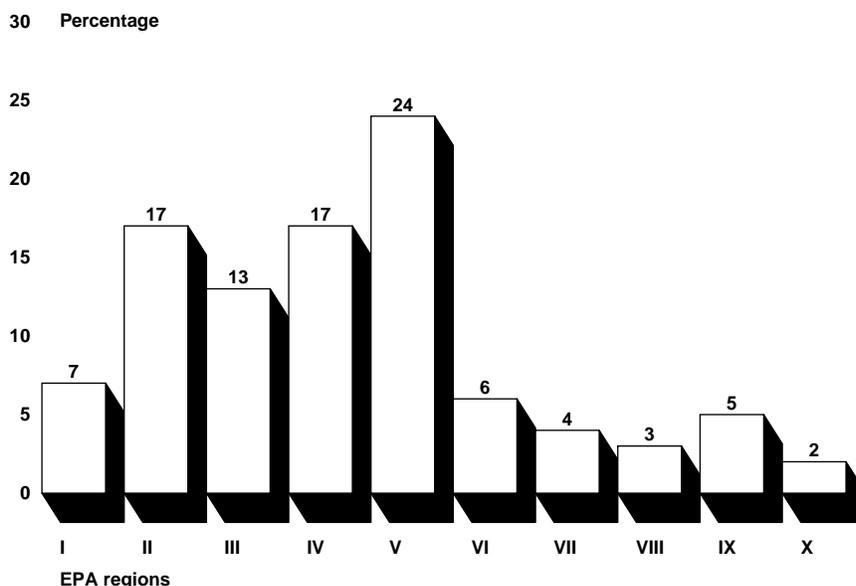


Source: GAO's presentation of data from EPA.

Figure 11 shows the percentage of orphan share compensation offers made by each EPA region through fiscal year 1999.

**Appendix I
Fourteen Reforms That EPA Considers as
Fundamental and as Having Achieved
Measurable Results**

Figure 11: Each Region's Percentage of National Orphan Share Compensation Offers, Fiscal Years 1996-99



Source: GAO's presentation of data from EPA.

GAO's and Stakeholders' Observations

- **Sustained effects:** The relatively steady trend in the number of orphan share offers made over the period reflects the number of sites eligible for the reform. The amount of orphan share compensation relates to the amount of past costs and future oversight costs available to compensate.
- **Contribution of other factors:** EPA reform managers identified no other factors as contributing to the results credited to this reform.
- **Regional implementation:**
 - The limited funds EPA has had each year to offset the costs it assumes during settlements make it difficult to determine if the regions could be more extensively implementing the reform.
 - EPA reform managers suggested that differences in the regions' implementation of this reform do not necessarily indicate inconsistent implementation because the types of sites and costs of cleanup vary across the country. For example, regions VIII, IX, and X made fewer offers because the sites are owner- and/or operator-only sites that EPA excludes from compensation.
- **Performance measurement:**

**Appendix I
Fourteen Reforms That EPA Considers as
Fundamental and as Having Achieved
Measurable Results**

- The number of offers and the dollar amounts offered do not directly demonstrate that EPA has achieved or made progress toward the reform's goals—increasing the program's fairness and reducing litigation and its associated costs. Nevertheless, offering to compensate parties for costs that are attributable to parties who contributed to a site's contamination but cannot pay for the cleanup could imply that the program is "fairer" than it would have been otherwise.
- Data on the number of settlements reached and the compensation paid would, at best, indirectly measure the reform's results.
- Views on reform's benefits/effectiveness:
 - Industry representatives believe this reform can lead to faster settlements. However, they believe that the limits EPA has set on orphan share compensation can discourage settlements. Some representatives believe that (1) they are not any better off under the reform; (2) EPA is less likely to compensate large, financially viable responsible parties; (3) EPA is inconsistent in deciding what portion of cleanup costs are orphan shares; and (4) EPA designates some parties as viable, even though the site itself is their only asset.
 - Some parties would like additional compensation and would like EPA to be more forthcoming about factors such as dollar constraints that limit its compensation decisions.
 - EPA reform managers said that the agency cannot afford to provide additional compensation without obtaining more funding from the Congress. Moreover, according to the managers, parties are not worse off under EPA's policy because the agency can still forgive past costs over and above the orphan share limits when negotiating settlements. Finally, the managers noted, EPA provides orphan share calculations to parties at the beginning of settlement negotiations so that they know the basis for its decisions. The managers acknowledged that these calculations are rough but said that providing more detailed ones would be too costly.

**Views on Additional
Authority Needed**

To give responsible parties complete relief from liability for costs that are not attributable to their activities at a site, EPA reform managers said, EPA needs a congressional allocation to cover the costs attributable to the activities of insolvent or defunct parties. In each of its annual budget requests from fiscal year 1996 through fiscal year 2000, EPA requested \$200 million for orphan share compensation, which it wanted the Congress to provide in a separate account so that the funding for such compensation would not affect the funding for cleanup. However, EPA and the Congress

**Appendix I
Fourteen Reforms That EPA Considers as
Fundamental and as Having Achieved
Measurable Results**

have not been able to agree on a legislative proposal to authorize additional compensation. In its fiscal year 2001 budget request, EPA decreased its request for orphan share compensation to \$150 million in order to request funds for other purposes.

**Encourage the Use of
Site-Specific Special
Accounts**

In October 1995, EPA began encouraging the greater use of “special accounts.” These can be established with any funds received in a Superfund settlement for a site and can then be used to conduct or finance cleanup actions or to reimburse responsible parties for future cleanup actions at the site. The accounts create incentives for the parties to perform cleanup work under settlements with EPA. Table 7 shows EPA’s performance goals and measures for this reform.

Table 7: Performance Goals and Measures for Encouraging the Use of Site-Specific Accounts

Reform	Goals	EPA’s performance measures	
		Outcomes	Outputs
Promote the greater use of site-specific accounts that hold funds obtained through settlements with parties at a site for cleanup actions at that site	Increase program’s fairness	None	Number of accounts and amounts of funds available: 133 accounts/ \$570 million available for site-specific cleanups
	Encourage responsible parties to settle		
	Reduce litigation and associated costs		Number of settlements disbursing funds from accounts and amounts disbursed (beginning in fiscal year 2000)

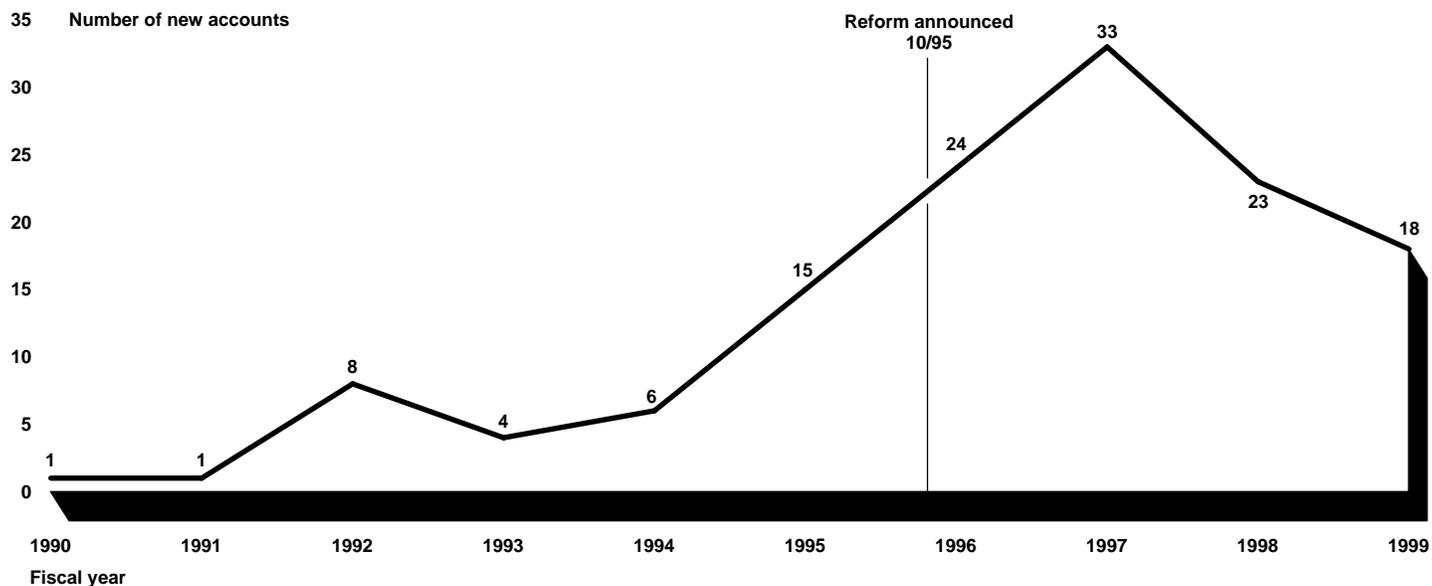
Source: GAO’s classification and presentation of information from EPA.

**Results of Reform Identified
by EPA**

Figure 12 shows the number of special accounts established between fiscal year 1990 and fiscal year 1999.

**Appendix I
Fourteen Reforms That EPA Considers as
Fundamental and as Having Achieved
Measurable Results**

Figure 12: Number of Special Accounts Established, Fiscal Years 1990-99

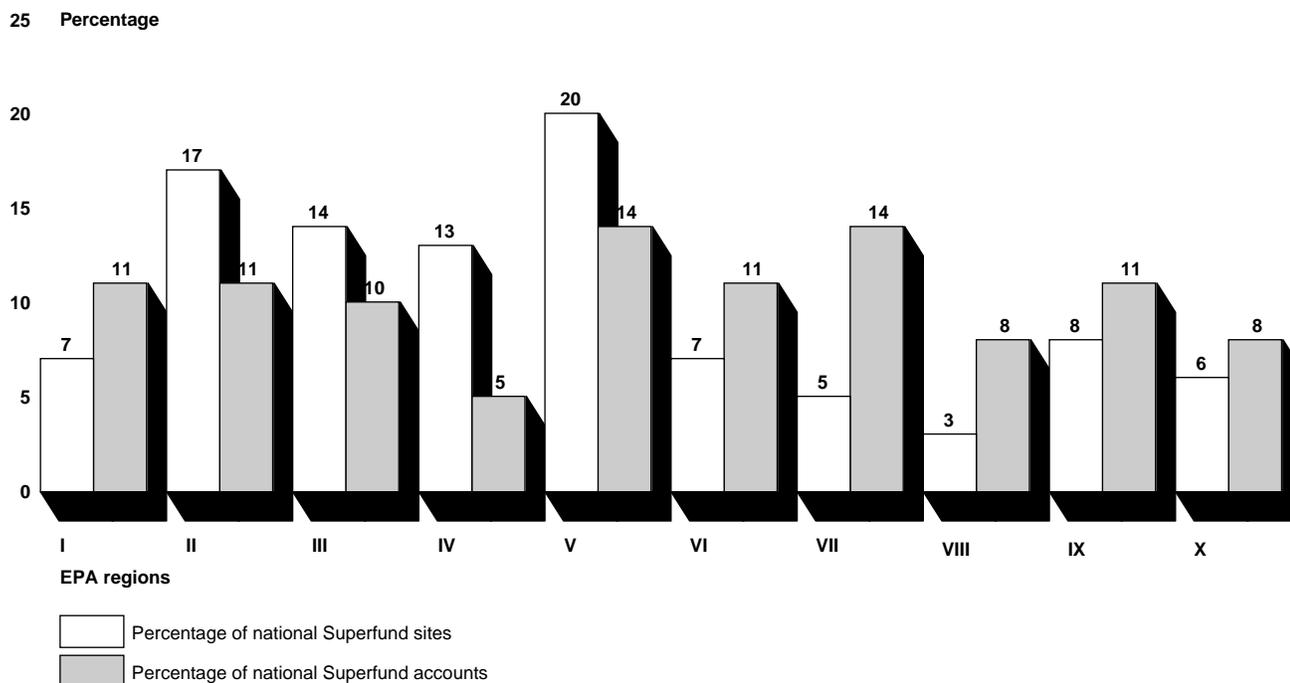


Source: GAO's presentation of data from EPA.

EPA's data show that all regions are implementing this reform (see fig. 13).

**Appendix I
Fourteen Reforms That EPA Considers as
Fundamental and as Having Achieved
Measurable Results**

Figure 13: Each Region's Percentage of National Special Accounts Established, Fiscal Years 1990-99, Compared With Its Percentage of National Superfund Sites



Note: National Superfund sites include final and deleted National Priorities List sites as of Sept. 30, 1999.

Source: GAO's presentation of data from EPA.

GAO's and Stakeholders' Observations

- **Sustained effects:**
 - More new special accounts have been established since EPA's reform than were established before the reform.
 - However, the number of new accounts began increasing a few years before the reform; therefore, the data do not directly link the increases to the reform.
 - The number of new accounts has not increased continuously: in fiscal year 1998, it decreased by about 30 percent from the previous year and continued to decline in fiscal year 1999. This drop in the number of accounts may indicate that EPA is not sustaining its implementation of this reform.

Appendix I
Fourteen Reforms That EPA Considers as
Fundamental and as Having Achieved
Measurable Results

- Contribution of other factors: EPA was unable to identify any factors other than the reform that could have contributed to either the initial increase or the subsequent decrease in the number of special accounts.
- Regional implementation: The number of accounts established by some regions was not proportional to the sizes of their Superfund workloads, suggesting possible inconsistency in regional implementation (see fig. 13). Furthermore, it is difficult for EPA to determine from its performance measures whether the number of accounts—133—relative to the hundreds of eligible Superfund sites nationwide is significant.
- Performance measurement:
 - The numbers of settlements/accounts and the amounts of funds deposited do not directly demonstrate that EPA is achieving the reform's goals—increasing the program's fairness and encouraging parties to perform cleanups. There is no clear correlation between the establishment of accounts and either the program's fairness or the number of settlements.
 - Similarly, the numbers of settlements designating disbursements and the amounts disbursed do not directly measure either fairness or the reform's effects on settlements.
 - EPA reform managers told us that measuring the effects of funds in special accounts on responsible parties' decisions to settle and perform cleanups would be another performance measure to track the reform's outcomes. However, this information would be difficult for EPA to obtain because the agency cannot survey such parties without receiving approval from the Office of Management and Budget (OMB) to collect the information. OMB denied EPA's initial request, and EPA has not decided whether it will submit a revised request.
- Views on reform's benefits/effectiveness:
 - According to a 1999 audit of the special accounts by EPA's Office of the Inspector General, (1) EPA's process for reconciling transactions and balances did not ensure that errors could be identified and corrected and (2) regional personnel were not always sufficiently aware of the existence and intended use of these accounts. EPA has agreed to take actions such as revising guidance and providing the regions with updated information and instructions on technical aspects of managing the accounts to correct many of the identified problems.
 - Industry stakeholders we contacted said they do not consider this a significant reform because EPA has not made account funds widely available to responsible parties. EPA reform managers responded that the original reform did not include disbursements from the

**Appendix I
Fourteen Reforms That EPA Considers as
Fundamental and as Having Achieved
Measurable Results**

special accounts to potentially responsible parties. EPA first published guidance on disbursements to potentially responsible parties in November 1998.

Views on Additional Authority Needed

EPA reform managers said no additional legal authority is needed to pursue this reform.

Revise Guidance on Settlements With Miniscule Waste Contributors

In June 1996, EPA revised its existing guidance to further prevent *de micromis* parties—those who contributed miniscule amounts of waste to a Superfund site—from incurring legal and other costs that may exceed their share of the site’s cleanup costs. The revised guidance (1) expanded the number of parties eligible for *de micromis* settlements, (2) offered no-cost protective agreements that remove *de micromis* parties from the liability process, (3) streamlined and simplified the settlement process, and (4) clarified and emphasized EPA’s intent to protect such parties. Table 8 shows EPA’s performance goals and measures for this reform.

Table 8: Performance Goals and Measures for Revised Guidance on Settlements With Miniscule Waste Contributors

Reform	Goals	EPA’s performance measures	
		Outcomes	Outputs
Revise guidance to discourage litigation against <i>de micromis</i> parties—those who contributed miniscule waste volumes to sites	Increase program’s fairness Reduce litigation and associated costs	None	Number of settlements with <i>de micromis</i> parties: 16 at 11 sites through fiscal year 1999

Source: GAO’s classification and presentation of information from EPA.

Results of Reform Identified by EPA

During fiscal years 1993-98, EPA completed 16 *de micromis* settlements with parties at 11 Superfund sites. The settlements at five of the sites were based on EPA’s 1993 *de micromis* guidance, drafted before the reform, and those at the remaining six sites were based on the agency’s 1996 guidance, revised after the reform. Region III had the largest number of sites with *de micromis* settlements (five) through fiscal year 1999; Region II had three settlements; Regions I, IV, and IX had no settlements; and the remaining regions had either one or two settlements each.

**GAO's and Stakeholders'
Observations**

- **Sustained effects:** Because the number of *de micromis* settlements is small, it is difficult to determine the extent to which the reform has had an effect or if these effects have been sustained.
- **Contribution of other factors:** EPA reform managers identified no other factors as contributing to the results credited to this reform.
- **Regional implementation:** Because so few settlements have been completed to date, the data are insufficient to determine if the regions are implementing the reform consistently.
- **Performance measurement:** EPA's measures of the success of this reform do not directly indicate the extent to which the reform is achieving its goals—increasing the program's fairness and reducing litigation and its associated costs. However, because *de micromis* settlements remove parties that have contributed only miniscule amounts of waste at a site from the liability process, thereby shielding them from costly litigation, these settlements could imply that the program is fairer than it would have been otherwise and that the potential for litigation and any associated costs has been reduced.
- **Views on reform's benefits/effectiveness:**
 - EPA reform managers believe that the reform is successful if EPA negotiates only a few *de micromis* settlements. They believe that the reform deters responsible parties from filing third-party contribution suits to get the small parties to help pay for cleanups. If the reform has such a deterrent effect, small parties do not need a *de micromis* settlement for protection.
 - Industry representatives agreed that EPA is now more successful in removing *de micromis* parties from the liability process.
 - The executive of the organization representing small businesses believes that some miniscule contributors may continue to incur often-onerous legal costs. EPA reform managers acknowledge that such contributors may incur legal expenses if either EPA does not identify them as *de micromis* parties or they do not identify themselves to EPA in a timely manner.

**Views on Additional
Authority Needed**

- EPA reform managers said the agency does not need any additional legal authority to pursue this reform.
- Some private parties we contacted believe that *de micromis* liability protection needs to be established in law to shield miniscule contributors from onerous legal costs.

