United States Government Accountability Office

GAO

Report to Congressional Requesters

March 2009

SUPERFUND

Greater EPA Enforcement and Reporting Are Needed to Enhance Cleanup at DOD Sites

GAO

Accountability * Integrity * Reliability

GAO-09-278

March 2009

GAO
Accountability·Integrity·Reliability

Highlights

Highlights of GAO-09-278, a report to congressional requesters

SUPERFUND

Greater EPA Enforcement and Reporting Are Needed to Enhance Cleanup at DOD Sites

Why GAO Did This Study

Prior to the 1980s and the passage of environmental legislation—particularly the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) governing environmental cleanup—Department of Defense (DOD) activities contaminated millions of acres of soil and water on and near DOD sites. The Environmental Protection Agency (EPA), which enforces CERCLA, places the most contaminated sites on its National Priorities List (NPL) and requires that they be cleaned up in accordance with CERCLA. EPA has placed 140 DOD sites on the NPL. Disputes have recently arisen between EPA and DOD on agreements to clean up some of these sites. In addition, most sites were placed on the NPL before 1991; since fiscal year 2000, EPA has added five DOD sites. In this context, we agreed to determine (1) the extent of EPA's oversight during assessment and cleanup at DOD sites and (2) why EPA has proposed fewer DOD sites for the NPL since the early 1990s. GAO interviewed officials at EPA and DOD and reviewed site file documentation at four EPA regions.

What GAO Recommends

GAO suggests that Congress consider amending CERCLA to expand EPA's enforcement authority. EPA agreed that such authority would help assure timely and protective cleanup. DOD disagreed, stating that EPA has sufficient involvement. We continue to assert that EPA needs additional authority to ensure that cleanups are being done properly.

To view the full product, including the scope and methodology, click on GAO-09-278. For more information, contact John Stephenson at (202) 512-3841 or stephensonj@gao.gov.

What GAO Found

EPA evaluates DOD's preliminary assessments of contaminated DOD sites but has little to no oversight of the cleanup of the majority of these sites because most are not on the NPL. Of the 985 DOD sites requiring cleanup of hazardous substances, EPA has oversight authority of the 140 on the NPL; the remaining 845 non-NPL sites are overseen by other cleanup authorities—usually the states. Our review of 389 non-NPL DOD sites showed that EPA decided not to list 56 percent because it determined the condition of the sites did not satisfy the criteria for listing or because it deferred the sites to other programs, most often the Resource Conservation and Recovery Act—another federal statute that governs activities involving hazardous waste. However, EPA regional officials were unable to provide a rationale for not listing the remaining 44 percent because site files documenting EPA's decisions were missing or inconclusive. In addition, EPA has agreements with DOD for cleaning up 129 of the 140 NPL sites and is generally satisfied with the cleanup of these sites. However, DOD does not have agreements for the remaining 11 sites, even though they are required under CERCLA. It was not until more than 10 years after these sites were placed on the NPL that EPA, in 2007, pursued enforcement action against DOD by issuing administrative orders at 4 of the 11 sites.

Since the mid-1990s, EPA has placed fewer DOD sites on the NPL than in previous years for three key reasons. First, EPA does not generally list DOD sites that are being addressed under other federal or state programs to avoid duplication. Second, DOD and EPA officials told us that, because DOD has been identifying and cleaning up hazardous releases for more than two decades, and improved its management of waste generated during its ongoing operations, DOD has discovered fewer hazardous substance releases in recent years, making fewer sites available for listing. Third, in a few instances, state officials or others have objected to EPA's proposal to list contaminated DOD sites, and EPA has usually declined to proceed further. For example, in five instances EPA proposed contaminated DOD sites for the NPL that were not ultimately placed on the list. At four of these sites, the states' governors did not support listing, citing the perceived stigma of inclusion on the NPL and potential adverse economic effect. EPA did not list the fifth site because, according to EPA regional officials, DOD objected and appealed to the Office of Management and Budget, which recommended deferring this listing for 6 months to give DOD time to address personnel and contractor changes and demonstrate remediation progress. EPA officials recently told us that cleanup has taken place at these sites and that it was unlikely or unclear whether they would qualify for placement on the NPL based on their current condition.

Contents

Letter 1

Results in Brief 5
Background 8
EPA Evaluates All Potentially Contaminated DOD Sites for Listing, but Does Not Oversee Cleanup at Most Hazardous Waste DOD Sites 17
EPA Proposes Few Contaminated DOD Sites Based on EPA Policy and DOD's Maturing Inventory of Hazardous Waste Sites 26
Conclusions 32
Matter for Congressional Consideration 33
Recommendations for Executive Action 33
Agency Comments and Our Evaluation 34

Appendix I **Objectives, Scope, and Methodology** 37

Appendix II **Other Cleanup Programs** 39

Appendix III **Comments from the Environmental Protection Agency** 41

Appendix IV **Comments from the Department of Defense** 43

Appendix V **GAO Contact and Staff Acknowledgments** 45

Table

Table 1: Chronology of Events to Negotiate IAGs for DOD NPL Sites 20

Figures

Figure 1: Annual Number of DOD Sites Placed on the NPL Has Declined Since the 1990s, Fiscal Years 1980–2008 4

Figure 2: Private, Federal, and DOD Sites on the NPL 9
Figure 3: Key Stages of the CERCLA Process to Address and Clean Up Hazardous Waste at Federal Facilities 13
Figure 4: Findings from GAO's Review of 389 DOD Sites 32

Abbreviations

CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
DOD	Department of Defense
DOJ	Department of Justice
EPA	Environmental Protection Agency
HRS	Hazard Ranking System
IAG	interagency agreement
NCP	National Oil and Hazardous Substances Pollution Contingency Plan (National Contingency Plan)
NPL	National Priorities List
OMB	Office of Management and Budget
PCB	polychlorinated biphenyl
RCRA	Resource Conservation and Recovery Act
SARA	Superfund Amendments and Reauthorization Act
TCE	trichloroethylene

This is a work of the U.S. government and is not subject to copyright protection in the United States. The published product may be reproduced and distributed in its entirety without further permission from GAO. However, because this work may contain copyrighted images or other material, permission from the copyright holder may be necessary if you wish to reproduce this material separately.

GAO
Accountability * Integrity * Reliability
United States Government Accountability Office
Washington, DC 20548

March 13, 2009

The Honorable Edward J. Markey
Chairman
Subcommittee on Energy and Environment
Committee on Energy and Commerce
House of Representatives

The Honorable John D. Dingell
The Honorable Gene Green
House of Representatives

Prior to the 1980s and the passage of environmental legislation regulating the generation, storage, and disposal of hazardous waste, Department of Defense (DOD) activities and industrial facilities contaminated millions of acres of soil and water on and near DOD sites in the United States and its territories. DOD installations generate hazardous wastes primarily through industrial operations to repair and maintain military equipment. Manufacturing and testing weapons at Army ammunition plants and proving grounds have caused some serious contamination problems as well. To address the cleanup of hazardous substance releases nationwide, in 1980, Congress passed the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), better known as "Superfund."

In 1986, CERCLA was amended by the Superfund Amendments and Reauthorization Act (SARA). SARA reflected concern with the adequacy and timeliness of DOD and other federal agency cleanups, which was compounded by the Environmental Protection Agency's (EPA) unwillingness or inability to carry out enforcement actions against other federal agencies. SARA addresses this problem by (1) requiring DOD and other federal agencies to comply with CERCLA; (2) providing EPA with the authority to select remedies at federal facility National Priorities List (NPL) sites if agreement cannot be reached on the remedy to be selected; and (3) requiring federal agencies to enter into interagency agreements (IAG) with EPA at NPL sites. SARA also added a citizen suit provision to CERCLA specifically authorizing nonfederal parties such as states and citizens' groups to sue DOD and other federal agencies to enforce the terms of IAGs, among other things; and established a Defense Environmental Restoration Program along with separate Department of the Treasury accounts specifically for DOD environmental cleanup activities—to better ensure cleanup funding availability—and requiring DOD to carry out those activities in accordance with CERCLA.

Section 120 of CERCLA, as amended, requires federal agencies to comply with CERCLA and submit information to EPA on certain potentially hazardous releases. EPA maintains this information in a Federal Agency Hazardous Waste Compliance Docket which includes a history of federal facilities that generate, transport, store, or dispose of hazardous waste or that have had some type of hazardous substance release or spill.

For each site on the docket, CERCLA Section 120 requires EPA to take steps to ensure that a preliminary site assessment is conducted by the responsible federal agency.[1] The preliminary assessment, which is generally based on site records and other information regarding hazardous substances stored or disposed of at the facility, forms the basis for EPA to evaluate the site for listing on the NPL. EPA reviews preliminary site assessments to determine whether a site poses little or no threat to human health and the environment or requires further investigation or assessment for possible cleanup. Based on this assessment, EPA may then score and rank the site based on whether the contamination presents a potential threat to human health and the environment.[2] If a site scores at or above a minimum threshold for cleanup under CERCLA, EPA may place the site on the NPL or defer it to another regulatory authority, such as a state agency, for cleanup under other statutory authorities or programs, such as the Resource Conservation and Recovery Act (RCRA). As of November 2008, the NPL included 1,587 sites.[3] Of these, according to EPA officials, 140 were federal DOD sites, representing almost 9 percent of the NPL.[4]

Section 120 of CERCLA also establishes specific procedures for cleaning up federal facilities on the NPL. As part of its oversight responsibility, EPA works with DOD to evaluate the nature and extent of contamination at a

[1]Executive Order 12580 directs the responsible federal agency to carry out the preliminary assessment. This executive order also delegates certain CERCLA authorities to the Department of Defense.

[2]The Hazard Ranking System (HRS) is the principal mechanism EPA uses to place sites on the NPL. The HRS serves as a screening device to evaluate the potential for releases of uncontrolled hazardous substances to cause human health or environmental damage. The HRS provides a measure of relative rather than absolute risk. It is designed so that it can be consistently applied to a wide variety of sites. [40 C.F.R. Pt. 300, App. A, § 1.0]

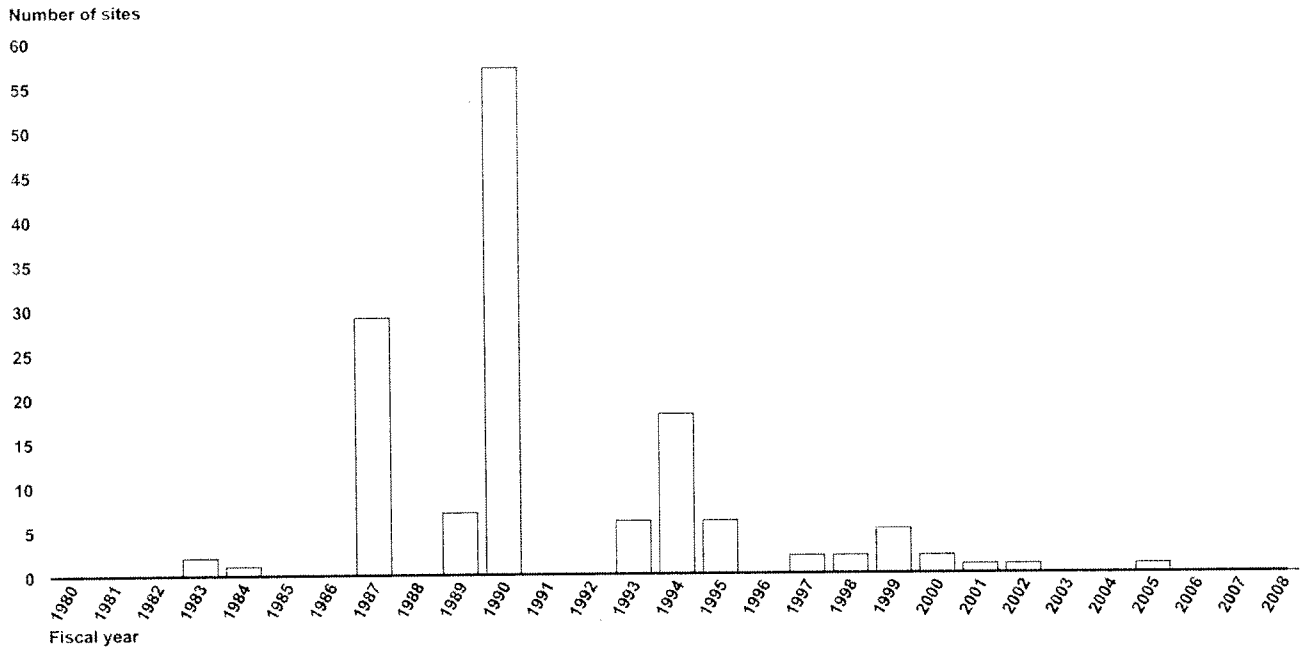
[3]The NPL is composed of 157 final and 15 deleted federal sites and 1,100 final and 315 deleted private sites.

[4]For the purposes of this review, both NPL and non-NPL DOD sites are federal facilities where DOD is the agency responsible for the cleanup of hazardous waste resulting from past practices.

site, select a remedy, track cleanup and monitor the remedy's effectiveness in protecting human health and the environment. Under Section 120 of CERCLA, DOD and EPA are required to enter into an IAG within 180 days of the completion of EPA's review of the remedial investigation and feasibility study at a site. According to EPA officials, shortly after Section 120 was enacted, EPA and DOD acknowledged that regulatory oversight during the investigation phase was required if EPA was to meet its statutory obligation regarding remedy selection at NPL sites. Beginning in 1988, EPA and DOD agreed to model language for IAGs which included a provision to enter into IAGs earlier than mandated by statute—prior to the remedial investigation stage—to establish the roles and responsibilities of EPA and DOD to investigate and clean up sites. IAGs are required to include, at a minimum, a review of the alternative remedies considered and the selected remedy, a schedule for cleanup, and plans for long-term operations and maintenance. The Federal Facility Compliance Act, among other things, authorized EPA to order the cleanup of contaminated sites by initiating administrative enforcement actions against a federal agency under RCRA, on the same basis as they would be applied to private parties.

Disputes have recently arisen between EPA and DOD regarding the terms of IAGs governing cleanup and whether EPA had a sufficient basis for administrative enforcement actions at several DOD sites. In addition, in recent years, EPA has added fewer sites to the NPL. According to EPA's 2007 annual report on Superfund, more than 75 percent of all sites listed on the NPL—both federal and nonfederal—were listed before 1991. Since fiscal year 2000, EPA added five DOD sites to the NPL (see fig. 1).

Figure 1: Annual Number of DOD Sites Placed on the NPL Has Declined Since the 1990s, Fiscal Years 1980–2008



Source: EPA data.

In this context, we agreed to determine (1) the extent of EPA's oversight during assessment and cleanup at DOD NPL and non-NPL sites and (2) why EPA has proposed fewer DOD sites for the NPL since the early 1990s.

To determine the extent of EPA's oversight during assessment and cleanup at NPL and non-NPL DOD sites, we reviewed EPA policies and documentation on oversight processes, and interviewed officials at EPA headquarters and four regional offices to determine the extent to which the agency helps to ensure that the most contaminated DOD sites are expeditiously assessed and cleaned up. We also reviewed documentation and interviewed DOD officials on the agency's environmental restoration program and efforts to clean up contaminated DOD sites. To determine why EPA has proposed fewer DOD sites for the NPL since the early 1990s, we reviewed EPA's file documentation on contaminated DOD sites and interviewed officials at EPA headquarters and selected EPA regions. We excluded from our review sites under DOD's military munitions response program due to the ongoing uncertainty associated with defining unexploded ordnance as hazardous substances and the fact that GAO has ongoing work in this area.

We conducted work at four EPA regions—Atlanta, Chicago, Dallas, and San Francisco—which, taken together, are responsible for about half of all DOD sites in EPA's database of contaminated federal facilities. We selected the Atlanta and Chicago regions because they are responsible for five DOD sites that EPA proposed for the NPL but which were not listed. We selected the San Francisco region because it has the largest number of contaminated DOD sites. We selected the Dallas region to pretest our review methodology because it was geographically convenient. We conducted this performance audit in accordance with generally accepted government auditing standards between January 2008 and March 2009. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives. More detail on the scope and methodology of our review is presented in appendix I.

Results in Brief

While EPA evaluates DOD's preliminary assessments of all DOD sites on the Hazardous Waste Compliance Docket, according to EPA officials, the agency has little to no enforceable oversight authority under Section 120 of the cleanup of the majority of these sites because most are not on the NPL. Of the 985 current hazardous release DOD sites, EPA has oversight authority of the 140 DOD sites on the NPL; 11 of these NPL sites do not have IAGs in place that CERCLA Section 120 requires to guide cleanup activity, DOD choosing instead to conduct cleanup with minimal, if any, EPA oversight. The remaining 845 DOD sites are overseen by other cleanup authorities—primarily the states—or required no further action under CERCLA following assessment. Therefore, state agencies or another regulatory authority, rather than EPA, oversee the cleanup of hazardous substance releases at most contaminated DOD sites. Most states have their own cleanup programs to address hazardous waste sites and RCRA corrective action authority to clean up RCRA sites. While EPA regions have some oversight of states' RCRA programs by reviewing site files and providing technical advice to states, EPA defers oversight authority to states for the cleanup of individual RCRA sites. Our review of 389 non-NPL DOD sites at four EPA regions showed that for more than one-half of these sites, EPA generally did not propose to list these sites because it determined that the condition of the sites did not satisfy the criteria to score a high Hazard Ranking System (HRS) score—that is, little to no hazardous release or the potential for a hazardous release was found—or because it deferred the sites to another cleanup program, most often RCRA. EPA regional officials were unable to provide documentation for

the agency's decision not to list the remaining sites we reviewed, however, because original site file records were missing or inconclusive. EPA has IAGs with DOD in place for most of its NPL sites—129 of the 140 DOD sites on the NPL. According to an EPA headquarters official, EPA is generally satisfied with the cleanup of DOD NPL sites where there is an IAG. However, the remaining 11 sites do not have IAGs because DOD has disagreed with the terms of the provisions contained in the agreements, stating the terms conflict with or go beyond CERCLA or its regulatory requirements. Despite the CERCLA requirement for IAGs at all NPL federal facility sites, CERCLA Section 120 imposes no specific sanctions if a federal agency refuses to enter into an IAG. Although EPA may initiate administrative enforcement actions, in appropriate circumstances, under other laws, such as RCRA and the Safe Drinking Water Act, to compel DOD to clean up contaminated sites, EPA chose not to pursue enforcement actions until 2007, more than 10 years after these sites were listed on the NPL. In its most recent report to Congress in 2007, EPA noted the number of NPL sites with IAGs but did not explain the basis for the 11 DOD sites without IAGs. Later that year, the agency issued administrative enforcement orders under RCRA and the Safe Drinking Water Act against four of these sites. Each order stated that contamination at the respective sites may present an imminent and substantial endangerment to health or the environment and directed DOD to carry out certain cleanup and related actions. In May 2008, DOD sent a memorandum to the Department of Justice (DOJ) asking DOJ to resolve a dispute over EPA's authority to issue the orders. In December 2008, DOJ issued a letter upholding EPA's authority to issue administrative cleanup orders at DOD NPL sites in appropriate circumstances, and to include in IAGs certain provisions other than those specifically enumerated in CERCLA.[5]

Since the mid-1990s, EPA has listed fewer DOD sites on the NPL than in previous years for three key reasons. First, EPA does not generally list DOD sites that are being addressed under other federal or state programs to avoid duplication of remedial actions. Second, DOD and EPA officials

[5]The letter stated that "because an interagency 'agreement' denotes a consensual undertaking, we do not think that DOD necessarily is required to agree to all extra-statutory terms demanded by EPA. We think that EPA nonetheless may require DOD to agree in the IAG to follow, 'in the same manner and to the same extent' as they apply to private parties, any 'guidelines, rules, regulations, and criteria' established by EPA and made applicable to non-federal facilities under CERCLA." The letter also noted that whether the facts identified in each order present a sufficient basis to support EPA's finding of an imminent and substantial endangerment is a factual issue that DOJ was unable to address.

told us that over the years, DOD has discovered fewer hazardous substance releases, making fewer sites available for listing. Fewer sites have been discovered, in part because DOD has been identifying and cleaning up hazardous releases for more than two decades, and because DOD has improved its management of waste generated during its ongoing operations. Finally, in rare instances, EPA did not list some contaminated defense sites due to the objections of other interested parties. For example, although EPA proposed listing five DOD sites between 1994 and 2000, the agency ultimately chose not to complete the listing process for them. At four sites, the states' governors did not support placement of these sites on the NPL. The governors for three of these sites cited the perceived stigma of NPL listing and potential adverse economic effect as the reasons why the state did not support listing. The governor did not support listing the fourth site after it was closed under the Base Realignment and Closure program and DOD began to clean up the site. Although EPA may list sites over the objections of a governor, EPA officials told us they generally do not list federal sites without a governor's concurrence. According to EPA regional officials, EPA did not list the fifth DOD site because DOD objected, and the Office of Management and Budget (OMB) recommended against listing. OMB officials encouraged EPA to defer listing for 6 months to provide DOD with more time to address personnel and contractor changes and demonstrate remediation progress. If after that time, progress was not forthcoming, then listing was to be pursued, but in fact, never was. EPA officials said that cleanup has taken place at all five sites and that it was either unlikely or unclear that the sites would qualify for listing on the NPL based on the current conditions at the sites.