**Appendix I
Fourteen Reforms That EPA Considers as
Fundamental and as Having Achieved
Measurable Results**

**Updating Remedy
Decisions**

In October 1995, EPA began encouraging the regions to revisit cleanup remedies selected in the past and, where appropriate, to select different remedies that incorporate recent technological advances, ensuring that the updated remedies are both protective and more cost-effective. EPA issued guidance on updating remedy decisions in September 1996. Table 9 shows EPA's performance goals and measures for this reform.

Table 9: Performance Goals and Measures for Updating Remedy Decisions

Reform	Goals	EPA's performance measures	
		Outcomes	Outputs
Encourage the regions to revisit previous remedy decisions and use new scientific information or technological advances to update the decisions	Enhance remedies' cost-effectiveness Implement remedies that reflect advances in science or technology	Total estimated future cost savings and increases for all remedy updates: \$1.3 billion through fiscal year 1999	Total number of remedy updates approved: 295 during fiscal years 1996-99

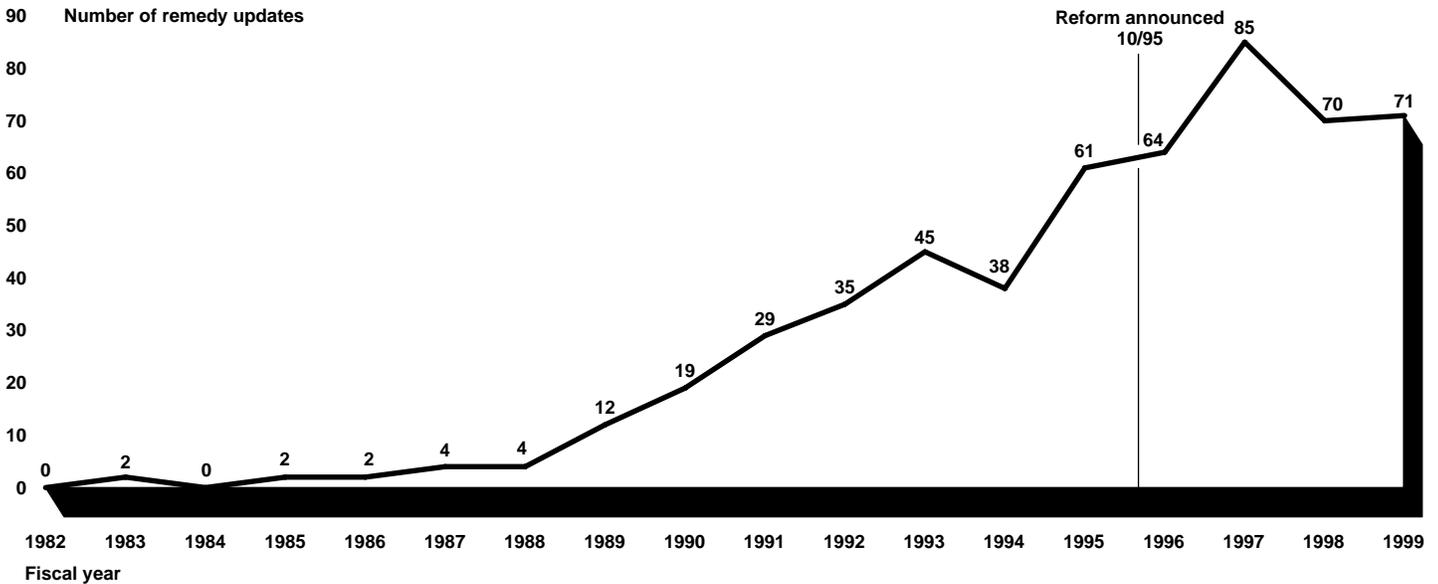
Source: GAO's classification and presentation of information from EPA.

**Results of Reform Identified
by EPA**

Figure 14 shows the number of cleanup remedies updated annually during fiscal years 1982-99.

**Appendix I
 Fourteen Reforms That EPA Considers as
 Fundamental and as Having Achieved
 Measurable Results**

Figure 14: Number of Cleanup Remedy Updates per Year, Fiscal Years 1982-99



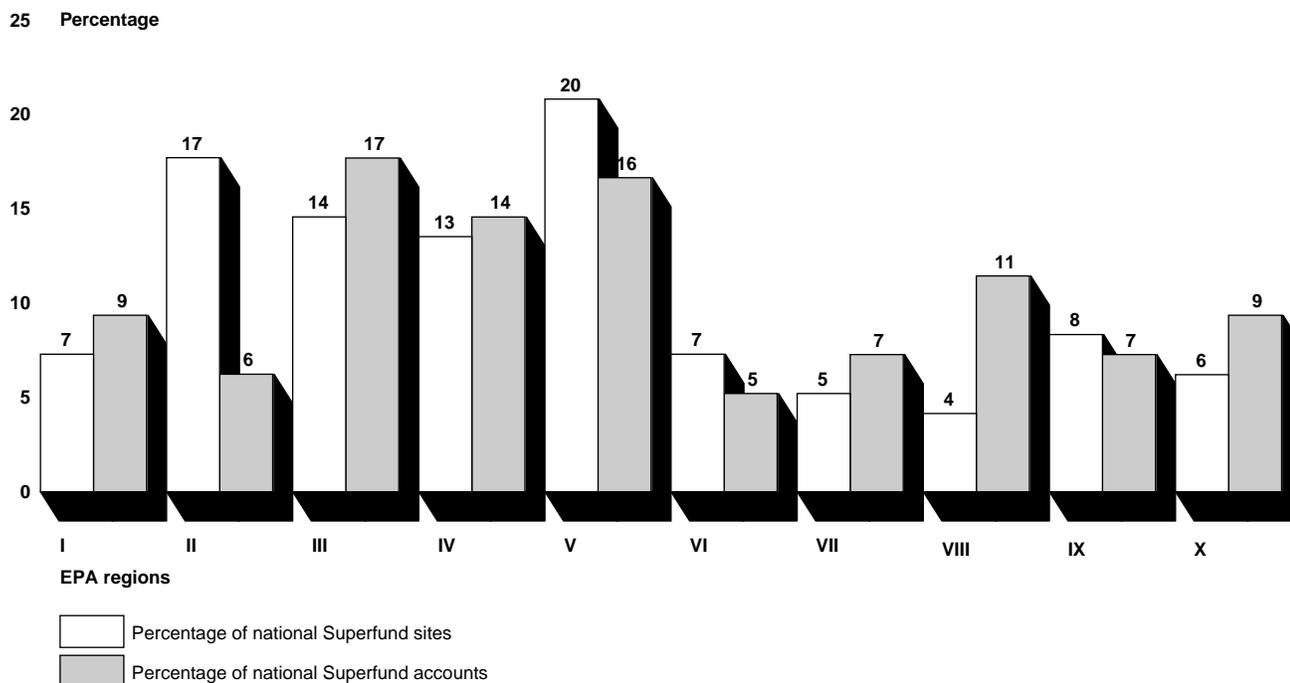
Source: GAO's presentation of data from EPA.

While EPA reported that the 295 remedies it had updated since the reform started would result in future cost savings of more than \$1.3 billion, the agency also estimated that some of these updates would result in cost increases totaling approximately \$123 million.

Data from EPA show that all 10 regions are implementing this reform, as illustrated in figure 15.

**Appendix I
Fourteen Reforms That EPA Considers as
Fundamental and as Having Achieved
Measurable Results**

Figure 15: Each Region's Percentage of National Cleanup Remedy Updates, Fiscal Years 1996-99, Compared With Its Percentage of National Superfund Sites



Note: National Superfund sites include final and deleted National Priorities List sites as of Sept. 30, 1999.

Source: GAO's presentation of data from EPA.

GAO's and Stakeholders' Observations

- **Sustained effects:**
 - EPA's data show that the regions are updating remedy decisions and achieving cost savings for both responsible parties and EPA. However, the upward trend in the number of remedy updates during the 7 years preceding the reform raises questions about the extent to which the reform itself promoted updating.
 - The number of remedies EPA updated peaked in fiscal year 1997, declined in fiscal year 1998, and remained at about the same level in fiscal year 1999. The decline in the number of remedy updates since fiscal year 1997 may indicate that EPA is not sustaining its implementation of this reform.
 - EPA predicts that at some point in the future, the regions will have reviewed most past remedies for an update and the opportunities to

**Appendix I
Fourteen Reforms That EPA Considers as
Fundamental and as Having Achieved
Measurable Results**

achieve additional cost savings will decrease. But for fiscal year 2000, the regions plan to review about as many remedies as they have reviewed in the past few years.

- **Contribution of other factors:** EPA acknowledges that other reforms addressing the selection of cleanup remedies, such as a directive providing more flexibility to assume that sites will be used for industrial rather than residential purposes and will therefore require less extensive cleanup, also contributed to the cost savings achieved.
- **Regional implementation:**
 - Some industry representatives said that individual cleanup managers and regions differ in their willingness to consider a remedy for an update; as a result, the representatives believe they do not have a consistent chance to achieve cost savings.
 - EPA does not know whether the regions are considering all possible remedies. EPA's data show regional differences in the number of updates—one region updated three times as many remedies as another, even though both regions managed about the same number of Superfund sites.
 - EPA did not determine the reasons for the differences. However, according to EPA reform managers, some regions could have more sites with contaminated groundwater than other regions. Such sites would be good candidates for remedy updates because new technologies have become available for cleaning up contaminated groundwater. According to these reform managers, a remedy update depends on the availability of new data suggesting that a modification to the remedy may be feasible; without new data, there is no basis to change the remedy.
- **Performance measurement:**
 - Measuring the extent of the reform's effect is difficult. EPA admits that its estimates of cost savings are not rigorous, partly because the agency depends on private parties to voluntarily provide estimates of cost savings for the cleanups they manage. The agency believes that it is not cost-effective to obtain and track more precise cost data to better measure savings.
 - We could not verify the cost savings claimed because EPA (1) does not maintain supporting documentation for the savings estimates and (2) cannot require private parties to provide such documentation.
- **Views on reform's benefits/effectiveness:** Industry representatives gave high marks to this reform for leading to more cost-effective cleanups.

**Appendix I
Fourteen Reforms That EPA Considers as
Fundamental and as Having Achieved
Measurable Results**

**Views on Additional
Authority Needed**

EPA reform managers said that no additional legal authority is needed to pursue this reform.

**Increase Construction
Completions**

In 1991, EPA began to classify certain sites as construction complete. A site is considered construction complete when one or more of the following conditions is met:

- Any necessary physical construction is complete, whether or not final cleanup levels have been met.
- EPA has determined that the response action should be limited to measures that do not involve construction.
- A site qualifies for deletion from the National Priorities List (when no further action is needed to protect human health and the environment).

One of the reforms announced by EPA in 1993 aimed to increase the number of sites designated as construction complete. Reflecting this priority, in the mid-1990s, EPA shifted funds from assessing sites whose inclusion in the Superfund program was not yet certain to completing the construction of remedies at sites already in the program. Table 10 shows EPA's performance goals and measures for this reform.

Table 10: Performance Goals and Measures for Increasing Construction Completions

Reform	Goals	EPA's performance measures	
		Outcomes	Outputs
Increase the number of sites where all remedies have been constructed	Accelerate construction and advance the program	None ^a	Number of sites where all remedies have been constructed: 670 through the end of fiscal year 1999 (GPRA measure)

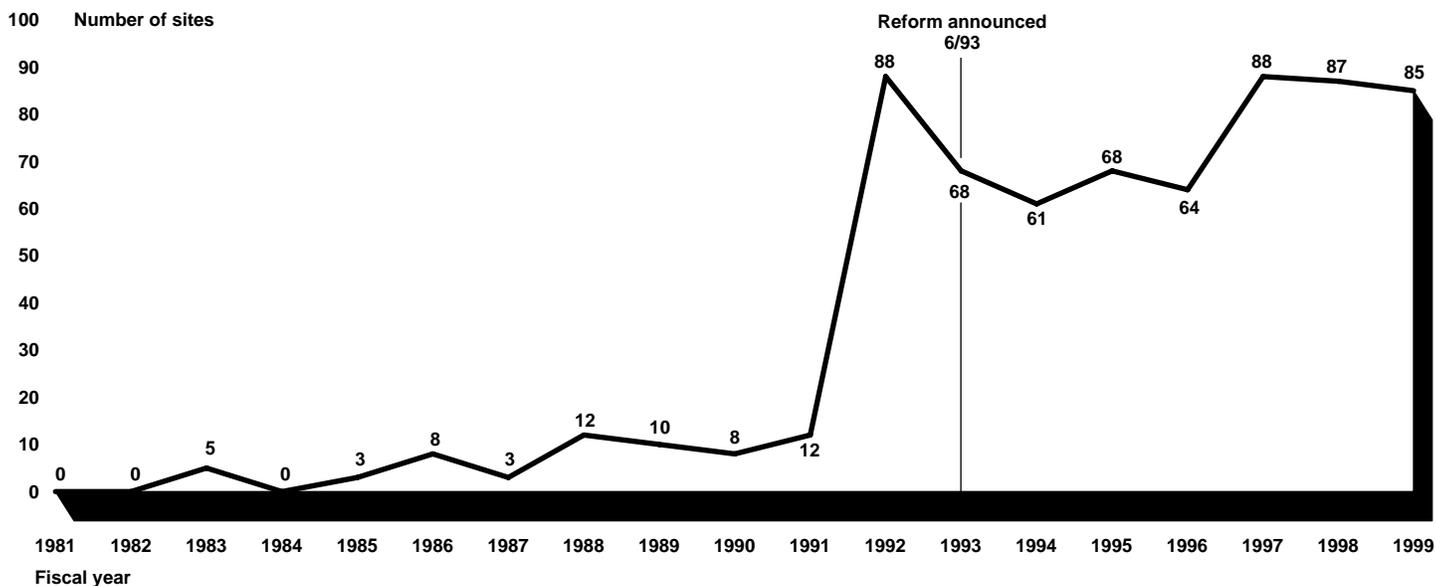
^aThe EPA manager for this reform considers the number of sites where construction has been completed to be an outcome measure. We disagree; therefore, we show the measure as an output.
Source: GAO's classification and presentation of information from EPA.

Results Identified by EPA

Figure 16 shows the number of sites whose cleanup remedies were complete as of the end of fiscal year 1999.

**Appendix I
Fourteen Reforms That EPA Considers as
Fundamental and as Having Achieved
Measurable Results**

Figure 16: Number of Sites Designated as Construction Complete, Fiscal Years 1981-99

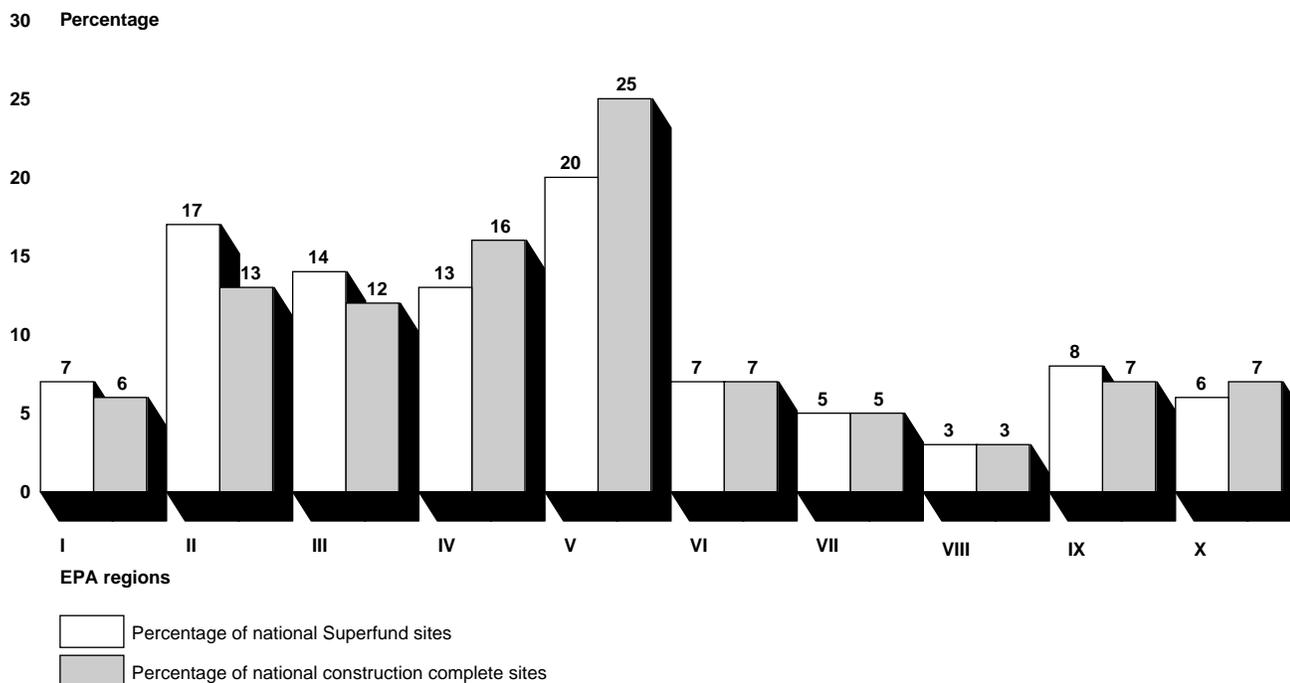


Source: GAO's presentation of data from EPA.

Each EPA region has completed the construction of cleanup remedies at a similar rate relative to its share of the nation's Superfund sites (see fig. 17).

**Appendix I
Fourteen Reforms That EPA Considers as
Fundamental and as Having Achieved
Measurable Results**

Figure 17: Each Region's Percentage of National Construction Complete Sites, Fiscal Years 1981-99, Compared With Its Percentage of National Superfund Sites



Note: National Superfund sites include final and deleted National Priorities List sites as of Sept. 30, 1999.

Source: GAO's presentation of data from EPA.

GAO's and Stakeholders' Observations

- **Sustained effects:** EPA has increased the number of sites designated as construction complete, in part because of its reform.
- **Contribution of other factors:**
 - The EPA manager for this reform said that other reforms, such as those promoting the use of more cost-effective remedies or faster settlements with responsible parties, have also contributed to increases in construction completions, but the effects of individual reforms cannot be isolated and measured.
 - The maturing of the program, which is now about 20 years old, also contributed to the increase. With the construction of many remedies taking more than 10 years to complete, the number of completions was expected to grow by the early 1990s. Moreover, when EPA shifted resources to this reform, it also increased the backlog of sites

**Appendix I
Fourteen Reforms That EPA Considers as
Fundamental and as Having Achieved
Measurable Results**

awaiting assessment and consideration for inclusion in the Superfund program.

- **Regional implementation:** EPA's data suggest that all regions are consistently implementing this reform. The number of sites where EPA can complete construction is limited by the funds available each year for this purpose.
- **Performance measurement:**
 - EPA measures the increase in construction completions by tracking the number of sites completed each year. This measure does not necessarily demonstrate that the agency is completing construction faster.
 - In December 1997, EPA's Office of the Inspector General reported that while EPA had generally reported the construction completion statistic accurately, it had at times represented sites where construction was complete as if (1) all cleanup work was done and (2) the sites could be returned to economic use. However, cleanup work is not always done and sites cannot always be returned to economic use when construction is complete. As a result, the Inspector General concluded that EPA might have been misinforming the Congress and the public as to the status of cleanup at Superfund sites. In response to a recommendation by the Inspector General, EPA's Acting Assistant Administrator for Solid Waste and Emergency Response issued a memorandum emphasizing the need to use the construction completion statistic accurately in all documents and not to overstate what it represents.
 - Some stakeholders argue that the measure is not meaningful because it measures only whether remedies have been constructed, not whether the cleanup itself is complete and health risks have been eliminated. For example, the construction of remedies to address contaminated groundwater may be complete, but the remedies typically must operate for many years before the site is considered cleaned up.
 - EPA disagrees that the construction completion measure is not meaningful because sites cannot be classified as construction complete until all direct threats have been mitigated and all long-term threats brought under control.
 - EPA has established the number of areas at sites where cleanup goals have been met as an environmental indicator. Reform managers said that EPA is considering whether it should use this indicator in addition to construction completions.
- **Views on reform's benefits/effectiveness:** An industry representative agreed that the reform has increased construction completions.

**Appendix I
Fourteen Reforms That EPA Considers as
Fundamental and as Having Achieved
Measurable Results**

**Views on Additional
Authority Needed**

EPA reform managers said that no additional legal authority is needed to pursue this reform. However, they predicted that program budget cuts in fiscal year 2000 could interfere with the agency's ability to meet its construction completion goals for fiscal year 2001 and beyond.

**Establish the National
Remedy Review Board**

EPA created the National Remedy Review Board in November 1995 to review certain proposed cleanup strategies and recommend how or whether they can be improved. The Board reviews all proposed cleanup strategies whose estimated costs are (1) more than \$30 million or (2) more than \$10 million if the proposed strategy is 50 percent costlier than the least costly protective alternative that complies with all appropriate environmental laws and regulations. In fiscal year 1998, the Board also began reviewing certain proposed removal actions estimated to cost more than \$30 million. The Board's recommendations are not binding, but regional managers must explain, in a memorandum, how they have considered these recommendations. Table 11 shows EPA's performance goals and measures for this reform.

Table 11: Performance Goals and Measures for Establishing the National Remedy Review Board

Reform	Goals	EPA's performance measures	
		Outcomes	Outputs
Establish a board composed of EPA managers and senior technical and policy experts to review proposed high-cost cleanup actions	<p>Select more consistent remedies across the nation</p> <p>Improve remedies' cost-effectiveness</p> <p>Ensure that decisions are in accordance with current laws, regulations, and guidance</p>	Estimated savings from reviewed proposals: \$70.7 million through the end of the first quarter of fiscal year 2000	Number of cleanup proposals reviewed: 43 through the end of the first quarter of fiscal year 2000

Source: GAO's classification and presentation of information from EPA.

**Results of Reform Identified
by EPA**

To date, 7 of the Board's 43 reviews have resulted in estimated savings totaling \$70.7 million, as table 12 illustrates.

**Appendix I
Fourteen Reforms That EPA Considers as
Fundamental and as Having Achieved
Measurable Results**

Table 12: Number of Board Reviews and Estimated Savings, Fiscal Years 1996-2000

Dollars in millions

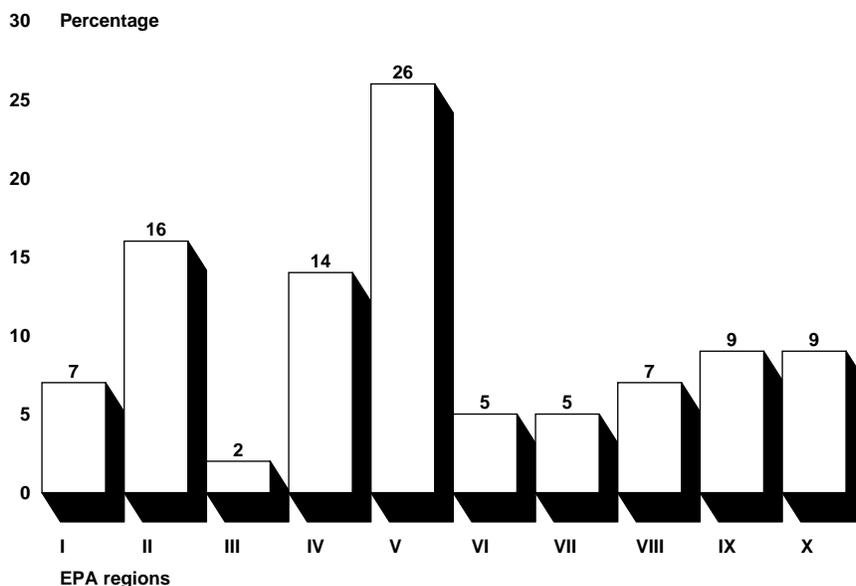
	1996	1997	1998	1999	2000 ^a	Total
Number of remedies reviewed	11	9	10	11	2	43
Number of reviews resulting in savings to date	3	3	0	1	0	7
Estimated savings to date	\$34.2	34.9	0	1.6	0	\$70.7

^aData are for the first 3 months of fiscal year 2000.

Source: GAO's presentation of data from EPA.

The Board has reviewed cleanup strategies for sites in all 10 EPA regions (see fig. 18).

Figure 18: Each Region's Percentage of National Remedy Review Board Reviews



Source: GAO's presentation of data from EPA.

GAO's and Stakeholders' Observations

- Sustained effects: Data from EPA suggest that this reform has resulted in a consistent number of reviews annually since the Board was established in fiscal year 1996. This consistency is due, at least partially,

Appendix I
Fourteen Reforms That EPA Considers as
Fundamental and as Having Achieved
Measurable Results

to budgetary limitations on the number of reviews the Board can conduct each year.

- Contribution of other factors: The EPA manager for this reform said that EPA's estimates of cost savings from the Board's reviews do not include any savings that may have resulted from other factors.
- Regional implementation: All regions have submitted at least one proposed cleanup strategy to the Board for review. However, because the number of proposed remedies that qualify for the Board's review is likely to vary among the regions, EPA's data are insufficient to determine whether the regions are implementing the reform consistently.
- Performance measurement:
 - EPA's performance measures for this reform—the number of proposals reviewed and the dollars saved—indirectly measure progress toward two of the reform's goals: selecting more consistent remedies and ensuring that decisions are in accordance with current laws, regulations, and guidance. Neither measure indicates whether the remedies have accomplished these goals, although the Board checks for consistency and conformance during its review process. The dollars saved measure addresses the cost component of cost-effectiveness, but not the effectiveness component.
 - Developing a mechanism to track the extent to which the Board's reviews have led to the selection of more consistent remedies could be difficult, particularly for sites the Board has not reviewed, as the EPA manager for this reform acknowledges. The Inspector General's review of the Board concluded that controls to ensure reviews of all qualifying decisions would be difficult and costly to implement.
- Views on reform's benefits/effectiveness:
 - EPA estimates that the average cost of all new Superfund cleanup actions fell 25 percent from 1987 to 1998. EPA reform managers believe the Board's reviews have decreased the costs of cleanups, both directly at the sites with proposed remedies that have been reviewed and indirectly at other sites where lessons learned from the reviews have been applied. Two industry representatives agreed that lessons learned from the Board's reviews have had a positive impact at other sites.
 - Three industry representatives said that the potential for the Board to review a remedy decision has led the regions to share information on remedies and, in some instances, to push less often for what responsible parties believe are unnecessarily expensive remedies.
 - An industry representative told us that the \$30 million cost threshold excludes too many high-cost remedies from review. EPA's position is that the threshold was chosen to result in a manageable number of

**Appendix I
Fourteen Reforms That EPA Considers as
Fundamental and as Having Achieved
Measurable Results**

reviews for the Board, considering its available staff and financial resources. EPA believes the Board can reasonably manage reviews of about 10 percent of Superfund cleanup proposals. Because the actual number of reviews has fluctuated between 9 and 13 percent, EPA has chosen not to lower the threshold.

- Industry representatives also believe the Board's 10-page limit on responsible parties' technical submissions to the Board does not provide adequately for addressing complex site issues. Parties would like more direct input into the Board's reviews. In fiscal year 1997, EPA increased the limit from 5 to 10 pages in response to concerns expressed by responsible parties and others and believes that this increase provides for sufficient input.

**Views on Additional
Authority Needed**

EPA reform managers said that no additional legal authority is needed to pursue this reform.

**Superfund Accelerated
Cleanup Model**

Under the Superfund Accelerated Cleanup Model, introduced in 1992, EPA streamlines the steps used to (1) study a site's contamination and design a cleanup method and (2) assess the site's conditions and risks at various stages. First, the agency conducts non-time-critical removals, or substantial, nonemergency, shorter-term cleanup actions at portions of a site. Second, the agency performs combined site assessments, which join the preliminary assessment of a site with the site inspection process, and integrated site assessments, which merge the assessments conducted before a shorter-term removal action and the longer-term remedial actions at a site. EPA included the model among the administrative improvements it announced in June 1993. Table 13 shows EPA's performance goals and measures for this reform.

**Appendix I
Fourteen Reforms That EPA Considers as
Fundamental and as Having Achieved
Measurable Results**

Table 13: Performance Goals and Measures for Using the Superfund Accelerated Cleanup Model

Reform	Goals	EPA's performance measures	
		Outcomes	Outputs
Use the removal program to conduct nonemergency cleanup actions at portions of sites that otherwise would be addressed by the remedial program and merge assessments of conditions and risks at selected sites ^a	Expedite cleanups	Time savings from integrating site assessment activities	Number of non-time-critical, short-term cleanup actions, or removals, initiated: 223 through fiscal year 1999
	Enhance states' roles	Cost savings from integrating site assessment activities	Number of combined site assessments performed: 405 through fiscal year 1999
	Address worst threats first		
			Number of integrated site assessments performed: 442 through fiscal year 1999

^aThe model also included other components, such as efforts to encourage the use of presumptively preferred remedies at all appropriate sites, increase states' and communities' participation in the program, initiate enforcement activities earlier, and address the worst threats first. These efforts, incorporated into later reforms, are addressed in our summary of those reforms.

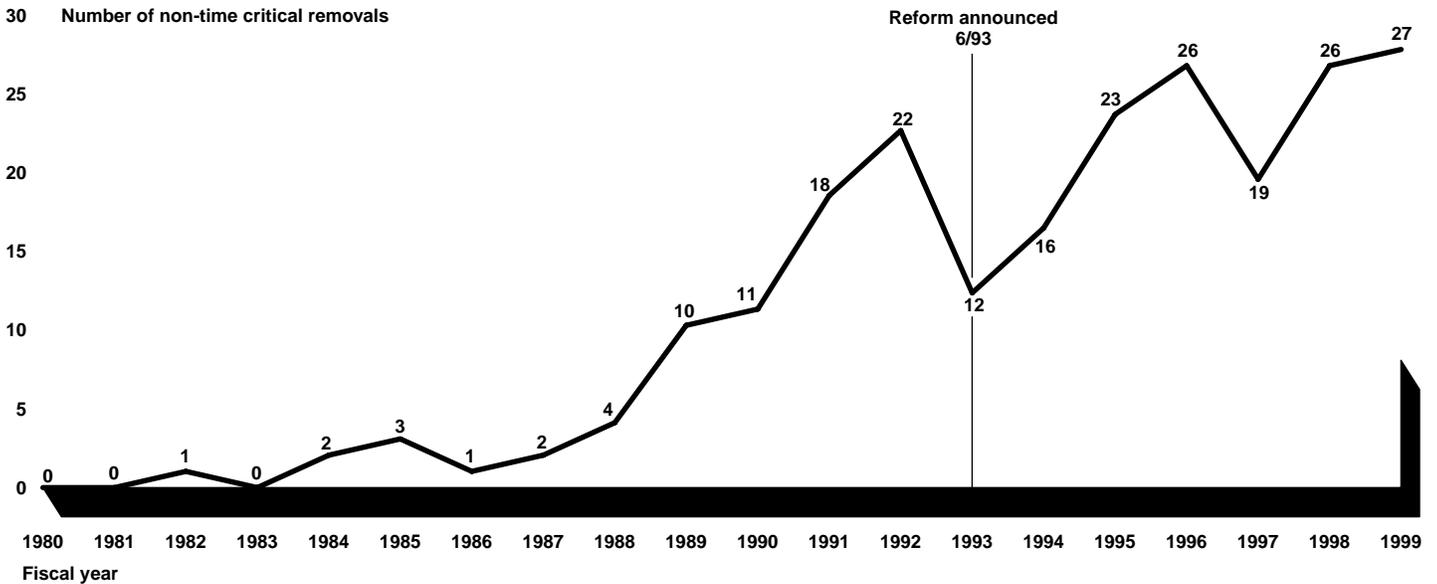
Source: GAO's classification and presentation of information from EPA.

Results of Reform Identified by EPA: Non-Time-Critical Removals

Through this reform, EPA increased the number of non-time-critical removals, thereby expediting cleanups and saving money (see fig. 19).

**Appendix I
Fourteen Reforms That EPA Considers as
Fundamental and as Having Achieved
Measurable Results**

Figure 19: Number of Non-Time-Critical Removals, Fiscal Years 1980-99



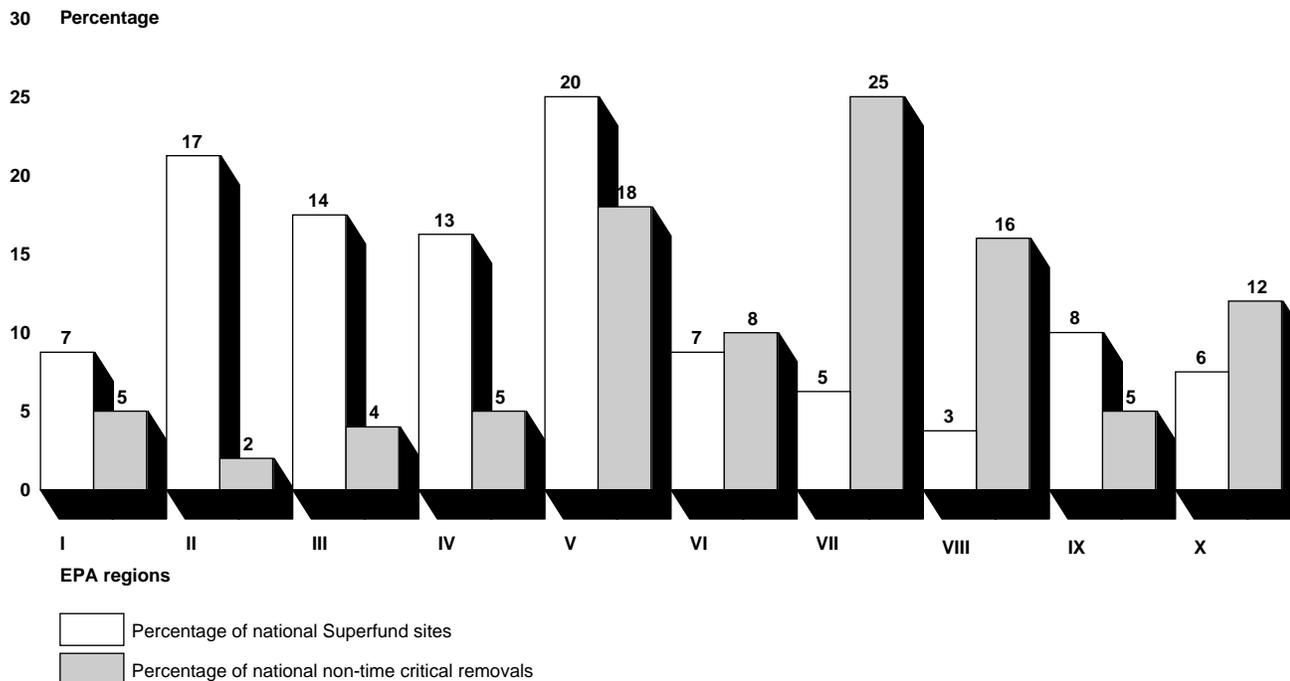
Source: GAO's presentation of data from EPA.

In 1995, EPA site managers estimated that non-time-critical removals, on average, reduce the time and cost of remedial actions from 4 years and about \$4.1 million to 2 years and about \$3.6 million, producing savings of 2 years and about \$0.5 million.

During fiscal years 1992-99, there was wide variation in the number of non-time-critical removals performed across the regions, relative to each region's share of Superfund sites (see fig. 20).

**Appendix I
Fourteen Reforms That EPA Considers as
Fundamental and as Having Achieved
Measurable Results**

Figure 20: Each Region's Percentage of National Non-Time-Critical Removals, Fiscal Years 1992-99, Compared With Its Percentage of National Superfund Sites



Note: National Superfund sites include final and deleted National Priorities List sites as of Sept. 30, 1999.

Source: GAO's presentation of data from EPA.

**Results of Reform Identified
by EPA: Combined and
Integrated Site Assessments**

From October 1, 1992 through January 10, 2000, EPA performed combined site assessments—both the preliminary assessment of a site and the site inspection process—at 430, or 30 percent, of the 1,421 sites that were eligible for such assessments. From 1994 to 1999, EPA also performed 442 integrated assessments. These merge the assessments conducted before a shorter-term removal action and the longer-term remedial actions at a site.