We provided a draft of this report to EPA and DOD for review and comment. In general, EPA agreed with the findings and conclusions of our report and supported our suggestion that Congress consider amending CERCLA to expand the agency's enforcement authority. While EPA stated that such authority would help assure timely and protective cleanup, DOD disagreed stating that EPA has sufficient involvement at NPL sites regardless of whether IAGs are in place and should strive to more effectively implement its authority under existing law. Despite DOD's position that EPA is sufficiently involved at DOD NPL sites without IAGs, EPA disagrees. Statutory requirements provide for independent EPA oversight, not a mere opportunity for EPA review and comment. Therefore, we assert that expanding EPA's enforcement authority is appropriate to ensure that cleanups are being done properly at federal facility NPL sites.

Background

Various environmental statutes, including CERCLA and RCRA, govern the reporting and cleanup of hazardous substances and hazardous waste at DOD sites. Specific provisions in these laws establish requirements for addressing hazardous waste cleanup or management. Key aspects of these requirements for federal facilities are described below:

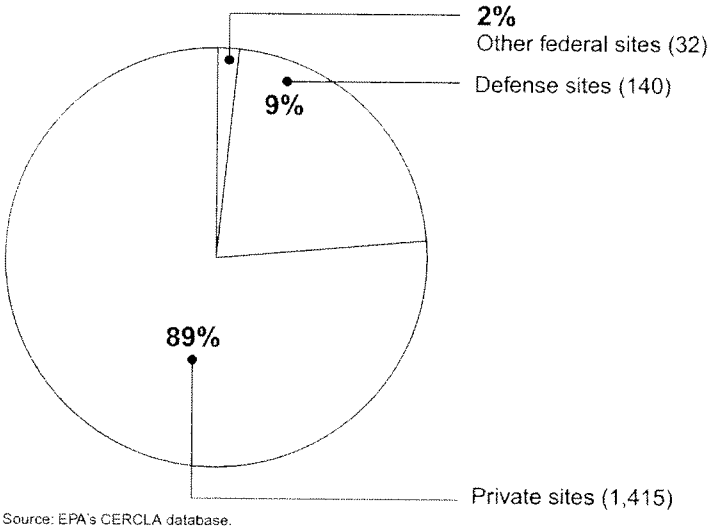
Comprehensive Environmental Response, Compensation, and Liability Act. The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) of 1980 was passed to give the federal government the authority to respond to actual and threatened releases of hazardous substances, pollutants, and contaminants that may endanger public health and the environment. The EPA program under CERCLA is better known as "Superfund" because Congress established a large trust fund that is used to pay for, among other things, remedial actions at nonfederal sites on the NPL.[6] Federal agencies are prohibited from using the Superfund trust fund to finance their cleanups and must, instead, use their own or other appropriations.[7]

Figure 2 depicts the number of NPL sites listed by EPA as of November 2008, which totals 1,587 sites. Of these, 140 were DOD NPL sites, representing the majority of federal facility sites on the NPL. According to EPA's 2007 annual report on Superfund, more than 75 percent of all sites on the NPL—both federal and private—were listed before 1991. Since fiscal year 2000, EPA has added five DOD sites to the NPL.

[6]This trust fund was financed primarily by taxes on crude oil and certain chemicals, as well as an environmental tax assessed on corporations based upon their taxable income. Although the authority for these taxes expired in 1995, the trust fund continued to receive revenue from various other sources, including appropriations from the general fund. EPA receives annual appropriations from the trust fund for program activities; since 1981, Superfund appropriations have totaled over $32 billion in nominal dollars, or about $1.2 billion annually.

[7]GAO, *Superfund: Funding and Reported Costs of Enforcement and Administration Activities*, GAO-08-841R (Washington, D.C.: July 18, 2008).

Figure 2: Private, Federal, and DOD Sites on the NPL



Source: EPA's CERCLA database.

Note: As of November 2008, the total number of federal facilities and private sites on the NPL was 1,587. The 32 other federal NPL sites included 21 Department of Energy sites, 2 Department of Agriculture sites, 1 Federal Aviation Administration site, 1 Coast Guard site, 2 National Aeronautics and Space Administration sites, 1 Small Business Administration site, 2 Department of the Interior sites, 1 Department of Transportation site, and 1 EPA site.

CERCLA does not establish regulatory standards for the cleanup of specific substances, but requires that long-term cleanups comply with applicable or relevant, and appropriate requirements. These may include a host of federal and state standards that generally regulate exposure to contaminants. The National Oil and Hazardous Substances Pollution Contingency Plan (NCP) outlines procedures and standards for implementing the Superfund program. The NCP designates DOD as the lead agency at defense sites, though as described below, it must carry out its responsibilities consistent with EPA's oversight role under Section 120

of CERCLA, including EPA's final authority to select a remedial action if it disagrees with DOD regarding the remedy to be selected.[8]

In 1986, the Superfund Amendments and Reauthorization Act (SARA) added provisions to CERCLA specifically governing the cleanup of federal facilities. Under Section 120 of CERCLA, as amended, EPA must take steps that assure completion of a preliminary site assessment by the responsible agency for each site in the Federal Agency Hazardous Waste Compliance Docket.[9] This preliminary assessment is reviewed by EPA, together with additional information, to determine whether the site poses little or no threat to human health and the environment or requires further investigation or assessment for potential proposal to the NPL. SARA also added Section 211 of CERCLA, which established DOD's Defense Environmental Restoration Program providing legal authority governing cleanup activities at DOD installations and properties.

CERCLA Section 120 also establishes specific requirements governing IAGs between EPA and federal agencies. The contents of the IAGs must include at least the following three items: (1) a review of the alternative remedies considered and the selection of the remedy, known as a remedial action; (2) the schedule for completing the remedial action; and (3) arrangements for long-term operations and maintenance at the site. DOD and EPA are required to enter into an IAG within 180 days of the completion of EPA's review of the remedial investigation and feasibility study at a site.

SARA's legislative history explains that, while the law already established that federal agencies are subject to and must comply with CERCLA, the addition of Section 120 provides the public, states, and EPA increased

[8]Under the NCP, DOD maintains its lead agency responsibilities whether the remedy is selected by DOD for non-NPL sites or by EPA and the federal agency or by EPA alone for NPL sites under CERCLA Section 120. Executive Order 12580, Superfund Implementation (Jan. 23, 1987) as amended delegates certain presidential authorities under CERCLA to the Secretary of Defense. Specifically, the executive order provides that CERCLA response authorities "are delegated to the Secretaries of Defense and Energy, with respect to releases or threatened releases where either the release is on or the sole source of the release is from any facility or vessel under the jurisdiction, custody or control of their departments, respectively, including vessels bare-boat chartered and operated. These functions must be exercised consistent with the requirements of Section 120 of the Act."

[9]Executive Order 12580 delegates to DOD the authority for carrying out preliminary assessments and site inspections at DOD sites. CERCLA imposes no deadlines for completing preliminary assessments.

authority and a greater role in assuring the problems of hazardous substance releases at federal facilities are dealt with by expeditious and appropriate response actions.[10] The relevant congressional conference committee report establishes that IAGs provide a mechanism for (1) EPA to independently evaluate the other federal agency's selected cleanup remedy, and (2) states and citizens to enforce federal agency cleanup obligations, memorialized in IAGs, in court. [11] Specifically, the report states that while EPA and the other federal agency share remedy selection responsibilities, EPA has the additional responsibility to make an independent determination that the selected remedial action is consistent with the NCP and is the most appropriate remedial action for the affected facility. The report also observes that IAGs are enforceable documents just as administrative orders under RCRA and, as such, are subject to SARA's citizen suit and penalties provisions. Thus, penalties can be assessed against federal agencies for violating terms of agreements with EPA.[12] However, at sites without IAGs, EPA has only a limited number of enforcement tools to use in compelling compliance by a recalcitrant agency; similarly, states and citizens also lack a mechanism to enforce CERCLA.

Resource Conservation and Recovery Act. In 1976, Congress passed the Resource Conservation and Recovery Act (RCRA) giving EPA the authority to regulate the generation, transportation, treatment, storage, and disposal of hazardous waste. Under RCRA, EPA may authorize states to carry out many of the functions of the statute in lieu of EPA under a

[10]H.R. Rep. No. 99-253, pt. 1 at 95 (1985).

[11]H.R. Conf. Rep. No. 99-962 at 242 (1986).