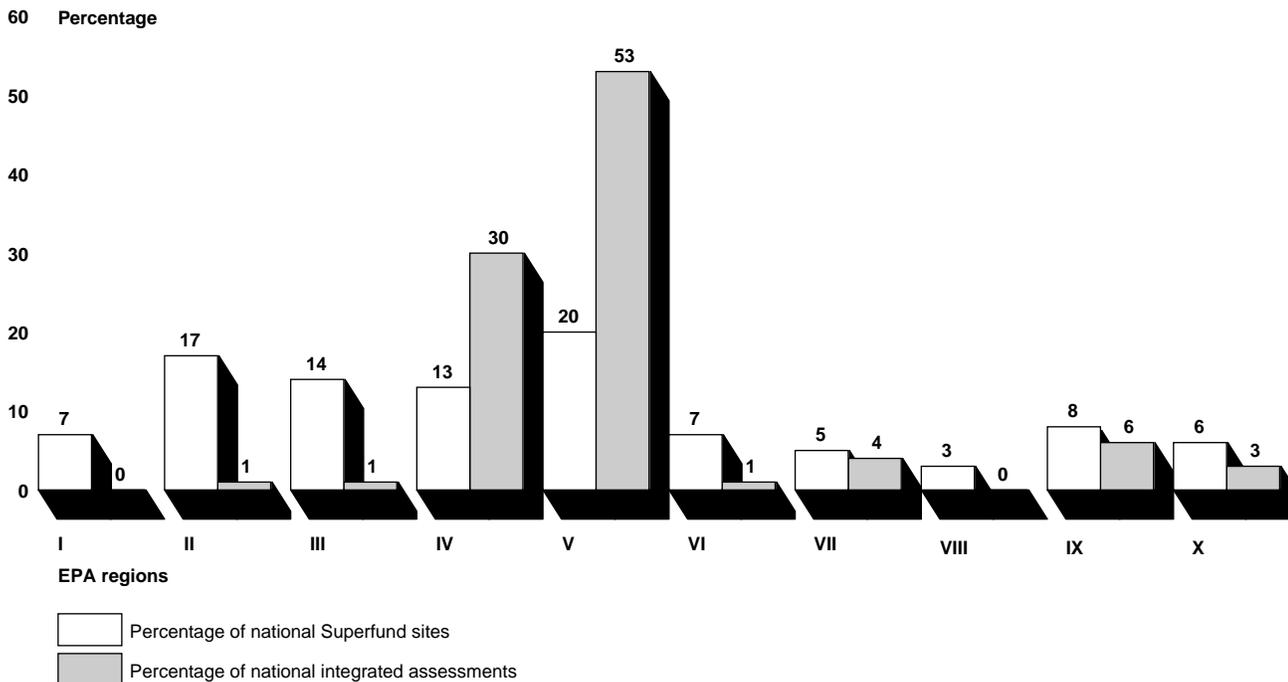
EPA estimates that combined assessments, on average, save about \$2,500 and, more important, shorten the cleanup process by about 11 months. EPA said that it could not compute cost and time savings for integrated assessments because they are used at sites that are generally larger, have higher volumes of waste and more types of contamination, and present

**Appendix I
Fourteen Reforms That EPA Considers as
Fundamental and as Having Achieved
Measurable Results**

more complex cleanup issues than sites that do not use such assessments. Therefore, the two types of sites are not comparable.

The number of integrated assessments performed across the regions varied widely relative to each region's share of Superfund sites, as figure 21 illustrates.

Figure 21: Each Region's Percentage of National Integrated Assessments, Fiscal Years 1994-99, Compared With Its Percentage of National Superfund Sites



Note: National Superfund sites includes final and deleted National Priorities List sites as of Sept. 30, 1999.

Source: GAO's presentation of data from EPA.

GAO's and Stakeholders' Observations

- **Sustained effects:** Through this reform, EPA has increased the number of non-time-critical removals and combined and integrated site assessments, thereby reducing the cost and time required for site cleanup activities. EPA's data suggest that the agency has been able to sustain the reform and these positive effects.

Appendix I
Fourteen Reforms That EPA Considers as
Fundamental and as Having Achieved
Measurable Results

- **Contribution of other factors:** EPA reform managers identified no other factors as contributing to the results credited to this reform.
- **Regional implementation:** EPA's data and our prior reviews show that the regions are not consistently using these cleanup tools; however, EPA has not determined the reasons for this inconsistency, whether the reasons are valid, or whether the agency needs to improve the reform's implementation.
 - EPA's use of non-time-critical removals has been constrained, in part, by budgetary factors. Specifically, limits on the agency's removal budget and the higher funding priority given to emergency removals and time-critical removals have restricted EPA's use of non-time-critical removals. However, since 1996, the regions have been able to submit requests to a panel of program experts from all 10 regions and EPA headquarters for funding non-time-critical removals at Superfund sites that they could not accommodate within their removal budgets. For the past few years, all such removal requests have been funded.
 - Statutory factors have also constrained EPA's use of non-time-critical removals, limiting both the time and the money the agency can spend on them. The limits are generally 12 months and \$2 million per removal, although the regions may request exemptions from these limits. In 1996, we reported that two regions had performed very few such removals because these regions had conservatively interpreted the statutory requirements for exemption from the limits and, therefore, did not pursue removals or seek exemptions.² The regions decide whether and how many such removals to propose, and EPA headquarters does not track consistency among the regions or determine whether the regions are considering all possible sites for this reform.
 - EPA has not tried to assess how well the regions are implementing combined and integrated assessments or why the rate of implementation has varied so much among the regions. The agency leaves it up to the regions to decide how extensively to use the assessments. EPA reform managers offered several possible explanations for the differences among regions. First, the types of sites in the regions' workloads vary, and not all types would benefit from combined or integrated assessments. Second, the regions take different approaches to conducting site assessment and removal

²*Superfund: Non-Time-Critical Removals as a Tool for Faster and Less Costly Cleanups* (GAO/T-RCED-96-137, Apr. 17, 1996).

**Appendix I
Fourteen Reforms That EPA Considers as
Fundamental and as Having Achieved
Measurable Results**

assessment activities. Third, in some regions, the site assessment and removal programs are more integrated, making it easier to perform combined and integrated assessments. Finally, the percentages of sites assessed under state environmental programs through cooperative agreements with EPA vary from region to region.

- **Performance measurement:**
 - While EPA counts the number of non-time-critical removals initiated each year, it does not track the dollars and time saved as measures of this reform's progress. The EPA managers for the reform explained that the estimates of time and cost savings are based on professional judgment rather than data.
 - EPA does track the time and cost savings from combined site assessment activities to demonstrate progress toward this reform's goals.
 - The number of removals initiated and the number of integrated and combined site assessments performed do not directly measure EPA's progress toward or achievement of the reform's goals—expediting cleanups, enhancing states' roles, and addressing the worst threats first.
- **Views on reform's benefits/effectiveness:** Industry representatives gave this reform considerable credit for bringing more flexibility and cost-effectiveness into the remedy selection process. In particular, they point to EPA's use of its removal authority for accelerating cleanups.

**Views on Additional
Authority Needed**

- Both GAO, in its prior reviews, and EPA have recognized that the current statutory limits on the time and dollars the agency can spend on non-time-critical removals hinder the agency's ability to use this tool more widely for accelerating cleanups.
- In a previous review, we determined that raising the limits to at least 2 years and \$4 million would allow for greater use of this tool, although raising the limits to 3 years and \$5 million would provide the maximum flexibility.
- EPA previously asked the Congress to consider taking legislative action to raise the statutory limits on these removal actions.

**Appendix I
Fourteen Reforms That EPA Considers as
Fundamental and as Having Achieved
Measurable Results**

Encouraging Public Participation: (1) Community Advisory Groups and (2) Early and More Effective Community Involvement

To enhance community involvement in the cleanup process, EPA has

- since 1993, encouraged communities to form advisory groups, composed of citizens affected by hazardous waste sites, by providing administrative support and guidance;
- since 1988, awarded grants of up to \$50,000 to eligible communities affected by Superfund sites to enable them to acquire independent technical assistance to help them understand and comment on site-related information during the cleanup decision-making process; and
- since 1994, provided university educational and technical resources to help community groups understand the technical issues at Superfund sites not on the National Priorities List.

Table 14 shows EPA's performance goals and measures for this reform.

Table 14: Performance Goals and Measures for Promoting Community Involvement

Reform	Goals	EPA's performance measures	
		Outcomes	Outputs
Encourage and assist community working groups at some sites, award grants to some communities near Superfund sites to hire technical advisers, and provide educational and technical resources to some communities near Superfund sites not on the National Priorities List.	Enhance public participation in the site decision-making process	Percentage of surveyed community members at seven Superfund sites who believe that EPA is effectively involving them in the Superfund process: 47 percent	Number of community advisory groups formed: 53 through fiscal year 1999 Number of communities receiving technical assistance grants: 219 Number of communities receiving assistance through EPA's Technical Outreach Services for Communities program: 110

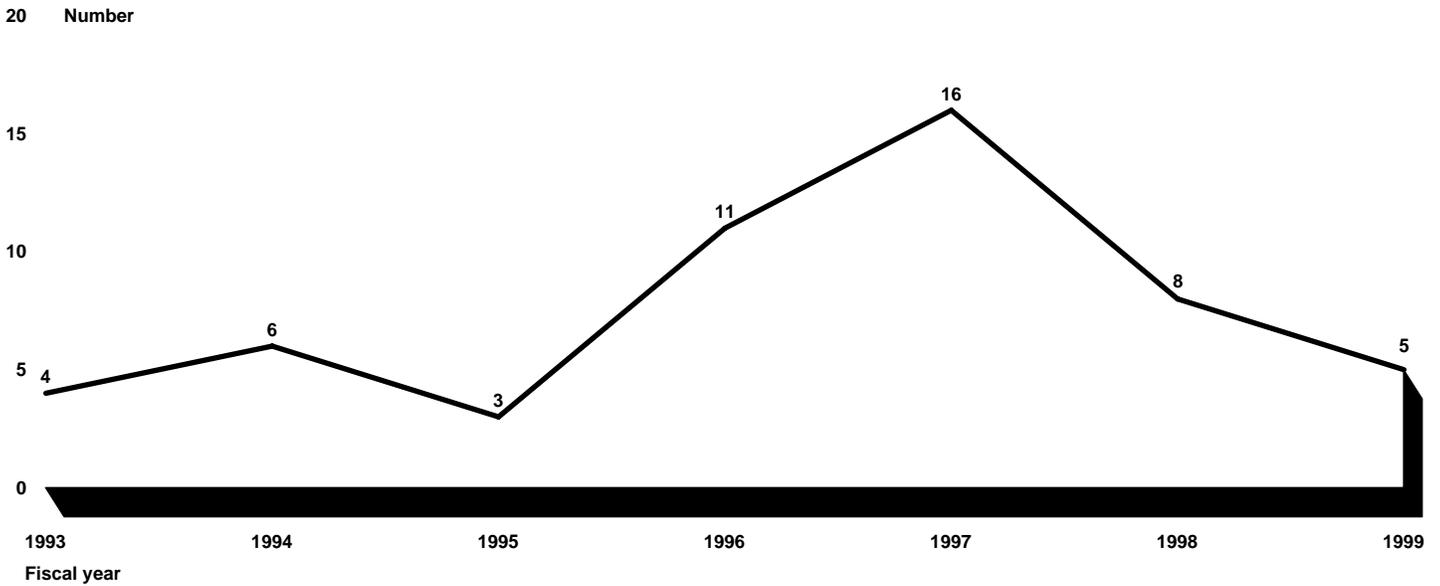
Source: GAO's classification and presentation of information from EPA.

Results of Reform Identified by EPA

Figures 22, 23, and 24 show EPA's efforts to enhance community involvement through the use of three initiatives: promoting community advisory groups, providing technical assistance grants, and conducting technical outreach activities.

**Appendix I
Fourteen Reforms That EPA Considers as
Fundamental and as Having Achieved
Measurable Results**

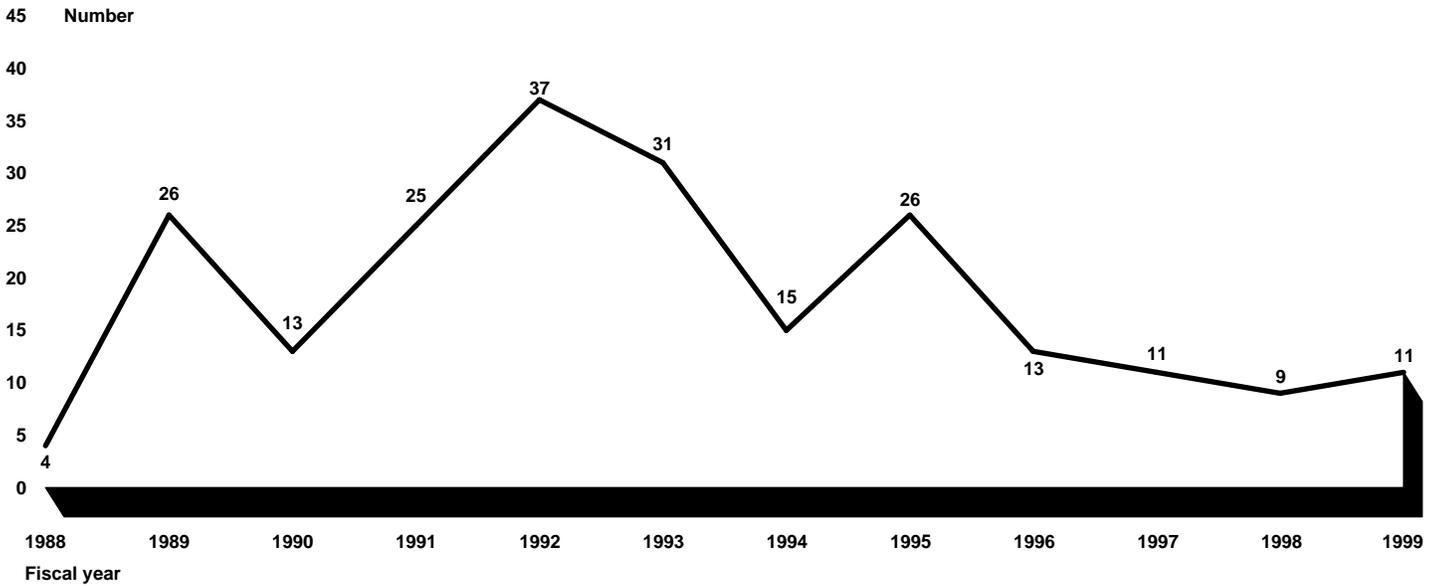
Figure 22: Community Advisory Groups Established, Through the End of Fiscal Year 1999



Source: GAO's presentation of data from EPA.

**Appendix I
Fourteen Reforms That EPA Considers as
Fundamental and as Having Achieved
Measurable Results**

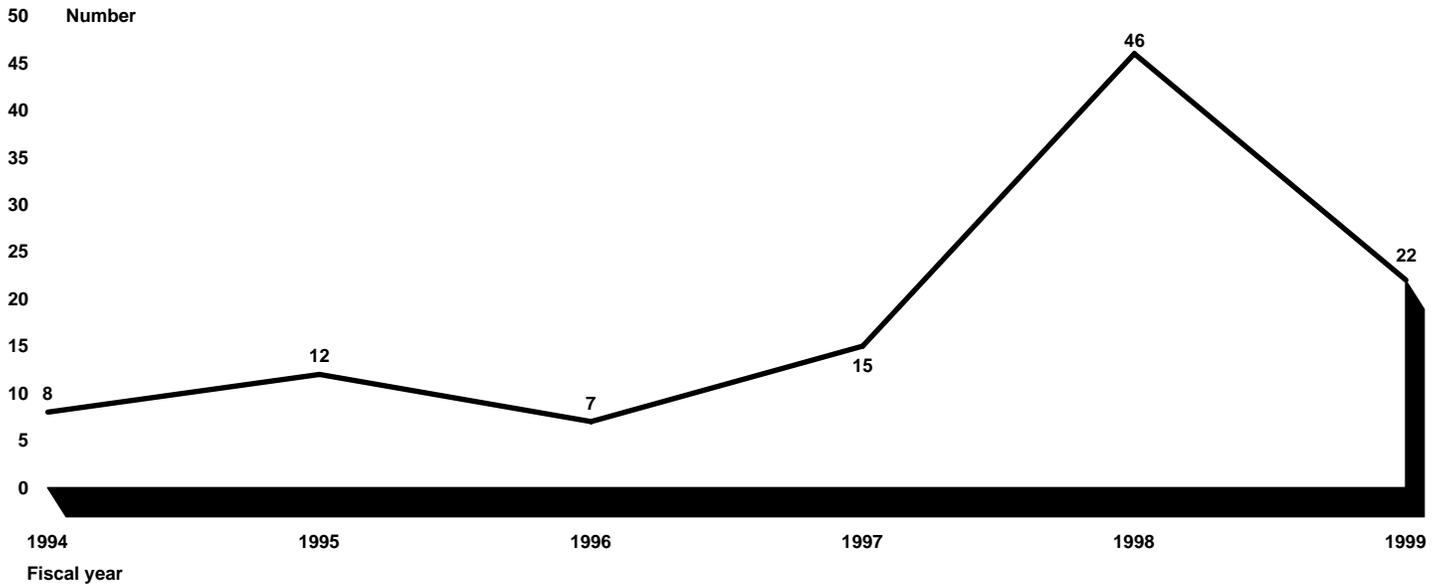
Figure 23: Technical Assistance Grants Awarded, Fiscal Years 1988-99



Source: GAO's presentation of data from EPA.

**Appendix I
Fourteen Reforms That EPA Considers as
Fundamental and as Having Achieved
Measurable Results**

Figure 24: Technical Outreach Projects Initiated, Fiscal Years 1994-99

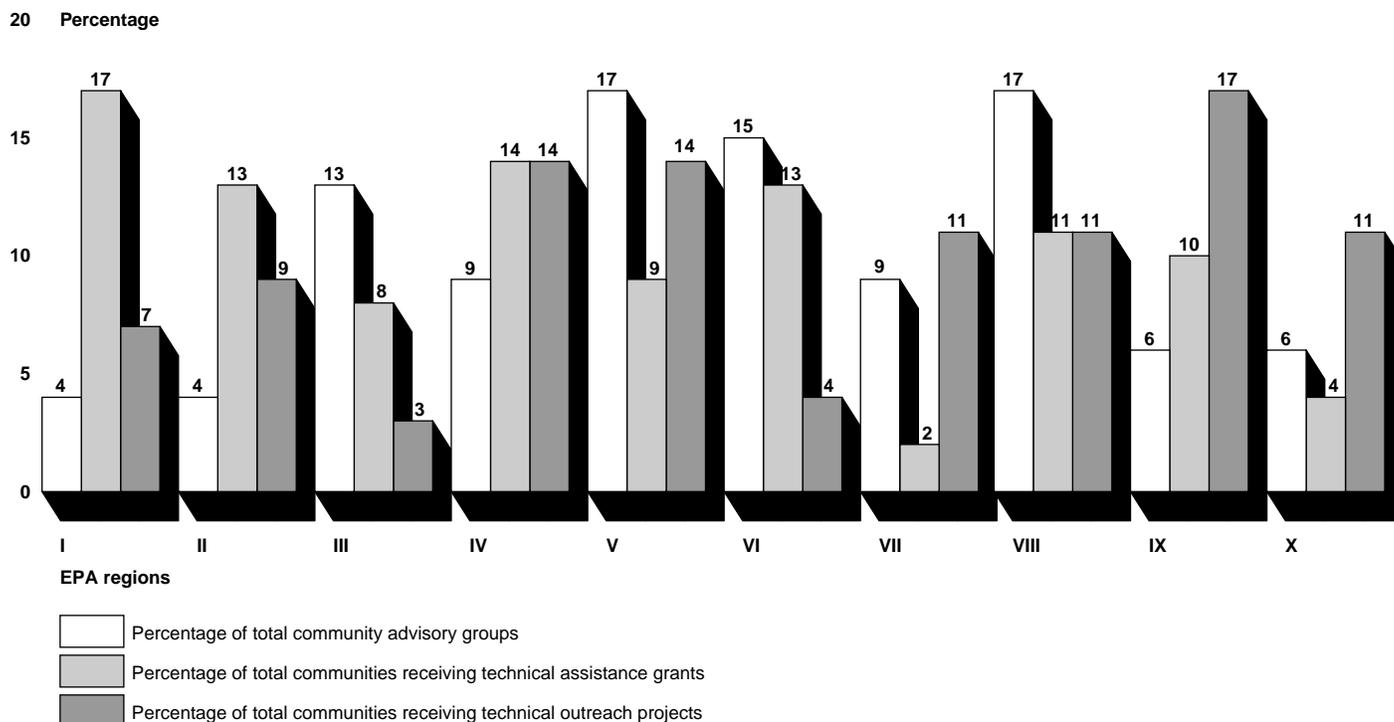


Source: GAO's presentation of data from EPA.

As of November 1999, EPA had helped form 53 community advisory groups in communities affected by Superfund sites. Forty-seven of these groups were active at that time, and the other six, having completed their work, were no longer active. Region V had the most sites with these groups (nine), while Regions I and II had the fewest (two each) (see fig. 25).

**Appendix I
Fourteen Reforms That EPA Considers as
Fundamental and as Having Achieved
Measurable Results**

Figure 25: Each Region's Percentage of National Community Involvement Activities, Through the End of Fiscal Year 1999



Source: GAO's presentation of data from EPA.

In addition, through the end of fiscal year 1999, EPA had awarded 219 technical assistance grants totaling almost \$16 million to community groups affected by Superfund sites (only one grant is available per site). Region IV had the most grant recipients (30), while Region VII had the fewest (4). Finally, through the end of fiscal year 1999, EPA's outreach program had provided technical assistance to 110 communities affected by hazardous waste sites. Region IX provided assistance to the most communities (19), while Region III provided assistance to the fewest (3).

GAO's and Stakeholders' Observations

- **Sustained effects:** The annual number of (1) new community advisory groups increased from fiscal year 1995 through fiscal year 1997 but fell in fiscal years 1998 and 1999, (2) technical assistance grants awarded peaked in fiscal year 1992 at 37 but has decreased since then, and (3) new technical outreach projects increased significantly from fiscal year 1996 through fiscal year 1998 but fell by more than 50 percent in fiscal

Appendix I
Fourteen Reforms That EPA Considers as
Fundamental and as Having Achieved
Measurable Results

year 1999. These declines may indicate that EPA is not sustaining its implementation of these reforms.

- **Contribution of other factors:** According to EPA reform managers, a number of factors affect the use of community involvement programs, including (1) communities' level of interest in the programs; (2) the extent to which EPA has already met communities' needs and interests; (3) the extent to which activities that communities would become involved in, such as remedial investigations and studies, have already been completed; and (4) the resources available for such programs.
- **Regional implementation:** EPA's data show variations among the regions in their implementation of these reforms that do not correspond with differences in the sizes of their Superfund workloads. According to EPA reform managers, one possible explanation for these variations is that numerous factors can influence whether communities become involved in the cleanup process, and these factors may vary considerably among the regions. EPA reform managers said that although EPA can promote community involvement, it cannot control a community's decision to participate in its activities.
- **Performance measurement: overall community involvement program:**
 - In fiscal year 1999, EPA completed the first phase of an ongoing effort to measure the effects of its overall community involvement program. The review was conducted at seven sites in four EPA regions and consisted of written surveys, telephone surveys, and focus groups of local community members who had shown an interest in their sites. While EPA acknowledged that the results of the review are not statistically significant, it found that (1) citizens perceive less risk after receiving an EPA fact sheet or attending a public meeting about a site; (2) communities that are involved are more likely to accept EPA's decisions and actions, ultimately making cleanups easier, faster, and less costly; and (3) nationally, only about half of those surveyed believe that EPA is effective in involving their communities in the Superfund process. From this review, the agency concluded that improvements in its community involvement efforts are needed.
 - EPA is currently conducting the second phase of its performance measurement effort, reviewing the community involvement program at 23 Superfund sites in six EPA regions. The agency expects to present the results of these reviews in September 2000 as part of its strategic plan.
- **Performance measurement: community advisory groups:**
 - EPA acknowledges that the growing number of community advisory groups does not demonstrate that these groups are achieving their

**Appendix I
Fourteen Reforms That EPA Considers as
Fundamental and as Having Achieved
Measurable Results**

- goals, but the agency considers this increase an indication that communities find the advisory groups useful.
- In fiscal year 1998, an informal review of the effectiveness of six community advisory groups at sites in Region V found that these groups had (1) provided an effective forum for interested parties to discuss their views, (2) increased residents' knowledge of issues at sites, (3) often increased the communities' voice in decisions about the sites, and (4) improved the relationships between EPA and the communities.
 - Performance measurement: technical assistance:
 - EPA's Office of the Inspector General completed a review of the technical assistance grants program in fiscal year 1996 and concluded that the 151 grants awarded through the end of fiscal year 1994 provided support for a relatively small fraction of the 1,250 Superfund sites where community groups were eligible to receive grants.
 - The Office of the Inspector General identified possible explanations for the limited grant activity, including the following: (1) EPA had not assessed the number of communities that wanted grants, (2) EPA had not effectively publicized the program, and (3) the regions had placed different levels of emphasis on implementing and promoting the grant program.
 - The number of communities that had received technical assistance grants (219) through the end of fiscal year 1999 was small compared with the number of Superfund sites that were on the National Priorities List (1,213). However, EPA's technical assistance program manager told us that not all communities need technical assistance grants, especially those whose needs for technical information have been met by EPA's other community involvement activities.
 - Since the Office of the Inspector General completed its review, EPA has publicized its technical assistance program on the Internet and is developing new regional guidance intended to ensure consistent regional implementation of the program.
 - Views on reform's benefits/effectiveness:
 - According to an industry representative and a state representative, special interests often dominate community advisory groups; therefore, the groups do not necessarily represent the needs of the community.
 - According to one industry representative, communities continue to find grant requirements overly burdensome. As a result, some communities avoid the grant process in favor of seeking technical assistance from responsible parties. In August 1999, EPA issued a

**Appendix I
Fourteen Reforms That EPA Considers as
Fundamental and as Having Achieved
Measurable Results**

proposed rule to further streamline its grant application and administrative requirements.

- An industry representative also pointed out that communities often use technical assistance grants to obtain assistance from technically unqualified sources; therefore, EPA should enhance the qualifications for those providing assistance. EPA's proposed rule on streamlining the grant process includes a new requirement that technical advisers have experience communicating problems and issues associated with hazardous or toxic waste, redevelopment, relocation, and health to the public.

Views on Additional Authority Needed

EPA reform managers said that no additional legal authority is needed to pursue the reform.

Brownfield Assessment Pilot Projects

In November 1993, EPA began providing selected states, tribes, or municipalities with up to \$200,000 each under cooperative agreements to assess the extent and nature of any contamination at abandoned, idled, or underutilized properties (brownfields) and plan cleanup activities. EPA included this ongoing initiative in its administrative reforms announced in 1995. Table 15 shows EPA's performance goals and measures for this reform.

Table 15: Performance Goals and Measures for Funding Brownfield Assessment Pilot Projects

Reform	Goals	EPA's performance measures	
		Outcomes	Outputs
Provide funds to states, tribes, and municipalities to assess contamination at brownfield properties	Demonstrate models of successful brownfield redevelopments that states, tribes, and localities can use to address remaining brownfields Through the reuse of brownfields, encourage new jobs and economic growth	The number of properties assessed, cleaned up, and redeveloped and the number of jobs and amount of private funding leveraged (data problematic)	Number of demonstration pilot projects funded: 305 through October 1999 (GPRA measure)

Source: GAO's classification and presentation of information from EPA.

**Appendix I
Fourteen Reforms That EPA Considers as
Fundamental and as Having Achieved
Measurable Results**

**Results of Reform Identified
by EPA**

As of October 1999, EPA had funded 305 pilot projects. The recipients voluntarily report data on the results achieved with this funding, and EPA collects the information in its brownfield management information system. Using this information, EPA reported, among other things, that

- 3,255 properties have been targeted for assessment, cleanup, or redevelopment activities;
- 601 assessed properties do not require any cleanup before redevelopment;
- 120 properties have cleanup actions completed;
- 169 properties have redevelopment completed;
- about 1,617 cleanup jobs and \$140 million in cleanup funds have been leveraged at pilot properties; and
- about 4,267 redevelopment jobs and about \$1.7 billion for redevelopment activities have been leveraged.

The EPA managers for this reform also said that the pilot projects are helping to shift incentives for development away from greenfields—undeveloped sites in rural and suburban areas—and toward brownfields.

**GAO's and Stakeholders'
Observations**

- Sustained effects: EPA awarded 45 assessment pilot projects in fiscal year 1997, 105 in fiscal year 1998, and 79 in fiscal year 1999.
- Contribution of other factors:
 - Contributions from other federal agencies and states have also helped to achieve the results that EPA attributes to its administrative reform, and EPA reform managers acknowledged this.
 - In April 1999,³ we outlined funds that the Economic Development Administration within the Department of Commerce and the Department of Housing and Urban Development were making available to communities for cleaning up and redeveloping brownfields.
 - In April 1997, we reported that states were addressing more and more brownfield properties through their voluntary cleanup programs.⁴ Under these programs, states provide incentives, such as

³*Environmental Protection: Agencies Have Made Progress in Implementing the Federal Brownfield Partnership Initiative* (GAO/RCED-99-86, Apr. 9, 1999).

⁴*Superfund: State Voluntary Programs Provide Incentives to Encourage Cleanups* (GAO/RCED-97-66, Apr. 9, 1997).

**Appendix I
Fourteen Reforms That EPA Considers as
Fundamental and as Having Achieved
Measurable Results**

- relief from state liability laws, for parties so that they will voluntarily clean up and redevelop brownfields.
- Isolating the extent to which EPA's assessment funds contributed to the cleanup and redevelopment of the brownfield properties in the pilot projects is not possible.
 - Regional implementation: Pilot recipients are chosen on a competitive basis by a panel consisting of EPA regional and headquarters staff and other federal agency representatives; individual EPA regions do not decide how many pilot projects to award. Therefore, we did not assess the level of regional implementation of this reform.
 - Performance measurement:
 - EPA's Inspector General, in a March 1998 report,⁵ credited this initiative with helping to remove barriers to redevelopment and leveraging millions of dollars in private funding for redevelopment. However, the Inspector General noted that at some of the pilot projects reviewed, EPA funds had relatively little impact on redevelopment.
 - While EPA's assessment funds played some role in achieving the results, EPA's data are problematic. Recipients may voluntarily provide EPA with an estimate of the number of jobs and additional funding leveraged at properties assessed with grant funds. But the estimates are not comprehensive because EPA cannot require the recipients to submit such data, and EPA cannot verify the consistency and accuracy of these estimates. EPA recently standardized the measures for which recipients report data. As a result, the data reported by recipients may become more consistent.
 - Views on reform's benefits/effectiveness: An industry representative and cleanup officials from two states spoke positively of EPA's achievements under this initiative.

**Views on Additional
Authority Needed**

- EPA supports legislation that would provide limited liability protection for prospective purchasers, contiguous property owners, and innocent landowners (those not responsible for or aware of contamination on a property) as a means to remove liability barriers to the redevelopment of brownfields. Cleanup officials in two states and two industry representatives told us they also want these liability protections established in law.

⁵*Brownfields: Potential for Urban Revitalization*, EPA, Office of the Inspector General (E1SHF8-11-0005-8100091, Mar. 27, 1998).

**Appendix I
Fourteen Reforms That EPA Considers as
Fundamental and as Having Achieved
Measurable Results**

-
- The EPA manager for this reform also said the agency supports legislation that would provide grants to local governments to help them fund loans for cleaning up brownfield sites.

Characteristics of 48 Reforms That EPA Did Not Classify as Both Fundamental and Measurable

In addition to the 14 Superfund administrative reforms discussed in appendix I, EPA has initiated 48 other reforms. EPA reform managers classified 6 of the 48 reforms as fundamental, meaning that they have fundamentally changed the Superfund program. However, the agency has not been able to establish performance measures for these reforms. The reform managers did not classify the remaining 42 reforms as fundamental, although the agency has established performance measures for some of these reforms.

Six Reforms That EPA Has Classified as Fundamental but Not Measurable

While reporting that they had established performance measures for 14 of the Superfund administrative reforms that they classified as fundamental (see app. I), EPA reform managers said they were unable to establish such measures for 6 other reforms that they also classified as fundamental. These included, among others, guidance to streamline the selection of cleanup remedies and procedures for deleting cleaned portions of sites from the National Priorities List to encourage their reuse. Table 16 lists the six reforms and provides, for each, (1) a brief description, (2) the goals EPA expected to achieve, (3) the types of outputs (such as specific products or activities), (4) the effects that EPA believes cannot be measured at all or cannot easily be measured, and (5) our observations, where possible, based on our past work.

**Appendix II
 Characteristics of 48 Reforms That EPA Did
 Not Classify as Both Fundamental and
 Measurable**

Table 16: Six Fundamental Reforms That Lack Performance Measures

Reform	Description of reform	Reform's goals	Results and effects of reform identified by EPA		GAO's observations
			Outputs (unverified)	Nonmeasurable effects	
Refine the Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS)	<p>Archive sites in which EPA has no further interest so that stakeholders, such as property owners and purchasers, can make better decisions about properties that were once included in CERCLIS</p> <p>Scope: Programwide</p> <p>Status: Fully implemented/ongoing</p>	<p>Remove the stigma associated with inclusion in EPA's database of potential Superfund sites</p> <p>Restore formerly contaminated sites to beneficial use</p>	<p>Fact sheet, "Archival of CERCLIS Sites"</p> <p>Inventory of archived sites, organized by state and posted on the Internet</p> <p>Number of archived sites: 31,784</p>	<p>Reduction in perceived potential environmental liability at archived sites</p>	<p>EPA stated that "limited resources prevent the agency from gathering property transaction data to quantify deals facilitated by the removal of sites from CERCLIS."</p> <p>GAO's report <i>Hazardous Waste: Unaddressed Risks at Many Potential Superfund Sites</i> (GAO/RCED-99-8, Nov. 30, 1998) recommended that EPA correct errors in the CERCLIS database. The database included sites that did not meet the Superfund program's technical criteria, had already been cleaned up, or were being cleaned up. In response, EPA revised its procedures to ensure more accurate CERCLIS entries.</p>

Continued

**Appendix II
Characteristics of 48 Reforms That EPA Did
Not Classify as Both Fundamental and
Measurable**

Reform	Description of reform	Reform's goals	Results and effects of reform identified by EPA		GAO's observations
			Outputs (unverified)	Nonmeasurable effects	
Develop guidance for remedy selection	Produce guidance documents on soil screening, land use, and presumptive ("standardized") remedies Scope: Programwide Status: Fully implemented/ongoing	Expedite cleanups Reduce cleanup costs Promote consistency in remedy selection at sites nationwide	Guidance documents, including, among others, <i>Soil Screening Guidance: Users' Guide, Land Use in the CERCLA Remedy Selection Process</i> ; and <i>Presumptive Remedies: Policy and Procedures</i>	Potential time and cost savings More realistic assumptions about land use Clearer, more consistent records of decision Better understanding among stakeholders of EPA's remedy selection process and rationale for decisions	EPA is conducting a review of the use of presumptive remedies, to be completed in fiscal year 2000.
Delete clean parcels from the National Priorities List	Delete portions of sites from the National Priorities List that have been cleaned up and are available for productive use Scope: Programwide Status: Fully implemented/ongoing	Restore formerly contaminated sites to beneficial use Allay concerns of potential investors or developers who may be reluctant to undertake economic activity at these properties	Guidance documents Number of sites with deleted clean parcels: 16 Number of notices of intent to delete clean parcels from the National Priorities List: 2	More favorable public perception of sites with deleted portions Greater potential for redeveloping partially deleted sites Economic and other benefits for the community	EPA believes that the benefits of this reform could potentially be measured by the increase in value of parcels that have been deleted and of surrounding properties; however, EPA has not used this measure because it lacks data needed for meaningful analysis.

Continued from Previous Page

**Appendix II
 Characteristics of 48 Reforms That EPA Did
 Not Classify as Both Fundamental and
 Measurable**

Reform	Description of reform	Reform's goals	Results and effects of reform identified by EPA		GAO's observations
			Outputs (unverified)	Nonmeasurable effects	
Promote risk-based priority-setting for sites on the National Priorities List	<p>Establish the National Risk-Based Priority Panel, comprising program experts from all 10 regions and headquarters, to evaluate proposed cleanup actions on the basis of (1) risks to humans and the ecology; (2) the stability and characteristics of contaminants; and (3) economic, social, and programmatic considerations</p> <p>Fund cleanup projects, apart from emergencies and the most critical removal actions, according to the priorities established by the panel</p> <p>Scope: Programwide</p> <p>Status: Fully implemented/ongoing</p>	Better protect human health and the environment	<p>Panel established</p> <p>Number of projects reviewed in fiscal year 1997: Over 50</p> <p>Number of projects funded in fiscal year 1997: 35, valued at \$185 million</p> <p>Number of projects funded in fiscal year 1999: 25, valued at over \$100 million</p> <p>Value of projects ranked by panel between August 1995 and March 1999: Over \$1 billion</p>	Allocation of funding for response actions according to the highest priorities first	<p>According to our report <i>Superfund: Progress Made by EPA and Other Federal Agencies to Resolve Program Management Issues</i> (GAO/RCED-99-111, Apr. 29, 1999), EPA uses relative risk to set cleanup priorities for sites on the National Priorities List. However, EPA does not necessarily place the riskiest sites on the list. Many states are now addressing sites whose risks are severe enough to qualify them for listing. EPA is not including these sites in its priority-setting because it believes that it does not have enough information on cleanup activities at the sites. In response to our recommendation that its regions work with the states to obtain this information, EPA has initiated discussions with several states on sharing information about cleanup activities at the riskiest sites.</p>

Continued from Previous Page

**Appendix II
Characteristics of 48 Reforms That EPA Did
Not Classify as Both Fundamental and
Measurable**

Reform	Description of reform	Reform's goals	Results and effects of reform identified by EPA		GAO's observations
			Outputs (unverified)	Nonmeasurable effects	
Reduce oversight for cooperative potentially responsible parties (improve oversight administration)	Reduce oversight of potentially responsible parties that consistently perform high-quality work	Reduce litigation and associated costs	Policy directives and memorandums	Greater incentives for other potentially responsible parties to cooperate and settle	EPA believes this reform creates opportunities for more efficient oversight, but "data collection is time-consuming and difficult, and the results are not definitive."
	Scope: Programwide Status: Fully implemented/ongoing	Expedite cleanups Reduce cleanup costs for both EPA and responsible parties	Number of sites where the reform is being applied: 232 Number of sites where EPA (1) offered to discuss oversight expectations and upcoming activities with potentially responsible parties: 167; and (2) issued an oversight bill as required by the settlement agreement: 196 (both actions completed at 161 of these sites) Cost savings at selected sites	More cooperative, less adversarial atmosphere between EPA and potentially responsible parties performing cleanup work	
Improve communication with stakeholders	Encourage the use of electronic tools, such as the Internet, multimedia computers, and other electronic means	Increase communication among all Superfund stakeholders and improve their access to Superfund information	Creation of a Superfund Web site		None
	Scope: Programwide Status: Fully implemented/ongoing	Enhance public participation	Development of a home page for each EPA region Number of visits to EPA's Web sites: Data not provided		

Continued from Previous Page

Note: Unless otherwise noted, all data presented in this table are current as of the end of fiscal year 1999.