[12]In technical comments on our report, DOD asserted that sufficient EPA oversight can occur without an IAG, so long as a signed record of decision exists for a given site. This view is inconsistent with the language in CERCLA Section 120 and the legislative history. First, Section 120 uses the term "interagency agreement," not the term "record of decision" which appears elsewhere in SARA; a reference in Section 120 to IAGs *instead of* records of decision is far more than a semantic accident. Second, as indicated above, the IAG serves to provide a basis for enhanced EPA cleanup oversight as well as enforcement by states and citizens. DOD failed to explain how a record of decision would serve a similar purpose, and in particular failed to address the IAG's role in enhancing state and citizen enforcement activities. While the conference committee report states that a record of decision signed by *both* EPA and the other federal agency can serve as an IAG, H.R. Conf. Rep. No. 99-962 at 242, we read this to mean that the terms of the record of decision may also be used as the terms of the IAG if *both* parties agree and are otherwise consistent with CERCLA. To the extent the conference report can be read to suggest that an IAG is not required at a DOD NPL site with a co-signed record of decision, this reading is inconsistent with the language of the statute, which provides for no such exception.

state's hazardous waste programs and laws. Almost all states are authorized to implement some portion of the RCRA program. Forty-eight states are currently authorized to implement the RCRA base program to manage hazardous waste treatment, storage, and disposal. (Only Alaska and Iowa are not authorized to implement the RCRA base program.) Forty-three states are authorized to implement the RCRA corrective action program which expands a state's RCRA authority to include managing the cleanup of releases of hazardous waste and hazardous constituents.

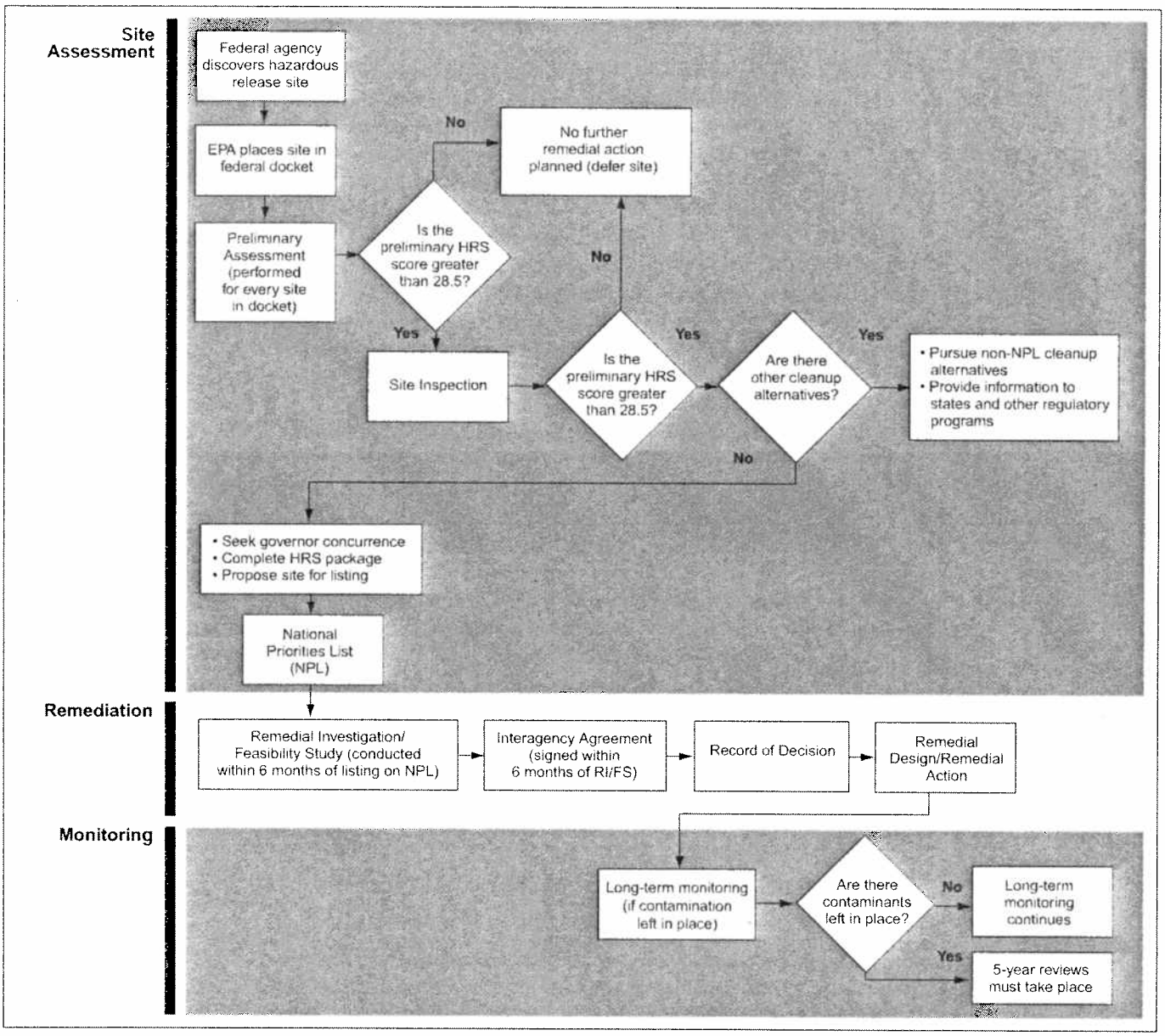
EPA has a policy to defer sites, which are being managed under RCRA, from placement on the NPL, known as the RCRA deferral policy. Where this policy is applied, cleanup proceeds under RCRA, generally through an authorized state corrective action program, rather than CERCLA. EPA regions may defer a federal facility site to RCRA even if the site is eligible for the NPL. In 1996, Congress amended CERCLA to authorize EPA to consider non-CERCLA cleanup authorities when making a listing determination for federal facility sites if the site is already subject to an approved federal or state cleanup plan. According to EPA policy, the criteria to defer a federal facility site from the NPL to RCRA are: (1) the CERCLA site is currently being addressed by RCRA Subtitle C corrective action authorities under an existing enforceable order or permit containing corrective action provisions; (2) the response under RCRA is progressing adequately; and (3) the state and community support deferral of NPL listing. According to EPA, deferral from one program to another is often the most efficient and desirable way to address overlapping requirements, and deferrals to RCRA may free CERCLA oversight resources for use in situations where another authority is unavailable. In these instances, state agencies or another regulatory authority, rather than EPA, oversee the cleanup of hazardous substance releases.

Other non-CERCLA cleanup authorities EPA considers in deciding whether to list a site include state cleanup programs (often referred to as voluntary cleanup programs) and DOD's environmental response program. See appendix II for a summary of these cleanup programs.

The NCP provides the methods and criteria for carrying out site discovery, assessment, and cleanup activities under CERCLA. Figure 3 depicts the process by which EPA and federal agencies assess a site for inclusion on the NPL and address contamination at federal NPL sites.

The CERCLA cleanup process is made up of a series of steps, during which specific activities take place or decisions are made. The key steps in this process are included in figure 3.

Figure 3: Key Stages of the CERCLA Process to Address and Clean Up Hazardous Waste at Federal Facilities



Source: EPA.

Site discovery. When a federal agency identifies an actual or suspected release or threatened release to the environment on a federal site, it notifies EPA, which then lists the site on its Federal Agency Hazardous Waste Compliance Docket. The docket is a listing of all federal facilities that have reported hazardous waste activities under three provisions of RCRA or one provision of CERCLA. RCRA and CERCLA require federal agencies to submit to EPA information on their facilities that generate, transport, store, or dispose of hazardous waste or that have had some type of hazardous substance release or spill. EPA updates the docket periodically.

Docket Reporting Categories

The categories for listing a facility on the docket provide an initial basis for assessing hazardous waste contamination. The four reporting categories are:

- RCRA Section 3005: facilities for which agencies have applied for an EPA permit for hazardous waste treatment, storage, or disposal.
- RCRA Section 3010: facilities where hazardous materials are generated, transported, treated, stored, or disposed.
- RCRA Section 3016: facilities with hazardous waste activities that federal agencies have reported in their inventories.
- CERCLA Section 103: facilities for which agencies have reported any releases or spills of a hazardous substance.

Every 6 months, EPA is also required to publish in the Federal Register a list of the federal facilities that were added to the docket during the preceding 6-month period and notify regions of any actual or threatened hazardous substance release. At about the same time, EPA also lists these sites in its computerized CERCLA information database, an inventory of actual and potential hazardous releases at federal and private sites. As of October 2008, EPA's CERCLA information database listed 12,621 federal and private sites.

Preliminary assessment. The lead agency (DOD, in this case) conducts a preliminary assessment of the site by reviewing existing information, such as facility records, to determine whether hazardous substance contamination is present and poses a potential threat to public health or the environment. EPA regions review preliminary assessments to determine whether the information is sufficient to assess the likelihood of a hazardous substance release, a contamination pathway, and potential receptors. EPA regions are encouraged to complete their review of preliminary assessments of federal facility sites listed in EPA's CERCLA database within 18 months of the date the site was listed on the federal docket. EPA may determine the site does not pose a significant threat to human health or the environment and no further action is required. If the preliminary assessment indicates that a long-term response may be needed, EPA may request that DOD perform a site inspection to gather more detailed information.

Site inspection. The lead agency (DOD, in this case) samples soil, groundwater, surface water, and sediment, as appropriate, and analyzes the results to prepare a report that describes the contaminants at the site, past waste handling practices, migration pathways for contaminants, and receptors at or near the site. EPA reviews the site inspection report and, if it determines the release poses no significant threat, EPA may eliminate it from further consideration. If EPA determines that hazardous substances, pollutants, or contaminants have been released at the site, EPA will use the information collected during the preliminary assessment and site inspection to calculate a preliminary HRS score.

HRS scoring. If EPA determines that a significant hazardous substance release has occurred, the EPA region prepares an HRS scoring package. EPA's HRS assesses the potential of a release to threaten human health or the environment by assigning a value to factors related to the release such as (1) the likelihood that a hazardous release has occurred; (2) the

characteristics of the waste, such as toxicity and the amount; and (3) people or sensitive environments affected by the release.

National Priorities List. If the release scores an HRS score of 28.50 or higher, EPA determines whether to propose the site for placement on the NPL. CERCLA requires EPA to update the NPL at least once a year.