Source: GAO's classification and presentation of information from EPA.

Remaining Reforms That EPA Has Not Classified as Fundamental

EPA has not characterized the remaining 42 reforms¹ as fundamental because they (1) have not resulted in a new way of doing business for the Superfund program; (2) are not intended for programwide implementation and have not been integrated into the base program's operations; and/or (3) are not being tracked as a measure for key agency or program goals:

- 14 were designed to test new concepts at selected sites, such as options for expediting settlements with responsible parties and for encouraging community involvement in enforcement activities;
- 9 were intended to produce guidance that would improve consistency in remedies, risk assessments, and other aspects of the program; and
- 19 were intended to improve the overall efficiency and effectiveness of the program's administration by, for example, establishing an ombudsman in each region to interact with the public on Superfund issues and allowing responsible parties to participate in risk assessments.

The 42 reforms cover a wide range of Superfund issues, including the risk assessments that govern cleanups, the cleanup process itself, EPA's enforcement activities, and stakeholders' involvement in cleanup decisions. The 42 reforms also cover a diverse range of goals, such as

- increasing fairness when enforcing the program's liability laws while also reducing litigation and its associated costs;
- expediting cleanups and reducing cleanup costs;
- better protecting human health and the environment;
- promoting consistency in the remedies selected and in the risk assessments conducted at sites nationwide;
- encouraging stakeholders' involvement in the risk assessment process;
- enhancing communities', states', and tribes' participation in cleanup decisions;
- preventing minority and low-income populations from bearing the burden of pollution;
- restoring formerly contaminated sites to beneficial use; and

¹One of the reforms in the group of 14—addressing options for private party allocations of cleanup liability—and 1 of the reforms in the group of 9—developing guidance on how to address uncontaminated parcels on or adjacent to Superfund sites—were included in the first round of reforms but were subsequently replaced or incorporated into the later two rounds.

- improving the overall efficiency and effectiveness of the Superfund program.

Even though EPA did not designate these reforms as fundamental, some of them address issues that have been central to the Superfund reauthorization debate. Our prior observations on three of these reforms, which we believe address significant Superfund issues, follow.

Improve Contracts Management

As part of its administrative reforms, EPA focussed on improving contractors' performance by implementing (1) the Superfund Long-Term Contracting Strategy, which transferred the agency's responsibilities for contract management from headquarters to the regions, and (2) most recently, the Contracts 2000 Strategy, an effort to develop a set of contracts that best meets the program's needs while using best procurement practices. According to our report *Superfund: Progress Made by EPA and Other Federal Agencies to Resolve Program Management Issues* (GAO/RCED-99-111, Apr. 29, 1999), at the time of the report, audits of Superfund contracts—EPA's primary tool for evaluating the adequacy of contractors' policies, procedures, controls, and performance—were being conducted more expeditiously than in 1997. However, we found significant differences between EPA's estimates of what cleanup work should cost and the final contract prices for that work, indicating potential problems with the quality of the agency's estimates. These estimates are important because they serve as the basis for negotiating contract prices. While EPA has established a workgroup to assess its cost-estimating procedures and identify solutions to any problems found, the agency has undertaken similar corrective measures in the past and has had difficulty fully implementing and sustaining them. EPA's new Superfund contract management information system collects cost data, but these data may not be sufficiently specific or timely. Furthermore, we found that EPA was continuing to pay too high a percentage of funds to contractors for program support costs, in part because it was still retaining more contractors than it needed and paying their overhead costs. Finally, EPA could not provide us with documentation describing the "Contracts 2000" team's (1) overall strategy for determining what options it would recommend that the agency adopt to address contracting issues and (2) time frames for implementing them. We recommended that EPA (1) develop procedures to ensure that corrective actions will improve cost-estimates, (2) review whether the regions are consistently implementing corrective actions, (3) identify cost-effective methods of providing estimators with the data needed for more accurate estimates, (4) review the number of contracts needed, and (5)

ensure that the Contracts 2000 initiative results in a comprehensive strategy to improve contract management. EPA agreed with these recommendations and plans to take a number of actions to implement them. Among other such actions, EPA plans to (1) develop a corrective action strategy and milestones for preparing independent government cost estimates, (2) review the regions' implementation of these corrective actions and the overall quality of their cost estimates, and (3) continue to work with the regions to organize information useful in preparing future cost estimates. In addition, EPA has taken a variety of steps to ensure that the Superfund program has the appropriate contracting capacity. In July 1999, the agency issued a Contracts 2000 implementation framework documenting roles and responsibilities for reviewing and approving the regions' implementation plans and defining the plans' requirements.

Improve the Effectiveness of Cost Recovery

To better recover its costs, EPA revised (1) its systems for tracking cost recovery data and assigning priorities to cost recovery work and (2) its methodology for calculating indirect costs—the administrative costs of operating the program—to increase the percentage of indirect costs that are recovered. However, according to our report *Superfund: Progress Made by EPA and Other Federal Agencies to Resolve Program Management Issues* (GAO/RCED-99-111, Apr. 29, 1999), EPA has lost the opportunity to recover about \$2 billion in indirect costs from responsible parties because the methodology it used to calculate these costs excluded a large portion of the total. EPA has developed a new methodology that more accurately accounts for its administrative costs. Cost recovery program managers estimated that using the new methodology could increase recoveries in the cases remaining to be settled by about \$629 million. As of the date of the report, the cost recovery program had not yet implemented this new methodology because it was awaiting approval from EPA; the Department of Justice, which litigates cost recovery cases; and an independent accounting firm hired to review the methodology. Subsequently, the independent accounting firm and GAO approved the methodology. However, until EPA uses the new methodology, it will continue to lose the opportunity to recover these funds. Furthermore, EPA does not have a cost recovery performance measure that compares, for each year, the amount of costs it recovers with the amount of costs it had the potential to recover. Therefore, the agency cannot determine how well it is performing its cost recovery activities. EPA notes that it cannot control some factors that influence the amount of costs it can recover, such as the percentage of cleanups with financially viable responsible parties. We recommended that

EPA apply the new indirect cost-accounting methodology as soon as it was approved. EPA agreed to do so.

Support Voluntary Cleanup Programs

Many states have created voluntary cleanup programs, which rely on incentives rather than enforcement orders to accomplish cleanups. EPA is working with states and tribes to promote these programs, including providing financial assistance to support state voluntary cleanup program infrastructures and to promote cooperation between states, tribes, and regions. Our report *Superfund: State Voluntary Programs Provide Incentives to Encourage Cleanups* (GAO/RCED-97-66, Apr. 9, 1997) found that EPA's authority under Superfund to ensure that cleanups are protective of human health and the environment and the federal law's liability provisions can deter participation in voluntary cleanup programs because potential volunteers fear they could face expensive and indefinite cleanup liability. Therefore, states and responsible parties would like to enter into an agreement with EPA that would limit the federal government's future interests at sites where voluntary cleanups have been completed. EPA has been working with states to develop final guidance for negotiating agreements between EPA and the states. Under these agreements, EPA would assure volunteers that, except in limited circumstances, it generally would not plan to take further action at sites in voluntary cleanup programs that meet the agency's criteria for ensuring effective and protective cleanups. In the meantime, EPA has issued an interim memorandum outlining six criteria for voluntary programs that its regions can use to enter into agreements with states. These criteria, while flexible, are very general and do not clearly establish EPA's basis for determining whether a voluntary program will qualify for an agreement in the future. We recommended that EPA work with states to more clearly define the criteria that state voluntary cleanup programs should meet to obtain an agreement limiting EPA's involvement at sites, particularly in the areas of monitoring after cleanup, acceptable oversight practices, and public participation. EPA agreed and drafted guidance that met our recommendations. However, after many discussions with various stakeholders, EPA concluded that there was no consensus on critical aspects of the guidance. The agency decided, instead, that its 1996 guidance to the regions was appropriate for future negotiations involving state voluntary cleanup programs.

Table 17 lists the 42 reforms that EPA officials did not characterize as having fundamentally changed the Superfund program. The table provides (1) a brief description of each reform; (2) the goals EPA expected to achieve through the reform; (3) the types of outputs (such as specific

Appendix II
Characteristics of 48 Reforms That EPA Did
Not Classify as Both Fundamental and
Measurable

products or activities) or outcomes (measurable results) that EPA uses to measure the success of the reform; (4) where appropriate, the data measuring the effects of the reform; and (5) any effects of the reform that EPA believes cannot be measured or cannot easily be measured. Because of the large number of these reforms, we did not attempt to verify their effects as identified by EPA.

**Appendix II
 Characteristics of 48 Reforms That EPA Did
 Not Classify as Both Fundamental and
 Measurable**

Table 17: List of 42 Reforms That EPA Did Not Specifically Identify as Having Fundamentally Changed the Superfund Program

Reform	Description of reform	Reform's goals	Results and effects of reform identified by EPA		
			Outputs (unverified) ^a	Outcomes (unverified)	Nonmeasurable effects
Pilot projects (13)					
Evaluate mixed funding policy	Evaluate options for jointly funding cleanup projects with potentially responsible parties, quantify the cost implications of these options, and pilot-test demonstration projects designed to identify opportunities for streamlining the joint-funding decision-making process Scope: Pilots Status: Pilots completed/ results incorporated into program	Increase program's fairness Reduce litigation and associated costs	Number of settlements reached: 6	None identified	Settlement facilitated Number of settlements potentially increased Equity potentially improved
Pilot early searches for potentially responsible parties	Pilot-test several procedures to (1) improve the quality and timeliness of searches to identify potentially responsible parties, (2) make the information obtained more accessible, and (3) identify a larger universe of potentially responsible parties earlier in the process Scope: Pilots Status: Pilots completed/ results incorporated into program	Increase program's fairness Reduce litigation and associated costs Expedite settlements	Number of pilot sites: 15 in 10 regions Number of sites where potential <i>de minimis</i> parties (contributors of small waste volumes) were notified within 12 months of starting the search: 0 Number of sites where other parties were notified within 18 months of starting the search: 5 Number of additional parties identified early in the search process: 150 at one pilot site	None identified	"Lessons learned" applied programwide

Continued

**Appendix II
 Characteristics of 48 Reforms That EPA Did
 Not Classify as Both Fundamental and
 Measurable**

Reform	Description of reform	Reform's goals	Results and effects of reform identified by EPA		
			Outputs (unverified) ^a	Outcomes (unverified)	Nonmeasurable effects
Expedite settlements	<p>Pilot-test revised settlement procedures to determine the feasibility of (1) achieving early settlements with <i>de minimis</i> parties (contributors of small waste volumes), (2) identifying early any issues relating to parties' ability to pay for cleanup, and (3) giving involved parties an opportunity to designate others as potentially responsible parties</p> <p>Scope: Pilots</p> <p>Status: Pilots completed/ results incorporated into program</p>	<p>Increase program's fairness</p> <p>Reduce litigation and associated costs</p> <p>Expedite settlements</p>	<p>Number of pilot sites: 18 in 8 regions</p> <p>Number of pilot sites where EPA achieved early <i>de minimis</i> settlements: 8</p> <p>Number of pilot sites where EPA reached early ability-to-pay settlements: 5</p> <p>Number of <i>de minimis</i> parties with which EPA settled at pilot sites: 1,397 through the end of fiscal year 1998</p> <p>Amount recovered by EPA in expedited <i>de minimis</i> and ability-to-pay piloted settlements: \$22.7 million</p>	None identified	"Lessons learned" applied programwide

Continued from Previous Page

**Appendix II
 Characteristics of 48 Reforms That EPA Did
 Not Classify as Both Fundamental and
 Measurable**

Reform	Description of reform	Reform's goals	Results and effects of reform identified by EPA		
			Outputs (unverified) ^a	Outcomes (unverified)	Nonmeasurable effects
Allocate costs according to parties' liability	<p>At selected sites, test a cost-allocation approach under which potentially responsible parties may settle their liability on the basis of their share of the cleanup costs using (1) a neutral party, known as an allocator, selected by the parties to allocate the costs, and (2) a nonbinding out-of-court allocation process</p> <p>Scope: Pilots</p> <p>Status: Pilots ongoing/ results incorporated into program</p>	<p>Increase program's fairness</p> <p>Reduce litigation and associated costs</p>	<p>Number of pilot sites: 9</p> <p>Number of pilot sites where EPA issued allocation reports: 6</p> <p>Number of pilot sites where EPA reached settlements: 7</p> <p>Number of pilot sites where EPA settled before allocation reports were issued: 7</p> <p>Average time spent to complete the allocation process at pilot sites with issued reports: 20 months</p> <p>Examples of legal costs at pilot sites: \$48,000 per party; \$421,000 per site for EPA and Department of Justice staff time; \$193,000 per site for the allocator</p>	<p>Percentage of parties at pilot sites indicating that transaction costs were lower than traditional contribution litigation costs: 75 percent</p>	<p>"Lessons learned" applied programwide</p>

Continued from Previous Page

**Appendix II
Characteristics of 48 Reforms That EPA Did
Not Classify as Both Fundamental and
Measurable**

Reform	Description of reform	Reform's goals	Results and effects of reform identified by EPA		
			Outputs (unverified) ^a	Outcomes (unverified)	Nonmeasurable effects
Encourage community involvement in enforcement	<p>Test innovative approaches for community involvement in technical settlement issues, including (1) increasing public involvement in removal actions being implemented by potentially responsible parties and (2) facilitating communication between the potentially responsible parties and local citizens to develop a consensus on a site's future land use</p> <p>Scope: Pilots</p> <p>Status: Pilots ongoing/ results incorporated into program</p>	Enhance public participation	Number of pilot sites where potentially responsible parties agreed to conduct cleanup actions or investigations: 13 in 9 regions	None identified	<p>Higher-quality work products and greater community acceptance and support resulting from community input</p> <p>Some delays resulting from increased community involvement</p> <p>"Lessons learned" applied programwide</p>
Integrate federal, state, and tribal site management	<p>Defer placement of certain sites on the National Priorities List so that states or tribes can oversee cleanup actions at these sites conducted and funded by potentially responsible parties</p> <p>Scope: Pilots</p> <p>Status: Ongoing</p>	Enhance participation of states and tribes in the cleanup process	<p>Guidance documents</p> <p>Number of states with which EPA has signed agreements to defer listing of sites: 12 states in 6 regions</p> <p>Number of sites covered by deferral agreements: 31</p>	None identified	Greater state/tribal participation and better site management

Continued from Previous Page

**Appendix II
Characteristics of 48 Reforms That EPA Did
Not Classify as Both Fundamental and
Measurable**

Reform	Description of reform	Reform's goals	Results and effects of reform identified by EPA		
			Outputs (unverified) ^a	Outcomes (unverified)	Nonmeasurable effects
Fund state/tribal block grants	Pilot test the funding of block grants to give states and tribes greater flexibility in using funds to conduct or provide assistance for Superfund cleanup activities Scope: Pilots Status: Ongoing	Enhance participation of states and tribes in the cleanup process	Number of states/tribes with block grant cooperative agreements: 15 Reduction in time needed to prepare and process paperwork: 85 percent in Illinois Time saved by this regulatory change: 3 months at one Illinois site	None identified	More efficiency and flexibility in the use of cooperative agreements
Involve states and tribes in the Superfund remedy selection process	Increase the role of states and tribes in selecting the remedies at National Priorities List sites, when possible and consistent with applicable laws and regulations governing cleanups Scope: Pilot Status: Fully implemented/ongoing	Enhance participation of states and tribes in the cleanup process	Number of pilot sites: 11 in 6 regions Number of sites where the state (or tribe) has the lead role in cleanup responses, including the remedy selection: Evaluation of states' remedy selection data, which EPA began collecting in fiscal year 1998, ongoing	None identified	None identified
Involve community stakeholders in the Superfund remedy selection process	At the regional level, test the use of approaches for involving community stakeholders in the Superfund remedy selection process Scope: Pilots Status: Fully implemented/completed	Enhance public participation	Number of sites where EPA successfully involved the community in remedy selection: 6 Compendium of best practices produced (6/99)	None identified	More favorable perception of EPA and the Superfund process Better remedy selection process

Continued from Previous Page

**Appendix II
Characteristics of 48 Reforms That EPA Did
Not Classify as Both Fundamental and
Measurable**

Reform	Description of reform	Reform's goals	Results and effects of reform identified by EPA		
			Outputs (unverified) ^a	Outcomes (unverified)	Nonmeasurable effects
Provide training and health assistance to communities	In coordination with the U.S. Public Health Service, establish the Medical Assistance Plan to respond to the health concerns of underserved citizens living near hazardous waste sites by providing for, among other things, (1) physicians trained in environmental issues and available to serve the affected communities, (2) medical testing, (3) technical assistance to local agencies and health care providers, and (4) environmental health education to health care providers Scope: Pilot Status: Pilot completed (Reform phased out after completion)	Prevent minority/low-income populations from bearing the brunt of pollution	Development of Superfund Medical Assistance Work Group (SMAWG) (phased out) Number of sites selected for Medical Assistance Plan program testing: 1 Amount designated for implementing the plan at the site: \$400,000	None identified	None identified
Promote community outreach for brownfield redevelopment	Fund pilot projects designed to promote community involvement and partnerships, relying on a coordinator in each region to oversee brownfield pilot projects and initiate other brownfield activities Scope: Pilots Status: Pilots ongoing	Enhance public participation Restore formerly contaminated sites to beneficial use	Number of brownfield assessment pilot projects funded: 305 through October 1999	None identified	Brownfield redevelopment process affected by citizens' involvement