Governor's concurrence. Before placing a site on the NPL, the EPA Regional Administrator sends a written inquiry to the governor seeking a written response from the state addressing whether it will support a listing decision. According to EPA regional officials, EPA usually contacts the governor before calculating the HRS score due to the high cost and length of time required to prepare a scoring package. If EPA calculates an HRS score of 28.50 or higher and the governor agrees with EPA to list the site, the site is eligible for inclusion on the NPL. However, where the governor does not support listing, but the EPA region firmly believes listing is necessary, a process, involving OMB for federal facilities, is followed before a listing decision is made.

Following the decision to place a site on the NPL, several steps lead to the selection of a cleanup remedy and its long-term operation and maintenance. These steps are described below:

Remedial investigation and feasibility study. Within 6 months after EPA places a site on the NPL, the lead agency (DOD, in this case) is required to begin a remedial investigation and feasibility study to assess the nature and extent of the contamination. The remedial investigation and feasibility study process includes the collection of data on site conditions, waste characteristics, and risks to human health and the environment; the development of remedial alternatives; and testing and analysis of alternative cleanup methods to evaluate their potential effectiveness and relative cost. EPA, and frequently the state, provide oversight during the remedial investigation and feasibility study and the development of a proposed plan, which outlines a preferred cleanup alternative. After a public comment period on the proposed plan, EPA and the federal facility sign a record of decision that documents the selected remedial action cleanup objectives, the technologies to be used during cleanup, and the analysis supporting the remedy selection.

Interagency agreement. Within 6 months of EPA's review of DOD's remedial investigation and feasibility study, CERCLA, as amended, requires that DOD enter into an IAG with EPA for the expeditious completion of all remedial action at the facility. (EPA's policy however, is

for federal facilities to enter into an IAG after EPA places the site on the NPL.) The IAG is an enforceable document that must contain, at a minimum, three provisions: (1) a review of remedial alternatives and the selection of the remedy by DOD and EPA, or remedy selection by EPA if agreement is not reached; (2) schedules for completion of each remedy; and (3) arrangements for the long-term operation and maintenance of the facility.

Remedial design and remedial action. During the remedial design and remedial action process, the lead agency (DOD, in this case) develops and implements a permanent remedy on the site as outlined in the record of decision and IAG.

Monitoring. Long-term monitoring occurs at every site following construction of the remedial action. This includes the collection and analysis of data related to chemical, physical, and biological characteristics at the site to determine whether the selected remedy meets CERCLA objectives to protect human health and the environment. For NPL or non-NPL sites where hazardous substances, pollutants, or contaminants were left in place above levels that do not allow for unlimited use and unrestricted exposure, every 5 years following the initiation of the remedy, the lead agency (DOD, in this case) must review its sites. The purpose of a 5-year review, similar to long-term monitoring, is to assure that the remedy continues to meet the requirements contained in the record of decision and is protective of human health and the environment.

DERP

Under the Defense Environmental Restoration Program, DOD must ensure that EPA and appropriate state and local officials have notice and an adequate opportunity to comment on (1) the discovery of releases or threatened releases of hazardous substances at a facility; (2) the extent of the threat to public health and the environment which may be associated with any such release or threatened release; (3) DOD proposals to carry out response actions with respect to any such release or threatened release; and (4) the initiation of any response action with respect to such release or threatened release and the commencement of each distinct phase of such activities. The Defense Environmental Restoration Program does not require DOD to respond to the comments or provide a mechanism for EPA or other officials to compel a response or other action if they believe DOD's proposed activities are inadequate.

Federal Facility Compliance Act. The Federal Facility Compliance Act of 1992, which amended RCRA, authorizes EPA to order the cleanup of contaminated sites by initiating administrative enforcement actions against a federal agency under RCRA, including the imposition of fines and penalties. The act authorizes EPA to initiate administrative enforcement actions against federal agencies in the same manner and under the same circumstances as actions would be initiated against a person.

Enforcement. Several factors hinder the enforcement of cleanup requirements at federal facilities. DOJ has taken the position that EPA may not sue another federal agency to enforce cleanup requirements. EPA may not issue cleanup orders under CERCLA to other federal agencies without DOJ's concurrence. EPA may issue cleanup orders to other federal agencies under RCRA and the Safe Drinking Water Act, but not all RCRA orders can provide for administrative penalties. IAGs also generally contain administrative penalty provisions. Third parties, such as states and

citizens groups, may sue to enforce IAGs and administrative orders under the "citizen suit" and other public participation provisions of CERCLA, RCRA, and Safe Drinking Water Act, but such litigation can be time consuming.[13]

EPA Evaluates All Potentially Contaminated DOD Sites for Listing, but Does Not Oversee Cleanup at Most Hazardous Waste DOD Sites

While EPA oversees and evaluates DOD's preliminary assessments of all DOD sites suspected of having a hazardous release, the agency has little to no oversight of the cleanup of most of these sites because most are not on the NPL. EPA reviews DOD sites to determine whether to propose placement on the NPL. However, only 140 of the 985 current DOD sites with hazardous waste appear on the NPL. EPA and DOD have not finalized IAGs for the remaining 11 sites, which impedes EPA's ability to enforce cleanup, such as approving detailed cleanup schedules and applying administrative penalties. EPA only recently began using enforcement action at DOD NPL sites where an IAG is not in place. State agencies, rather than EPA, oversee the cleanup of hazardous waste at most DOD sites.

EPA Reviews DOD Sites to Determine whether to Propose NPL Listing

DOD performs preliminary assessments of all federal DOD sites on the Federal Agency Hazardous Waste Compliance Docket. EPA regions review the assessments to determine whether releases pose a threat to human health and the environment and if so, whether hazardous substances are being released into the environment. DOD's preliminary assessments are based on readily available and historical data of suspected releases on DOD sites. DOD reports the results of preliminary assessments to EPA, which often requests additional information such as data on site geography, prior activities at the site, and the source and destination of the hazardous release. According to EPA guidance, EPA regions should complete their review of preliminary assessments within 18 months of when the site was listed on the federal docket; however, EPA officials from two regions told us that DOD may take 2 to 3 years to complete a preliminary assessment because EPA does not have an independent authority under CERCLA to enforce a time line for completion of the preliminary assessment. Based on their review of the preliminary assessment, EPA regional officials may determine that no further action is

[13]DOD recently asserted that a state's decision to sue to enforce compliance with a cleanup order could result in the state losing certain DOD grant funds. Recently, an organization of state waste management officials criticized DOD's position as being inconsistent with statutes, such as RCRA, that authorize states to bring such enforcement actions.

needed at the site or request that DOD perform a more comprehensive site inspection by sampling groundwater and other media on site. Following DOD's investigation, EPA regional officials may: determine that no further action is needed at the site; defer the site to another regulatory authority, such as a state agency, for cleanup; or begin the process to propose the site for placement on the NPL.

Few Hazardous Waste DOD Sites Considered for Listing Are Ultimately Placed on the NPL

Of the 985 DOD sites contaminated with hazardous substances, EPA placed 140 sites—about 15 percent—on the NPL; the remaining 845 sites are generally overseen by a cleanup authority other than EPA. Sites on the NPL are considered among the most dangerous of all hazardous substance sites, based on the evaluation criteria used by EPA. EPA may propose to list sites that (1) have an HRS score of 28.50 or higher; (2) a state designates as its top priority, regardless of the HRS score; or (3) are subject to a health advisory issued by the Agency for Toxic Substances and Disease Registry and meet certain other criteria.[14] In practice, however, few sites meet these criteria. Further, even if a site is eligible for placement on the NPL based on the HRS score, EPA may choose to defer the site to RCRA. As we discuss later in this report, our review of non-NPL DOD sites in four EPA regions demonstrated that available data supporting these decisions is limited. EPA regional officials were unable to provide a rationale for EPA's decision to not list almost one-half of the 389 sites that we reviewed because site file documentation was inconclusive or missing. For the remaining sites, EPA did not propose listing because officials determined the sites did not satisfy the criteria to score a high HRS score or deferred them to another regulatory authority.

More than a Decade after Listing, 11 DOD NPL Sites Do Not Have IAGs, Impeding EPA's Ability to Enforce Cleanup Actions at Those Sites

Although EPA has IAGs in place with DOD for 129 of the 140 DOD sites on the NPL, IAGs have not been finalized at the remaining 11 sites remaining. According to an EPA headquarters official, EPA is generally satisfied with the cleanup of DOD NPL sites where DOD has signed IAGs. EPA has encountered few problems at these sites, the EPA official said, because DOD is held accountable for compliance with the provisions of the IAGs and if differences arise, the agreements provide EPA with an enforceable

[14]The Agency for Toxic Substances and Disease Registry, part of the Department of Health and Human Services, performs specific functions concerning the effect on public health of hazardous substances in the environment such as public health assessments of waste sites, response to emergency releases of hazardous substances, and education and training concerning hazardous substances.

process to address the issue. EPA and DOD have not finalized IAGs for the remaining 11 DOD NPL sites, however. As a result, DOD has been cleaning up 11 sites without IAGs, inhibiting EPA's ability to seek enforcement actions that compel attention to schedules and milestones. Under CERCLA, as amended, EPA and DOD must enter into negotiated IAGs for the expeditious completion of all necessary remedial action at each DOD site on the NPL. IAGs must include, at a minimum, the alternative remedies and the selected remedy, a schedule for completing the remedial action, and arrangements for long-term operation and maintenance of the facility. According to EPA, the schedule is enforceable and often found in a site management plan that documents and provides for re-evaluation of schedules and priorities for cleanup. In addition, EPA officials indicated that IAGs generally also include consultative provisions that document time frames for review and comment on documents by each agency as well as administrative penalties for DOD's failure to comply with the agreed-upon cleanup tasks and milestones. The IAG therefore documents EPA's expectations of DOD, and provides for administrative penalties against the department when it does not comply with the activities agreed to in the document. Without the IAG, EPA does not have the needed criteria, or a foundation upon which an enforcement action may be taken, and has limited ability to sanction DOD without going to court, which DOJ does not allow it to do. The 11 DOD NPL sites—2 Army, 2 Navy, and 7 Air Force facilities—were placed on the NPL at least a decade ago, between 1994 and 1999, except for 1 of the Air Force sites, which was listed in 1983.[15] As of early March 2009, however, DOD has not finalized IAGs for