Continued from Previous Page

**Appendix II
Characteristics of 48 Reforms That EPA Did
Not Classify as Both Fundamental and
Measurable**

Reform	Description of reform	Reform's goals	Results and effects of reform identified by EPA		
			Outputs (unverified) ^a	Outcomes (unverified)	Nonmeasurable effects
Provide job training and development	Using classroom instruction and hands-on work experience, conduct interagency pilot projects to train and employ residents of distressed neighborhoods located near Superfund and brownfield sites and provide outreach, curriculum, and technical assistance to community colleges located near the pilot sites Scope: Pilots Status: Ongoing	Prevent minority/low-income populations from bearing the brunt of pollution	Funded the National Institute of Environmental Health Science's Minority Worker Training Program Number of Super Job Training Initiative pilots: 9 Number of grants awarded for health and safety training programs: 20	Number of students trained: 75 Number of students employed at sites: about 25	Good will fostered in communities
Use risk-sharing to encourage the implementation of innovative technology	Underwrite the use of certain promising approaches for a limited number of projects, agreeing to share up to 50 percent of the cost of an innovative remedy if it fails and subsequent remedial action is required Scope: Pilots Status: Ongoing	Share the risks associated with implementing innovative technologies Expedite cleanups	Number of sites that participate in risk-sharing and eventually use the technologies selected: Data not provided Number of risk-sharing agreements negotiated: 4	None identified	None identified
Program guidance (8)					
Establish remedy selection "rules of thumb"	Develop remedy selection rules to flag potentially "controversial" cleanup decisions for senior managers to review, providing a consolidated guide to procedures for consultation between headquarters and the regions on remedy selection issues Scope: Programwide Status: Fully implemented/ongoing	Promote consistency in remedy selection at sites nationwide	Guidance documents, including <i>Rules of Thumb for Superfund Remedy Selection and Consolidated Guide to Consultation Procedures for Superfund Response Decisions</i>	None identified	Stakeholders' confidence in the remedy selection process enhanced More consistency in remedy selection Some costs reduced

Continued from Previous Page

**Appendix II
Characteristics of 48 Reforms That EPA Did
Not Classify as Both Fundamental and
Measurable**

Reform	Description of reform	Reform's goals	Results and effects of reform identified by EPA		
			Outputs (unverified) ^a	Outcomes (unverified)	Nonmeasurable effects
Clarify the role of cost	Develop documents to (1) clarify the role of cost in developing cleanup options and selecting remedies as established in existing law, regulation, and policy, and (2) promote the use of existing policies and guidance to ensure cost-effectiveness Scope: Programwide Status: Fully implemented/ongoing	Promote consistency in remedy selection at sites nationwide	Fact sheet entitled <i>The Role of Cost in the Superfund Remedy Selection Process</i>	None identified	Stakeholders' confidence in the remedy selection process enhanced More consistency in remedy selection Some costs reduced
Develop a directive on national consistency in remedy selection	Emphasize the importance of maintaining appropriate national consistency in the Superfund remedy selection process and encourage program managers to make full use of existing tools and consultation opportunities to promote consistency Scope: Programwide Status: Fully implemented/ongoing	Promote consistency in remedy selection at sites nationwide	Directive entitled <i>National Consistency in Superfund Remedy Selection</i>	None identified	A more predictable remedy selection process that more readily addresses national goals
Clarify information on remedy selection	Develop summary sheets to demonstrate the context, basis, and rationale for the remedy selected at each site, including the (1) relationship between the site's risks and response actions and (2) costs and benefits of cleanup alternatives Scope: Programwide Status: Fully implemented/ongoing	Promote consistency in remedy selection at sites nationwide	Guidance on records of decision issued (8/99)	None identified	Clearer and more consistent records of decision on selected remedies Stakeholders' confidence in the remedy selection process enhanced

Continued from Previous Page

**Appendix II
Characteristics of 48 Reforms That EPA Did
Not Classify as Both Fundamental and
Measurable**

Reform	Description of reform	Reform's goals	Results and effects of reform identified by EPA		
			Outputs (unverified) ^a	Outcomes (unverified)	Nonmeasurable effects
Establish national criteria for risk assessment	Develop guidance that establishes national criteria for the regions to use in planning, reporting, and reviewing risk assessments to ensure that they are consistent Scope: Programwide Status: Fully implemented/ongoing	Ensure that risk assessments are (1) more transparent, clear, consistent and reasonable; (2) well scoped and well designed; (3) in a standard presentation format; and (4) easier for decision-makers at Superfund sites to review	Guidance document entitled <i>Risk Assessment Guidance for Superfund: Human Health Evaluation Manual (Part D): Standardized Planning, Reporting, and Review of Superfund Risk Assessments</i> Number (and percentage) of new remedial investigation/feasibility study risk assessments performed using a generic risk assessment statement of work: Data not provided Number (and percentage) of new remedial investigation/feasibility study risk assessments performed using standard tables for reporting risk data: Data not provided	None identified	Better decision-making for response actions at Superfund sites Clearer risk assessments Resources saved

Continued from Previous Page

**Appendix II
 Characteristics of 48 Reforms That EPA Did
 Not Classify as Both Fundamental and
 Measurable**

Reform	Description of reform	Reform's goals	Results and effects of reform identified by EPA		
			Outputs (unverified) ^a	Outcomes (unverified)	Nonmeasurable effects
Develop guidance to standardize risk assessments	Update and standardize risk assessment guidance, especially in areas where science and policy have advanced over the past several years, such as exposure assessment, human health toxicity assessment, and risk communication Scope: Programwide Status: Not yet fully implemented/ongoing	Ensure the quality, consistency, and reliability of risk assessments Promote greater community involvement in designing risk assessments	Guidance documents under development Meetings with stakeholders to seek input on priorities for improvement	None identified	None identified
Develop soil screening levels	Issue guidance on establishing appropriate cleanup levels and levels of concern (soil screening levels) for common chemical contaminants in soil and complete a pilot study of soil screening levels at 10 sites Scope: Programwide Status: Fully implemented/ongoing	Reduce time and costs of cleanups Promote more effective and consistent cleanups nationwide	Soil screening guidance	None identified	Development of a useful tool for initially assessing a site's risks

Continued from Previous Page

**Appendix II
Characteristics of 48 Reforms That EPA Did
Not Classify as Both Fundamental and
Measurable**

Reform	Description of reform	Reform's goals	Results and effects of reform identified by EPA		
			Outputs (unverified) ^a	Outcomes (unverified)	Nonmeasurable effects
Promote the use of innovative technology	Use public-private partnerships to demonstrate and evaluate innovative hazardous waste treatment technologies and increase their acceptance by (1) targeting contamination problems affecting both public and private sites, (2) evaluating technology databases, and (3) trying to improve the dissemination of information on treatment technologies to common data repositories Scope: Programwide Status: Ongoing—effort adopted as an “administrative improvement” in 1993	Better protect human health and the environment Expedite cleanups Reduce cleanup costs	Number of partnerships: 5 active/2 inactive or completed Number of technology cost and performance case studies: 82 by EPA; 140 by the Federal Remediation Technologies Roundtable Remediation technology databases established: 4	None identified	Better information for decisionmakers about appropriate remedies for sites
Replaced/superseded reforms (2)					
Clarify National Priorities List sites	Issue guidance (1) authorizing the regions to identify uncontaminated land parcels on or adjacent to National Priorities List sites to facilitate the transfer, development, or redevelopment of these parcels; (2) setting forth the factual basis for assurances that parcels are not contaminated; and (3) specifying the consultation and coordination required Scope: Programwide Status: Fully implemented/ongoing	Restore formerly contaminated sites to beneficial use	Completion of the <i>Federal Register</i> notice and implementing guidance Number of sites from which clean parcels had been deleted as of March 1999: 16 Number of sites for which notices of intent to delete clean parcels had been issued as of March 1999: 2	None identified	More favorable public perception of sites with deleted parcels Greater potential for redevelopment of partially deleted sites Positive economic and other effects on the communities

Continued from Previous Page

**Appendix II
 Characteristics of 48 Reforms That EPA Did
 Not Classify as Both Fundamental and
 Measurable**

Reform	Description of reform	Reform's goals	Results and effects of reform identified by EPA		
			Outputs (unverified) ^a	Outcomes (unverified)	Nonmeasurable effects
Adopt private-party allocations	<p>Give private parties an opportunity to seek EPA's approval of an allocation that covers 100 percent of the costs at a site, with the understanding that an approved allocation can serve as the basis for a settlement</p> <p>Scope: Programwide</p> <p>Status: Fully implemented/completed (incorporated into orphan share compensation reform)</p>	<p>Facilitate settlements</p> <p>Reduce litigation and transaction costs</p> <p>Increase program's fairness</p>	<p>Number of sites where private-party allocations have been adopted: 3 settlements before this reform was merged with the orphan share reform</p>	<p>None identified</p>	<p>Transaction costs for all parties reduced</p> <p>Settlements facilitated</p> <p>Parties' concerns about fairness addressed</p>
Other reforms (19)					
Streamline/expedite the cleanup process	<p>Issue guidance on presumptive remedies (standardized remedies for certain types of sites), including those for municipal landfills and volatile organic compounds in soil</p> <p>Scope: Programwide</p> <p>Status: Fully implemented/ongoing</p>	<p>Expedite cleanups</p> <p>Promote more effective and consistent cleanups nationwide</p>	<p>Guidance documents, including <i>Presumptive Remedy for CERCLA Municipal Landfill Sites and Users' Guide for the VOCs in Soil Presumptive Remedy</i></p>	<p>None identified</p>	<p>More effective and consistent remedy selection</p> <p>Time and/or costs of cleanups reduced</p>

Continued from Previous Page

**Appendix II
 Characteristics of 48 Reforms That EPA Did
 Not Classify as Both Fundamental and
 Measurable**

Reform	Description of reform	Reform's goals	Results and effects of reform identified by EPA		
			Outputs (unverified) ^a	Outcomes (unverified)	Nonmeasurable effects
Promote greater fairness for Superfund site owners	Issue guidance and make information available to address property owners' concerns about, among other issues, federal liens on contaminated property and the potential liability of prospective purchasers of Superfund sites Scope: Programwide Status: Fully implemented/ongoing (Reform partially replaced by a later reform intended to remove liability barriers through agreements with prospective purchasers)	Increase program's fairness Reduce litigation and associated costs	Guidance and other documents, including <i>Guidance on Agreements with Purchasers of Contaminated Property</i> and a model agreement Increase through fiscal year 1998 in the number of prospective purchaser agreements following the issuance of the guidance and model agreement: 100	None identified	None identified
Implement an environmental justice strategy	Direct staff to evaluate all decision documents for the possibility of disproportionate adverse effects on minority and low-income communities in an effort to ensure that all waste programs treat environmental justice as an integral part of EPA's policies, guidance, and regulations Scope: Programwide Status: Fully implemented/ongoing	Prevent minority/low-income populations from bearing the brunt of pollution Expand meaningful public participation	Policy directive Consultation with the National Environmental Justice Advisory Council during policy development	None identified	None identified

Continued from Previous Page

**Appendix II
Characteristics of 48 Reforms That EPA Did
Not Classify as Both Fundamental and
Measurable**

Reform	Description of reform	Reform's goals	Results and effects of reform identified by EPA		
			Outputs (unverified) ^a	Outcomes (unverified)	Nonmeasurable effects
Defer certain site categories to states	Encourage states, territories, and tribes to clean up contaminated sites under their own laws by, for example, working with state associations to develop criteria for deferring sites to states, initiating pilot deferral projects in qualified states, and establishing a workgroup to address deferral questions and assess early state-led cleanups Scope: Programwide Status: Fully implemented/ongoing	Enhance participation of states and tribes in the cleanup process	Guidance document	None identified	None identified
Improve contract management	Improve contractors' performance by implementing (1) the <i>Superfund Long-Term Contracting Strategy</i> , which shifts responsibility for contracts and contract management from headquarters to the regions, and, (2) most recently, the <i>Contracts 2000 Strategy</i> to develop a set of contracts that best meet the program's needs while using best procurement practices Scope: Programwide Status: Fully implemented/ongoing—effort adopted as an “administrative improvement” in 1993	Improve program's efficiency and effectiveness Reduce cleanup costs	Reduction in program support costs, measured as a percentage of total invoice costs, over time: Data not provided <i>Long-Term Contracting Strategy, Contracts 2000 Strategy (2/98)</i>	None identified	None identified

Continued from Previous Page

**Appendix II
Characteristics of 48 Reforms That EPA Did
Not Classify as Both Fundamental and
Measurable**

Reform	Description of reform	Reform's goals	Results and effects of reform identified by EPA		
			Outputs (unverified) ^a	Outcomes (unverified)	Nonmeasurable effects
Accelerate cleanup at bases designated for closures	<p>Work with the Department of Defense to accelerate cleanup work at military bases designated for closure or realignment and to address property transfer, redevelopment, and community involvement issues</p> <p>Scope: Programwide (108 installations)</p> <p>Status: Fully implemented/ongoing—effort adopted as an “administrative improvement” in 1993</p>	<p>Expedite cleanups</p> <p>Restore formerly contaminated sites to beneficial use</p>	<p>Input to Department of Defense guidance and joint policy documents</p>	<p>Project work (time) reductions: over 250 work years through fiscal year 1998</p> <p>Project costs avoided: \$250 million through fiscal year 1998</p>	<p>Better community and interagency working relationships</p> <p>Better relationships between the Department of Defense and states</p>
Improve compliance monitoring	<p>Issue regional compliance-monitoring guidance and implement regional compliance-tracking systems to strengthen enforcement through oversight of potentially responsible parties' compliance</p> <p>Scope: Programwide</p> <p>Status: Fully implemented/ongoing—effort adopted as an “administrative improvement” in 1993</p>	<p>Improve program's efficiency and effectiveness</p> <p>Better protect human health and the environment</p>	<p>Regional compliance-monitoring guidance</p> <p>Regional compliance-tracking systems</p>	<p>None identified</p>	<p>None identified</p>
Improve the effectiveness of cost recovery	<p>Improve systems for tracking cost recovery data and for assigning priorities to cost recovery work and revise indirect cost accounting methodologies to increase the percentages of indirect costs that are recovered</p> <p>Scope: Programwide</p> <p>Status: Fully implemented/ongoing—effort adopted as an “administrative improvement” in 1993</p>	<p>Reduce cleanup costs</p>	<p>Results of cost-recovery planning and targeting efforts</p>	<p>Percentage of targeted sites valued at more than \$200,000 that were addressed in fiscal year 1998: 100</p> <p>Costs recovered through settlements through fiscal year 1998: About \$2.4 billion</p>	<p>None identified</p>

Continued from Previous Page

**Appendix II
 Characteristics of 48 Reforms That EPA Did
 Not Classify as Both Fundamental and
 Measurable**

Reform	Description of reform	Reform's goals	Results and effects of reform identified by EPA		
			Outputs (unverified) ^a	Outcomes (unverified)	Nonmeasurable effects
Fund technical assistance grants	Encourage the regions to consider means of streamlining the grant process, such as providing advance funding for technical assistance grants and authorizing training for grant recipients, to make resources available for communities to acquire independent technical assistance that could help them understand and comment on information related to Superfund sites (e.g., records of decision on cleanup remedies) Scope: Programwide Status: Not yet fully implemented	Enhance public participation	Number of technical assistance grants awarded since 1988: Over 202 Publication in the <i>Federal Register</i> of a rule to streamline the grant process, 8/24/99	None identified	None identified
Use risk-sharing to encourage the use of innovative technologies	Reduce the risks associated with using innovative technologies by providing indemnification coverage for the prime contractor as well as the innovative technology contractor, thereby protecting both from third-party liability claims if the technology does not perform as expected Scope: Programwide Status: Fully implemented/ongoing	Expedite cleanups	Policy directive Number of requests for expanded indemnification coverage received: 0	None identified	None identified

Continued from Previous Page

**Appendix II
Characteristics of 48 Reforms That EPA Did
Not Classify as Both Fundamental and
Measurable**

Reform	Description of reform	Reform's goals	Results and effects of reform identified by EPA		
			Outputs (unverified) ^a	Outcomes (unverified)	Nonmeasurable effects
Support voluntary cleanup programs	<p>Work with states and tribes to promote programs that encourage private parties to voluntarily clean up contaminated sites by, for example, (1) providing financial assistance to support an infrastructure for state voluntary cleanup programs and to promote cooperation among states, tribes, and regions, and (2) issuing guidance on drafting memorandums of agreement between EPA regions and states in support of voluntary cleanup programs</p> <p>Scope: Programwide</p> <p>Status: Fully implemented/ongoing</p>	<p>Enhance participation of states and tribes in the cleanup process</p> <p>Restore formerly contaminated sites to beneficial use</p>	<p>Number of states that have implemented voluntary cleanup programs: 44</p> <p>Number of states that have signed agreements with EPA regions on supporting voluntary cleanups and redeveloping brownfields: 14 as of December 1999</p> <p>Amount distributed since 1997 to support an infrastructure for state/ tribal voluntary cleanup programs: Over \$29 million</p>	None identified	Ability of state/tribal programs to assess, clean up, and recover costs at brownfield sites enhanced
Encourage community participation in risk assessments	<p>Develop a reference document to support and promote public participation in the risk assessment process</p> <p>Scope: Programwide</p> <p>Status: Fully implemented/ongoing</p>	Encourage stakeholders' involvement in the risk assessment process	<p>Reference documents, including <i>Risk Assessment Guidance for Superfund, Volume 1, Human Health Evaluation Manual (Supplement to Part A): Community Involvement in Superfund Risk Assessments</i></p> <p>Video and brochure on citizens' involvement in risk assessments</p>	Number (and percentage) of new remedial investigation/feasibility study starts in which the community has been substantively involved in designing the risk assessment: Data not provided	<p>Remedies improved</p> <p>Community relations improved</p>