[15]The 11 DOD NPL sites without IAGs include (1) Air Force Plant 44, Arizona; (2) Andrews Air Force Base, Maryland; (3) Brandywine Defense Reutilization and Marketing Office Salvage Yard, Maryland; (4) Fort Meade, Maryland; (5) Hanscom Field, Massachusetts; (6) Langley Air Force Base, Virginia; (7) McGuire Air Force Base, New Jersey; (8) Naval Air Station Whiting Field, Florida; (9) Naval Computer Telecommunication Area Administrative Master Station, Hawaii; (10) Redstone Arsenal, Alabama; and (11) Tyndall Air Force Base, Florida. A twelfth NPL site, Middlesex Sampling Plant, New Jersey, also does not have an IAG. Middlesex is listed in EPA's CERLCA information database as a Department of Energy site even though the Fiscal Year 1998 Energy and Water Appropriations Bill transferred management of the site to the Army Corps of Engineers. While EPA officials said that the agency considers Middlesex to be a DOD NPL site for the purposes of enforcement and negotiation of IAGs, we excluded it from our list of DOD sites without IAGs.

any of these sites.[16] In its most recent report to Congress for fiscal year 2007, EPA indicated the number of NPL sites with IAGs and facilities where EPA had issued enforcement orders. However, EPA's report did not clearly indicate that there were 11 DOD NPL sites without IAGs and the reasons why.

There is a long history of EPA and DOD efforts to negotiate IAGs, beginning in 1988. Key actions taken by these agencies are listed in table 1.

Table 1: Chronology of Events to Negotiate IAGs for DOD NPL Sites

Date	Event
1987–1988	Following the passage of SARA in 1986, DOD finalized IAGs with EPA at 4 NPL sites.
June 1988	To facilitate negotiation of additional IAGs, EPA and DOD approved a model agreement that included: • Standard language for 11 provisions—such as dispute resolution, enforcement, and stipulated penalties—to address fines for failure to submit certain documents or comply with the terms and conditions of the agreement. • A list of 27 other provisions—such as remedial action, site access, and transfer of property—where the specific terms were left to be negotiated for each site.
1989–1998	One hundred-three DOD NPL sites finalized IAGs with EPA.
February 1999	EPA and DOD agreed to modify the model agreement in light of changes to DOD's budget and increasing costs of operations to include: • Modified provisions for deadlines (near-term milestones) and funding. • New provisions for a site management plan, budget development, and scheduling.
1999–2003	Twelve DOD NPL sites finalized IAGs with EPA.

[16]On Mar. 4, 2009, the Navy began the process for finalizing IAGs at two of its sites. The Navy signed IAGs for the Naval Air Station Whiting Field in Florida and the Naval Computer Telecommunication Area Administrative Master Station in Hawaii. Since EPA has also signed the IAGs, the next steps will be to obtain the states' signatures followed by a public comment period and EPA final review. At the conclusion of this process, the IAGs will be considered effective.

Date	Event
October 2003	EPA and DOD agreed to the following: • Modified the model agreement to add provisions for institutional and engineering controls to ensure that contaminants do not pose an unacceptable risk to human health or the environment at sites where contamination is left in place. • Established a "dual-track" approach whereby EPA and DOD allow the military services to negotiate land use control provisions for sites with EPA following one of two approaches[a]
2004–2008	Ten DOD NPL sites finalized IAGs with EPA.
July–November 2007	EPA issued administrative cleanup orders to four DOD NPL sites that did not have IAGs.
December 2007	While the military services were allowed to continue to negotiate IAGs with EPA, the Office of the Secretary of Defense directed that they must follow the model agreement, and any additional provisions added to the IAG must first be approved by OSD and the other services. Further, any changes to the provisions of the model IAG would be allowed only through negotiations between OSD and EPA.
May 2008	DOD asked DOJ and OMB to resolve a dispute between DOD and EPA over the terms of the IAGs and the circumstances under which EPA may issue administrative orders.
December 2008	DOJ issued a letter upholding EPA's authority to issue administrative cleanup orders at DOD NPL sites in appropriate circumstances, and to include in IAGs certain provisions other than those specifically enumerated in CERCLA.
January 2009	Eleven DOD NPL sites do not have IAGs.
February 2009	The Deputy Under Secretary of Defense notifies EPA that DOD is willing to accept the latest IAG for Fort Eustis in Virginia as the new model for the remaining DOD NPL sites without IAGs and instructs the military services to begin negotiations with EPA.
March 2009	On March 4, the Navy signed IAGs for the Naval Air Station Whiting Field in Florida and the Naval Computer Telecommunication Area Administrative Master Station in Hawaii. Since EPA also signed these IAGs, the next steps required before the agreements are effective include acquiring the states' signatures and completing a public comment period and EPA review.

Source: DOD and GAO's analysis of relevant documents and interviews with agency personnel.

[a]The dual-track approach is a set of two principles for negotiating land use control provisions. Based on Navy and Air Force principles, the Navy's approach was to negotiate terms beyond the model agreement while the Air Force's approach was to add language to a record of decision without changing the language of the provision in the agreement.

Although CERCLA requires that federal agencies enter into IAGs with EPA to govern the cleanup of NPL sites within 180 days of EPA's review of the remedial investigation and feasibility study, DOD officials told us they have not finalized IAGs for 11 NPL sites because DOD disagreed with some of the terms of the provisions contained in the agreements. DOD also indicated they feel that EPA has adequate authority through its

remedy selection process and that the IAG serves primarily as an administrative roadmap.[17] Although the Defense Environmental Restoration Program statute requires DOD to take actions that provide EPA with adequate opportunity to review and comment at key phases of cleanup, there are no formal ramifications when DOD does not comply. Without an IAG, EPA lacks a documentation roadmap that demonstrates review and comment on key decisions. An IAG would identify areas of concern at a site and the process being used to address them. At DOD NPL sites without IAGs, such as at Langley Air Force Base in Maryland, DOD did not obtain EPA concurrence before signing a unilateral record of decision that identifies the remedial action. As a result, according to EPA, the agency cannot confirm whether all areas of contamination have been identified or whether they are being addressed properly. In 1988 and supplemented in 1999 and 2003, DOD and EPA developed model language for specific provisions representing the most contentious issues encountered in earlier negotiations. Although DOD agreed to the model language, it has disagreed with some of the specific terms contained in the provisions of agreements based on these models, such as those that, in DOD's opinion, conflict with or go beyond CERCLA or its regulatory requirements. DOD officials also stated that EPA has been unwilling to negotiate the terms of these provisions with DOD.

Although EPA has some oversight of the cleanup of NPL sites where DOD has not entered into an IAG, EPA officials told us the agency has only limited ability to carry out cleanup enforcement actions at federal facilities. For example, at sites where DOD has entered into an IAG, EPA has the authority to approve and modify a sites' sampling plan. In contrast, at NPL sites without an IAG, although DOD may send copies of draft plans and reports to EPA, it is often without regard to schedule or a process for vetting issues back and forth as defined in IAG provisions. Therefore, EPA's role is limited to reviewing many plans after they are finalized without the opportunity to provide input to the cleanup process. According to EPA headquarters officials, EPA is not seeking excessive enforcement authority at DOD NPL sites but intends to hold DOD to the same enforceable oversight it has at private sites. In fact, federal agencies are more often subject to much less stringent enforcement provisions. DOJ has taken the position that EPA may not sue another federal agency

[17]As discussed in the background section of this report, SARA's legislative history suggests that IAGs serve primarily as a tool for EPA oversight and as the primary cleanup enforcement mechanism at DOD NPL sites.

to enforce cleanup requirements, which effectively restricts EPA's ability to compel compliance through civil judicial litigation. According to EPA, enforcement provisions contained in the agreements, such as stipulated penalties, are generally less onerous for federal facilities than they are for private parties. The terms of the provisions, regardless of whether they are based on model language agreed upon between DOD and EPA, are necessary for EPA to carry out its role to enforce the cleanup process, EPA officials said. The IAG is not simply an administrative document but an essential tool, without which EPA and the states cannot assure the public that DOD is properly identifying and addressing hazardous waste at contaminated DOD sites.[18]

EPA Only Recently Used Enforcement Action at DOD NPL Sites Without IAGs

Although EPA may initiate enforcement actions to compel the cleanup of contaminated sites, EPA only recently began to use this authority at DOD NPL sites without IAGs. In 2007, EPA issued four administrative cleanup orders—three under RCRA and one under the Safe Drinking Water Act[19]—to four DOD NPL sites—Tyndall Air Force Base in Florida, McGuire Air Force Base in New Jersey, Air Force Plant 44 in Arizona, and Fort Meade in Maryland—that do not have IAGs. The orders stated that an imminent and substantial endangerment from contamination may be present on the sites and required DOD to notify EPA of its intent to comply with the orders and clean up. The Air Force did not agree with EPA's assertion that an imminent and substantial endangerment existed at Air Force Plant 44, but agreed to perform the work required by the order. At the remaining two Air Force sites and one Army site, the services disagreed with EPA's assertion that an imminent and substantial endangerment existed and indicated that the failure to enter into an IAG at the site was an inappropriate basis for issuing an order. The Air Force also argued that compliance with the orders would not accelerate study and cleanup but, rather, that the additional paperwork required for compliance would delay implementation of ongoing investigation and cleanup. The Air Force and Army did not notify EPA of their intent to comply with the orders within the time frame required and stated they would continue to clean up these sites under their CERCLA removal and lead agency authority. According to

[18]This view is consistent with the portions of SARA's legislative history that discuss the IAG provision.

[19]The Safe Drinking Water Act and its amendments established standards and treatment requirements for the nation's drinking water supply and delegated primary implementation and enforcement authority to the states.