Continued from Previous Page

**Appendix II
Characteristics of 48 Reforms That EPA Did
Not Classify as Both Fundamental and
Measurable**

Reform	Description of reform	Reform's goals	Results and effects of reform identified by EPA		
			Outputs (unverified) ^a	Outcomes (unverified)	Nonmeasurable effects
Allow potentially responsible parties to perform risk assessments	Issue a directive (1) confirming that responsible and qualified parties can perform risk assessments at most sites and (2) removing the requirement that the regions consult with headquarters before allowing these parties to perform risk assessments Scope: Programwide Status: Fully implemented/ongoing	Encourage stakeholders' involvement in the risk assessment process Expedite cleanups	Policy document: <i>Revised Policy on Performance of Risk Assessments During Remedial Investigations/ Feasibility Study (RI/FS) by Potentially Responsible Parties</i>	Number (and percentage) of new remedial investigation/ feasibility study starts where the risk assessment was performed by the potentially responsible parties: Data not provided	None identified
Establish an expert workgroup on lead	Establish an expert workgroup to standardize risk assessment approaches for lead-contaminated Superfund sites and provide advice to regional risk assessors and site managers Scope: Programwide Status: Fully implemented/ongoing	Better protect human health and the environment Make risk assessments more consistent	Technical Review Workgroup and Lead Sites Workgroup Guidance document: <i>Revised Interim Soil Lead (PB) Guidance for CERCLA Sites and RCRA Corrective Action Facilities</i> Other guidance documents and site-specific consultations	None identified	More opportunities for the public to interact with EPA Fewer questions raised on consistency Use of better science advanced

Continued from Previous Page

**Appendix II
Characteristics of 48 Reforms That EPA Did
Not Classify as Both Fundamental and
Measurable**

Reform	Description of reform	Reform's goals	Results and effects of reform identified by EPA		
			Outputs (unverified) ^a	Outcomes (unverified)	Nonmeasurable effects
Establish a lead regulator for federal sites	Develop guidance promoting the concept of a single regulator for federal sites, specifying roles and outlining the general principles and guidelines that federal and state partners should follow in overseeing cleanup activities, thereby simplifying the cleanup process and allowing for more efficient staffing Scope: Programwide Status: Fully implemented/ongoing	Improve program's efficiency and effectiveness	Guidance documents	None identified	Less duplication of effort and inefficiency in the use of resources
Consider the response actions taken at sites before placing them on the National Priorities List	Revise guidance to (1) ensure that response actions taken at sites up to the time of their placement on the National Priorities List are considered in determining whether the sites qualify for the list and (2) incorporate greater flexibility in evaluating whether sites should be removed from the list to encourage early cleanup actions, especially by private parties Scope: Programwide Status: Fully implemented/ongoing	Reduce litigation and associated costs	Amended policy document: <i>Revised Hazard Ranking System: Evaluating Sites After Waste Removals</i> Number of sites considered as low priorities for placement on the National Priorities List or classified as "no further remedial action planned" because prior cleanup activities, such as waste removal, were considered in setting priorities: Data not provided	None identified	Incentives provided for parties to conduct early response actions before sites are placed on the National Priorities List

Continued from Previous Page

**Appendix II
 Characteristics of 48 Reforms That EPA Did
 Not Classify as Both Fundamental and
 Measurable**

Reform	Description of reform	Reform's goals	Results and effects of reform identified by EPA		
			Outputs (unverified) ^a	Outcomes (unverified)	Nonmeasurable effects
Promote risk-based priority-setting for federal facilities	<p>Develop guidance for the regions that will address (1) the role of risk and other factors (such as cost, community concerns, environmental justice, and cultural considerations) in setting priorities at federal facilities, (2) the Department of Defense's and the Department of Energy's approaches to evaluating risks at sites, and (3) the appropriate role of stakeholders in setting priorities</p> <p>Scope: Programwide</p> <p>Status: Not yet fully implemented/ongoing</p>	Better protect human health and the environment	<p>Interim final guidance</p> <p>Number of federal facility agreements revised to reflect changes in priorities within Department of Defense and Department of Energy facilities (number of agreements and number of milestones revised): Data not provided</p>	None identified	Three regions (III, IX, and X) assisted in setting risk-based priorities at Navy Superfund sites

Continued from Previous Page

**Appendix II
Characteristics of 48 Reforms That EPA Did
Not Classify as Both Fundamental and
Measurable**

Reform	Description of reform	Reform's goals	Results and effects of reform identified by EPA		
			Outputs (unverified) ^a	Outcomes (unverified)	Nonmeasurable effects
Ensure more equitable issuance of unilateral administrative orders	Issue unilateral administrative orders for site cleanups to the largest manageable number of parties, after considering evidence of the parties' liability, financial viability, and contribution to a site's waste, and establish procedures requiring regional staff to document their reason(s) for proposing that certain parties be excluded from administrative orders Scope: Programwide Status: Fully implemented/ongoing	Increase program's fairness Reduce litigation and associated costs	For each unilateral administrative order issued, the number of parties identified at the site, the number of parties excluded, and the documentation of reasons for exclusion: Data not provided (enforcement data confidential) Number of orders independently reviewed by EPA headquarters to ensure that they had been issued to all appropriate parties (including governmental entities): 180 Number (and percentage) of orders that have required documentation: Data not provided (enforcement data confidential) Number (and percentage) of cases where reasons cited for excluding parties were consistent with EPA's policy: Data not provided (enforcement data confidential)	None identified	Regions' willingness to issue unilateral administrative orders to a larger number of potentially responsible parties increased Parties' perception of EPA regions' fairness in issuing orders improved

Continued from Previous Page

**Appendix II
 Characteristics of 48 Reforms That EPA Did
 Not Classify as Both Fundamental and
 Measurable**

Reform	Description of reform	Reform's goals	Results and effects of reform identified by EPA		
			Outputs (unverified) ^a	Outcomes (unverified)	Nonmeasurable effects
Establish ombudsmen	<p>Establish an ombudsman in each region to facilitate the resolution of regional issues or problems by serving as a point of contact for the public and helping to resolve stakeholders' concerns</p> <p>Scope: Programwide</p> <p>Status: Fully implemented/ongoing</p>	Enhance public participation	Appointed an ombudsman in each region	Number of cases for which EPA conducted investigations and mediations: Data not provided	Public's perceptions of EPA's decisions improved

Continued from Previous Page

^aUnless otherwise noted, all data are current as of the end of fiscal year 1999.

Source: GAO's classification and presentation of information from EPA.

Objectives, Scope, and Methodology

Our overall objective was to determine the effectiveness of the 62 administrative reforms EPA has introduced to improve the Superfund program. Specifically, we sought to (1) determine the demonstrated results of these reforms and evaluate the quality of the measures the agency uses to gauge the results and (2) identify legislative changes to the program that either the agency or key stakeholders—including, among others, representatives of parties responsible for cleanups, environmental groups, and states—believe are still necessary. In determining the scope of our review, we asked the agency to identify those reforms that it considers to be key to the Superfund program. The agency identified 14 of the 62 reforms that it considers to have fundamentally and measurably changed the program, and we focused our detailed audit work on them. This report primarily summarizes the results of our review of the 14 reforms as a group. However, we also provide information on the remaining 48 reforms (see app. II).

To obtain information on the 62 reforms, we developed a set of questions on their nature, characteristics, scope of implementation, performance measures, and results. We submitted these questions to the Senior Process Manager for Reforms in the Office of Emergency and Remedial Response within EPA's Office of Solid Waste and Emergency Response and to the principal reform manager in the Office of Site Remediation Enforcement in EPA's Office of Enforcement and Compliance Assurance at the agency's headquarters in Washington, D.C. These reform managers coordinated responses throughout the agency and provided us with detailed information on each of the reforms. We also reviewed EPA's annual reports on the reforms and various information and documents relating to the reforms available on EPA's Superfund Web site.

To determine the overall effects of key reforms on the Superfund program, we first asked these reform managers to identify the reforms that they regarded as “fundamental” or otherwise significant in some way. We also asked them to explain why they classified these reforms as fundamental or significant. In their responses, the reform managers identified 20 reforms that they considered to have fundamentally changed the Superfund program. According to these reform managers, EPA regards a reform as having produced a “fundamental change” if it (1) results in a new way of doing business for the Superfund program; (2) is intended for programwide implementation and has been integrated into the base program's operations; and (3) where appropriate, is being tracked as a measure for key agency or program goals. We also asked the reform managers to identify the fundamental reforms that have produced measurable

(quantifiable) outcomes. Of the 20 reforms, these reform managers characterized 14 as having produced measurable outcomes, and we focused our review of the reforms' effects on the program on these 14.

To obtain the information we needed on these 14 reforms, we submitted additional detailed questions on each reform to the agency's reform managers. In these questions, we asked for further information on (1) each reform's goals, (2) the extent to which EPA regions are implementing the reform, (3) the performance measures EPA uses to track progress toward achieving the reform's goals, and (4) the results of each reform. We also asked EPA to provide supporting data and documentation to verify this information. To determine the extent of the reforms' implementation and their effects, we reviewed and analyzed the information provided by EPA. In addition, we reviewed and synthesized information from key published and internal EPA documents, as well as reports, studies, and analyses by other organizations that have examined the effects of the reforms. We did not attempt to verify the data and analyses provided. Furthermore, we interviewed representatives of various industry, environmental, and government groups, including, for industry groups, the Chemical Manufacturer's Association, the Superfund Settlements Project, the National Association of Realtors, and the National Federation of Independent Business; for environmental groups, Environmental Defense, the U.S. Public Interest Research Group, and Resources for the Future; and for state and local government groups, the Association of State and Territorial Solid Waste Management Officials, the Committee for the National Institute for the Environment, the National Association of Counties, the National Association of Local Government Environmental Professionals, the National Governors Association, the U.S. Conference of Mayors, and the congressionally chartered National Academy of Public Administration. We also talked to staff in EPA's Office of the Inspector General and reviewed a number of the Office's reports on Superfund. In addition, in commenting on some of the reforms, we relied on our past work on a variety of Superfund issues.

To identify changes to the Superfund program that EPA and other stakeholders believe are still necessary, we reviewed and analyzed EPA's written responses to the questions we submitted on each reform. We also talked to representatives from the industry, environmental, and state and local government groups identified above to discuss their views on changes needed in the Superfund program.

Appendix III
Objectives, Scope, and Methodology

We conducted our work for this review between July 1999 and May 2000 in accordance with generally accepted government auditing standards.

Comments From the Environmental Protection Agency



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

APR 28 2000

OFFICE OF
SOLID WASTE AND EMERGENCY
RESPONSE

Mr. Peter F. Guerrero
Director, Environmental Protection Issues
U.S. General Accounting Office
441 G Street, NW
Washington, D.C. 20548

Dear Mr. Guerrero:

Thank you for the opportunity to comment on the U.S. General Accounting Office (GAO) draft report "Superfund, Extent To Which Most Reforms Have Improved the Program Is Unknown" to be issued during May 2000. The following paragraphs highlight our key concerns with the draft report. Detailed comments are enclosed. This response has been fully coordinated with EPA's Office of Site Remediation Enforcement.

EPA has taken actions to develop and implement 62 reform initiatives covering virtually all aspects of the Superfund Program. Most were designed to address issues identified by various stakeholders, to test concepts being considered in the legislative arena, or to explore other new ideas of potential interest to the Program. EPA is proud of the work accomplished under the Superfund Administrative Reforms. We believe the initiatives, pilots, and new or revised guidance embodied in the Reforms have contributed to making Superfund a substantially improved, fundamentally different Program, resulting in significant progress in cleaning up hazardous waste sites. Through the Reforms, the Superfund Program is protecting public health and the environment in a way that is faster, fairer and more efficient. We agree with the stakeholders you interviewed that shared our belief that Superfund is an improved Program and that the Reforms have had a positive impact on Program performance. We also appreciate the constructive feedback on how we can continue to improve the Program. We remain fully committed to the ongoing implementation of the Reforms, and we will continue to refine or improve them where appropriate.

It is at least in part because of these Reforms that we have been able to complete construction at more than three times as many Superfund sites in the past seven years as in the first 12 years of the Program combined. These Reforms have allowed more than 90 percent of Superfund sites to have construction complete or underway, with over 70 percent of these cleanups being performed by private parties pursuant to an enforcement instrument. It is largely because of these Reforms that both time and cost to clean up sites have been reduced by 20 percent.

Recycled/Recyclable • Printed with Vegetable Oil Based Inks on 100% Recycled Paper (20% Postconsumer)

Based on our review of the draft report, we offer the following concerns:

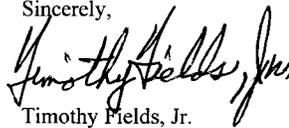
- All the Reforms have had a significant impact on the Superfund Program, even if precise results cannot be measured. Our designation of 20 of the Reforms as having “fundamentally changed” the Program should not be misconstrued. Moreover, it should not be interpreted to mean that the remaining 42 Reforms did not benefit the Program. Instead, the report should clearly state that we purposely limited the category of “fundamental” to include the Reforms that have had the biggest impact, individually, on the Program. Also, it should be noted that many of the Reforms work together to improve a particular aspect of the Program, and to view them individually can be misleading. For example, Reforms for remedy updates and the National Remedy Review Board were designated as “fundamental” and are properly credited with cost savings for the Agency and other stakeholders. However, also important in addressing stakeholder concerns related to remedy selection are the numerous guidance documents developed under other Reforms (e.g., Future Land Use Directive, Rules of Thumb Fact Sheet, and Role of Cost Fact Sheet).
- We strongly disagree with your characterization that several of the Reforms designated as “fundamental” have not produced measurable outcomes. For the overarching enforcement goal of “fairness,” while there is not one perfect measure, there are several valuable indicators. These include a higher percentage of consent decrees than unilateral orders and documentable orphan share offers of compensation. Similarly, for the goal of “reduced transaction costs”, measuring transaction costs seems inherently imprecise not only in Superfund, but in civil litigation generally. Nonetheless, there are valuable indicators of improvement in our Program such as the number of *de minimis* settlements reached and a lack of the need for *de micromis* settlements because of additional provisions in consent decrees to protect truly small parties from litigation. Moreover, there are legitimate constraints on EPA’s ability to develop measures. For example, one obvious way to gather such information on “fairness” and “transaction costs” would be to survey our stakeholders. However, due to the Paperwork Reduction Act, EPA cannot survey more than nine outside stakeholders without prior approval from the Office of Management and Budget (OMB). EPA continues to work with OMB to attain such approval. Even so, we will continue to explore other opportunities to receive feedback from private parties. However, it should be recognized that there are other goals, from EPA’s perspective, that do have valid indicators illustrating the success of these Reforms. For example, results under the enforcement first Reform have saved billions of Trust Fund dollars, ensuring the availability of resources for sites where viable responsible parties are not available. Several of the enforcement Reforms, like orphan share, have resulted in actual or potential cost savings for responsible parties, which is a direct indicator of increased fairness. Another example, construction completions directly result in protection of human health and the environment by ensuring that all direct threats are mitigated and that long term threats are under control.

**Appendix IV
Comments From the Environmental
Protection Agency**

- We disagree with suggestions in the draft report that EPA has not sustained a high level of commitment to implementation of the Reforms. EPA Headquarters and the Regions have invested resources to ensure eligible Reforms are considered for use when appropriate. It is not realistic to expect annual outputs for the various Reforms to maintain a steady state, or increase over time, independent of other Program activities. Also, it is not realistic to expect outputs to mirror a Region's percentage of NPL sites. Annual trends and Regional distributions of Reform outputs are difficult to assess given the breadth of activities covered and the dynamic nature of the Program. Many Reforms relate to specific pipeline outputs and the opportunity to apply a particular Reform will vary depending on the level of pipeline activity. For example, a cursory review of recent pipeline outputs suggests that NPL listings, RI/FS starts, and ROD completions all declined during the period from FY 94 through FY 97. NPL listings and RI/FS starts increased during FY 98 and FY 99, but ROD completions continued to decline. This suggests that Reforms tied to these pipeline activities, e.g., Community Advisory Groups (CAGs) and Technical Assistance Grants (TAGs), and the opportunity to apply enforcement fairness Reforms to post-ROD negotiations with responsible parties, also could decline. Also, several Reforms are dependent on requests from external stakeholders (CAGs and TAGs, prospective purchaser agreements), or site-specific situations (alternative disputes resolution, special accounts and *de minimus* settlements), or other external factors (new data suggesting an opportunity for a remedy update) and therefore, are not always within our direct control. Finally, Regional variations also can be impacted by their respective level of pipeline activities, as well as the types and complexities of sites with ongoing work.

Again, we appreciate the opportunity to comment on the draft report. As noted above, implementation of the Reforms remains a high priority for the Program. Once your report is issued, we will evaluate your recommendations and include them in our Reforms strategy as appropriate. Please direct questions to Paul Nadeau of the Office of Emergency and Remedial Response (703-603-8794) or Victoria van Roden of the Office of Site Remediation Enforcement (202-564-4268).

Sincerely,



Timothy Fields, Jr.
Assistant Administrator

Enclosure

**Appendix IV
Comments From the Environmental
Protection Agency**

cc: Steven Herman, OECA
Stephen Luftig, OERR
Barry Breen, OSRE
Linda Garczynski, OSPS
James Woolford, FFRRO
Stephen Tiber, OCFO

GAO Contacts and Staff Acknowledgments

GAO Contacts

David G. Wood (202) 512-6111

Eileen Regan Larence (202) 512-6510

Acknowledgments

In addition to those named above, Vincent P. Price, David Goldstein, and Michael Ibay made key contributions to this report.

Ordering Information

The first copy of each GAO report is free. Additional copies of reports are \$2 each. A check or money order should be made out to the Superintendent of Documents. VISA and MasterCard credit cards are accepted, also.

Orders for 100 or more copies to be mailed to a single address are discounted 25 percent.

Orders by mail:

U.S. General Accounting Office
P.O. Box 37050
Washington, DC 20013

Orders by visiting:

Room 1100
700 4th St. NW (corner of 4th and G Sts. NW)
U.S. General Accounting Office
Washington, DC

Orders by phone:

(202) 512-6000
fax: (202) 512-6061
TDD (202) 512-2537

Each day, GAO issues a list of newly available reports and testimony. To receive facsimile copies of the daily list or any list from the past 30 days, please call (202) 512-6000 using a touchtone phone. A recorded menu will provide information on how to obtain these lists.

Orders by Internet:

For information on how to access GAO reports on the Internet, send an e-mail message with "info" in the body to:

info@www.gao.gov

or visit GAO's World Wide Web home page at:

<http://www.gao.gov>

To Report Fraud, Waste, or Abuse in Federal Programs

Contact one:

- Web site: <http://www.gao.gov/fraudnet/fraudnet.htm>
- e-mail: fraudnet@gao.gov
- 1-800-424-5454 (automated answering system)

**United States
General Accounting Office
Washington, D.C. 20548-0001**

**Official Business
Penalty for Private Use \$300**

Address Correction Requested

<p>Bulk Rate Postage & Fees Paid GAO Permit No. GI00</p>