DOD, some of these sites are nearly cleaned up. For example, as of July 2008, DOD estimated that three of the four sites had cleaned up about two-thirds or more of the contamination on site. According to EPA headquarters officials, DOD's estimation of the cleanup at these sites is inconsistent with EPA's assessment and there is still much work to be performed at each of these sites. For example, according to EPA headquarters officials, Tyndall Air Force Base has not completed a single record of decision for work to be performed and McGuire Air Force Base has not completed a single investigation.

In May 2008, DOD requested that DOJ and OMB resolve the disagreement between DOD and EPA as to the basis upon which EPA may issue imminent and substantial endangerment orders under RCRA and the Safe Drinking Water Act, and the terms of federal facility agreements regarding cleanup at DOD NPL sites. As of November 2008, OMB was noncommittal regarding its involvement. On December 1, 2008, DOJ issued a letter upholding EPA's authority to issue administrative cleanup orders at DOD NPL sites in appropriate circumstances. Specifically, the letter stated, among other things, that

- EPA may issue imminent and substantial endangerment orders to DOD in accordance with RCRA and the Safe Drinking Water Act;
- EPA may issue such orders at a site even if it would not have done so had there been an IAG under CERCLA for the site; and
- while IAGs are consensual undertakings, and DOD is not necessarily required to agree to all IAG terms EPA seeks beyond those enumerated in CERCLA, EPA may require DOD to agree in an IAG to follow EPA guidelines, rules, and criteria in the same manner, and to the same extent as these apply to private parties.[20]

[20]The letter is available at http://www.fedcenter.gov/_kd/go.cfm?destination=ShowItem&Item_ID=11085. DOD has also asked OMB to review the terms of the IAGs regarding cleanup at these sites. An executive order provision implementing CERCLA Section 120 directs OMB to facilitate resolution of disputes between EPA and DOD; Executive Order 12580, § 10(a). As of November 2008, OMB has been noncommittal regarding its role with DOD and EPA.

As of early March 2009, the Air Force and Army did not have IAGs for these four sites, including the site being cleaned up under the Safe Drinking Water Act order. [21]

State Agencies Oversee the Cleanup of Hazardous Waste at Most DOD Sites

Because the majority of contaminated DOD sites are not on the NPL, most DOD site cleanups are overseen by state agencies rather than EPA, as allowed by CERCLA. CERCLA provides that state cleanup and enforcement laws apply to federal facilities not included on the NPL. Under CERCLA, EPA may choose to defer a federal facility site to another cleanup authority, such as RCRA, even though the site is eligible for placement on the NPL. Of the 845 DOD sites not on the NPL, EPA generally determined that no further action was needed at the sites either because (1) the sites did not have hazards that would score high enough for NPL listing or (2) EPA deferred oversight of DOD's response at the sites to the states or other regulatory authorities. Most states have their own cleanup programs to address hazardous waste sites and RCRA corrective action authority to clean up RCRA sites. While EPA regions have some oversight of states' RCRA programs by reviewing site files and providing technical advice to the state, EPA defers oversight authority to states for the cleanup of non-NPL RCRA sites. EPA does not exercise day-to-day oversight of state cleanup programs but has entered into memorandums of understanding or agreement with some states. For example, EPA and the state of Ohio entered into a memorandum of agreement that defined the roles and responsibilities of EPA and the state for non-RCRA cleanups.

[21]On Dec. 12, 2008—almost 1 year after the effective date of the administrative order—the Army submitted to EPA its notice to comply with the order at Fort Meade, Maryland. On Dec. 23, 2008, the State of Maryland filed suit against the Army seeking to compel the Army's compliance with EPA's administrative order at Fort Meade.

EPA Proposes Few Contaminated DOD Sites Based on EPA Policy and DOD's Maturing Inventory of Hazardous Waste Sites

Since the 1990s, EPA has proposed fewer DOD sites for the NPL than in previous years for three key reasons. First, EPA defers the majority of DOD sites to other statutory authorities for cleanup under state oversight, and to avoid duplicating efforts, it does not list these sites. Second, over the years, DOD has discovered fewer hazardous substance releases, resulting in fewer sites for assessment and potential proposal for the NPL. Third, state officials or other federal agencies may, on occasion, object to EPA's proposal to list contaminated DOD sites, and while EPA can still propose listing the site, it usually does not. Based on our review of 389 unlisted DOD sites from four EPA regions, we found EPA did not list about half of these sites because EPA determined that little to no hazardous release had occurred or it deferred the site to a state for oversight, often because a contamination response was already underway.

EPA Does Not List DOD Sites That Are Cleaned Up under RCRA or Other Programs

In 1996, Congress amended CERCLA to specify that a response under another cleanup authority is an appropriate factor to consider when making a determination whether to list a federal site.[22] Since then, EPA has generally not proposed listing contaminated DOD sites that are being cleaned up under other federal or state programs. Under EPA's deferral policy, it may choose to defer sites to RCRA, even if sites are eligible for the NPL, where (1) the CERCLA site is currently being addressed by RCRA Subtitle C corrective action authorities under an existing enforceable order or permit containing corrective action provisions, (2) the response is progressing adequately, and (3) the state supports deferral of placement on the NPL. According to EPA headquarters officials, during the early years of CERCLA, the Superfund program was the primary means by which EPA assured that contamination at federal facilities was assessed and cleaned up. In recent years, however, other cleanup programs such as RCRA have evolved and matured so that placement on the NPL is just one of several tools available to address contamination. EPA policy allows regions to defer a federal facility site to RCRA even though the site is eligible for the NPL. Officials from two EPA regions said that almost all of the region's DOD sites were being cleaned up under RCRA at the time they were assessed and to avoid adding unnecessary and redundant regulatory oversight, the regions chose to leave them under RCRA for cleanup. EPA regions also defer sites from the NPL that are being cleaned up under a state cleanup program. EPA headquarters officials said that many sites proposed for placement on the NPL were referred to EPA by the states but

[22]Pub. L. No. 104-201, Div. A, Title III, §§ 330, 110 Stat. 2484 (1996).

that, over the years, states developed their own cleanup programs and did not refer as many sites to EPA. As a result, EPA headquarters officials said that EPA is not proposing to list as many sites based on states' referrals.

DOD Is Identifying Fewer Contaminated Sites

DOD is discovering and reporting fewer new or additional hazardous substance releases because, over the years, many potentially contaminated waste sites have been identified and cleaned up and waste management practices have changed. Discovery of new DOD sites has been infrequent, making fewer sites available to EPA for assessment and proposal for inclusion on the NPL. According to Army officials, beginning in the early 1980s, the Army conducted initial assessments to identify potentially contaminated sites. As a result, Army officials said, the Army's installation restoration program inventory is mature and, for the most part, complete. According to a Navy official, during the 1980s and 1990s, the Navy also conducted assessments to identify and catalog the majority of contaminated Navy sites. DOD officials also stated that because of controls placed on the management of hazardous materials and wastes as a result of well-established laws, there are relatively fewer releases or threats of release, and operational releases are immediately addressed. EPA officials generally agreed that DOD has identified fewer contaminated DOD sites in recent years because, EPA officials said, the services have a fairly well-inventoried universe of sites, and old or abandoned DOD sites are no longer being discovered. Further, EPA headquarters officials said, DOD has cleaned up hazardous waste sites over the years, has tremendous cleanup efforts underway, and has the budgets to fund them.

States May Object to EPA's Proposal to List Contaminated DOD Sites

EPA policy recommends states' governors to be included in the decision whether to list sites on the NPL and, in cases where a state does not agree that EPA should list a site, EPA's policy recommends that a region work closely with the state to resolve the state's concerns. If the region is unable to resolve the state's concerns and EPA believes it has sufficient reasons to proceed with listing, EPA may list the site on the NPL without the state's concurrence; however, according to EPA headquarters officials, EPA will not list a site without agreement from the state.[23]

[23]According to EPA officials, in the history of the Superfund program, EPA has not listed any site without a state's concurrence. In 1998, EPA proposed listing Fox River in Wisconsin, a private site, without the governor's consent. However, EPA did not finalize the listing because the state and EPA reached an agreement after which cleanup began in 2000.

On rare occasions, EPA proposed but ultimately did not list some contaminated DOD sites. Four sites were not listed because the states' governors did not support listing. EPA did not list a fifth site because OMB recommended against listing. Although these five sites were not listed, EPA regional officials said that all five sites are being cleaned up, have a remedy in place that is protective of human health and the environment, or the site has been cleaned up to the point that it no longer meets the requirements for placement on the NPL. Specifically:

Rickenbacker Air National Guard Base. In 1994, DOD closed the remaining portions of the Rickenbacker Air National Guard Base in Lockbourne, Ohio, which had been in use since 1942 providing aircraft refueling operations. Fuel contamination and chemical releases were found around underground fuel lines and tanks and near former storage areas and buildings. Trichloroethylene (TCE) has been found in soil and near groundwater.[24] In January 1994, EPA proposed placing the site on the NPL but did not do so because the governor did not agree, citing the stigma that NPL listing would have on current, planned, and future economic development as well as the potential to adversely affect the economic development of adjacent sites. The governor also proposed that the Ohio EPA oversee investigation and cleanup activities at the site under the state's cleanup program. Today, portions of the site are being cleaned up under RCRA while other portions are being cleaned up under CERCLA and DOD's Base Realignment and Closure program, with state oversight. According to EPA headquarters officials, EPA and the Air Force agreed the site should be cleaned up for commercial-industrial use. The Air Force transferred portions of the facility to another state agency for cleanup and signed an agreement with the state to clean up the remaining lands, in accordance with CERCLA. However, the Air Force has refused to include land use restrictions in its selected remedy, as EPA would normally do for sites on the NPL. Nonetheless, cleanup at the site is proceeding, EPA regional officials said, and the site no longer meets the requirements for the NPL.

Air Force Plant 85. Air Force Plant 85 in Columbus, Ohio, manufactured and tested aircraft and missile systems between 1941 and 1994. Wastes produced from these operations included acids from metal cleaning and

[24]TCE is a nonflammable, colorless liquid used mainly as a solvent to remove grease from metal but which also is found in adhesives, paint removers, typewriter correction fluids, and spot removers. TCE can cause nervous system effects, liver and lung damage, abnormal heartbeat, coma, and possibly death.

electroplating, cyanide wastes, and paint strippers. From 1984 to 1990, the Air Force identified multiple sources of potential hazardous waste contamination, including two nearby streams and a creek. TCE and other chlorinated solvents were found in groundwater; polychlorinated biphenyls (PCB),[25] solvents, and metals were found in soil; and various metals and solvents were found in sediment. In January 1994, EPA proposed placing the site on the NPL but did not do so because the governor objected, again citing the stigma of listing and its potential effects on economic development. The governor also proposed that the Ohio EPA oversee investigation and cleanup activities at the site under the state's cleanup program. Air Force Plant 85 is being cleaned up under Ohio's Voluntary Cleanup Program which, according to EPA officials, follows the CERCLA process. According to EPA regional and Air Force officials, the Air Force has cleaned up or has a remedy in place at 11 of the 13 sources of hazardous substances releases at the site and is expected to have all remedies in place by 2011.

Arnold Engineering Development Center. The Arnold Engineering Development Center near Tullahoma and Manchester, Tennessee, is an Air Force test and research organization that simulates flight conditions in ground-test facilities. The site contains contaminated landfills, leaching pits, and testing areas. Jet and rocket fuels, solvents, and other shop wastes have been detected in the main testing area. PCBs also have been detected in soil samples collected in the main testing area and in wastewater and surface water runoff in a retention reservoir. In August 1994, EPA proposed placing the site on the NPL but did not do so because the governor did not concur. EPA regional officials said that state officials told them Tennessee preferred to clean up the site under a state cleanup program and speculated that many states may prefer this arrangement because of the perception of a stigma associated the NPL. Further, the Arnold Engineering Development Center was competing with a DOD facility in another state to install a wind tunnel and the Tennessee governor's office was concerned that NPL listing would hurt the site's chances. The Air Force is cleaning up the Arnold Engineering Development Center under RCRA with EPA and state oversight. EPA regional officials said that Air Force actions to date on the site are

[25]PCBs are a family of chemicals that were used in hundreds of industrial and commercial applications such as electric and hydraulic equipment; as plasticizers in paints, plastics, and rubber products; and in pigments and dyes. PCBs were banned in 1979 and have been demonstrated to cause cancer and effect human immune, reproductive, and nervous systems.

protective of human health and control the migration of contaminated groundwater. While Air Force officials said they expect all remedies to be in place by the end of fiscal year 2011, EPA regional officials indicated the goal for final construction of the remedy is 2020.[26]

Wurtsmith Air Force Base. Wurtsmith Air Force Base, a 5,000-acre site near Oscoda, Michigan, has performed various air support missions since it was established in the early 1920s, such as aircraft and vehicle maintenance and air refueling. In 1977, the Air Force sampled drinking water and monitoring wells on the site and found solvents, including TCE. The U.S. Geological Survey also sampled and found TCE in the groundwater. The base closed in June 1993 and in January 1994, EPA proposed placing the site on the NPL. However, EPA did not list the site because the state did not support listing after DOD placed the site in the Base Realignment and Closure program and progressed with cleanup under state oversight. Although TCE is still present in groundwater plumes, EPA regional officials said the site has been cleaned up to the point that it would no longer meet the requirements for the NPL.

Chanute Air Force Base. Chanute Air Force Base in Rantoul, Illinois, provided military and technical training for Air Force and civilian personnel on the operation and maintenance of military aircraft and ground support equipment until DOD closed the base in 1990. The primary sources of hazardous waste on the site include various landfills, fire training areas and buildings that contained oil-water separators, underground storage tanks, and sludge pits. The primary concern was the potential for this contamination to migrate into a nearby creek. In April 2000, the governor wrote to the EPA region to express his support for placing Chanute Air Force Base on the NPL, citing the state's concern about past operation and disposal practices at the site and because the state was unable to reach an agreement with the Air Force on how the site should be cleaned up. In December 2000, EPA proposed placing the site on the NPL but the Air Force objected, citing a perception that listing was a stigma and argued it could clean up the site by 2005 and on schedule if it

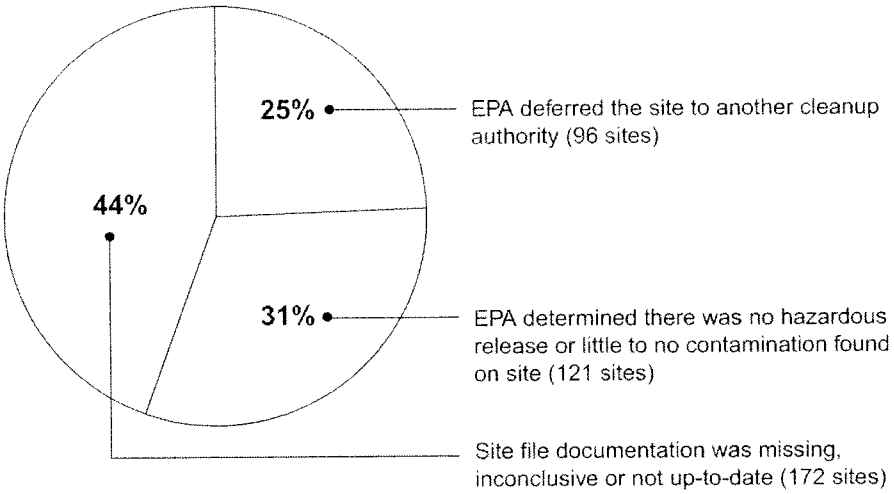
[26]DOD and EPA use different terminology to track cleanup status. DOD tracks the status of cleanup in terms of a "remedy in place" (where the selected remedy is in place and operating) followed by "response complete" (where the required remedial action or operations have been completed.) EPA tracks final construction, or "construction complete," which considers when all physical construction at a site is complete, all immediate threats have been addressed, and all long-term threats are under control. While long-term cleanup actions may still be operating, the site is often ready for another use.

did not have to suspend cleanup to negotiate the provisions of an IAG. The Air Force asked OMB to mediate the dispute. EPA presented its case for listing the site to OMB, pointing out that the site's HRS score supported a proposal for listing, the governor of the state concurred, and listing would help to assure that DOD would enter into an IAG with EPA to clean up. In 2003, OMB determined that EPA should not proceed with listing. OMB encouraged EPA to defer listing the site for 6 months to provide DOD with time to address personnel and contractor changes and demonstrate remediation progress. If, after that time, progress was not forthcoming, then listing was to be pursued, but in fact, never was. Although EPA officials told us that cleanup at Chanute has progressed slowly, milestones were met and EPA did not list the site. The Air Force estimates that it will have all remedies in place by the end of fiscal year 2012 and all property transferred from Air Force control by the end of fiscal year 2014. Although cleanup is behind schedule, according to EPA regional officials, the site has been cleaned up to the point that it is unclear whether the site would score for the NPL if the listing process was started today. For example, three of the four landfills have been capped and are no longer active. Remedial investigation reports of the creek do not show the levels of contamination detected when EPA proposed listing the site. Despite the slow progress to clean up, EPA regional officials said they believe that proposing the site for listing ultimately helped to start the cleanup process.

Four EPA Regions Did not List Sites Due to a Lack of Contamination or Hazardous Release or Because Sites Were Deferred to Another Cleanup Authority

As part of our review, we asked officials from four EPA regions to provide the primary basis for their decision to not propose placing 389 DOD sites under their jurisdiction on the NPL. (See fig. 4.) Based on a review of site records and interviews with EPA regional officials, we found EPA did not propose listing almost one-third of these sites (121 of 389, or 31 percent) because site assessments found little to no contamination or hazardous release on the site or no contamination exposure pathway or receptor. In instances where EPA scored these sites, the HRS score was below the minimum hazard ranking threshold for the NPL. One-quarter of these sites (96 of 389, or 25 percent) were not proposed for the NPL because EPA deferred them to another authority, such as a state agency under its RCRA authority. We were unable to determine the rationale for EPA's decision to not list less than half of these sites (172 of 389, or 44 percent) because site file records were missing, inconclusive, or not up to date. For example, some site files showed that EPA had not yet determined whether to propose listing, even though the site assessment was conducted decades ago. According to EPA region officials, record-keeping practices have varied over the years so that, in some cases, site files and the basis for EPA's decisions were not well documented or maintained.

Figure 4: Findings from GAO's Review of 389 DOD Sites



Source: GAO analysis.

Conclusions

While the number of DOD sites considered for placement on the NPL has declined over the past decade, DOD sites still account for 9 percent of all NPL sites. Despite years of negotiations, DOD and EPA have not finalized IAGs to clean up 11 of the 140 DOD NPL sites. Most are more than a decade overdue, yet EPA has made few efforts to use its enforcement authority under CERCLA to compel parties to enter into IAGs, and to select remedies at sites without agreements. While the Federal Facility Compliance Act authorizes EPA to apply the same RCRA enforcement policies to federal facilities as it does to nonfederal facilities, EPA has not taken enforcement action at most federal sites. In light of prolonged disagreements between DOD and EPA over the terms of the IAGs, and the absence of any statutory consequences for failing to enter into an IAG, now may be the time to reconsider the provisions required by CERCLA for effective EPA oversight. While the law offers accountability through citizen suits, transparency through public participation provisions, legal recourse through enforceable schedules, and mechanisms for addressing conflicts through dispute resolution provisions, at sites without IAGs EPA lacks the leverage needed to provide strong environmental stewardship. Bringing the parties together for further discussions with relevant oversight committees may facilitate resolution at the sites without IAGs. While the pattern of delays in DOD's preliminary assessment process appeared to go unchallenged by EPA, we believe EPA's failure to enforce a time line for completion further exacerbated this process. These

conditions suggest a need for stronger enforcement and reporting as well as a serious commitment to address ongoing challenges.

We believe Congress should be kept apprised of the situations where agreements are lacking. However, EPA has not used its annual report to Congress to provide this information.[27] Moreover, because EPA was unable to make available documentation of the basis for its decisions whether to list or not list DOD sites, it is impossible for EPA to provide a justification for its decisions for many of the sites placed on or left off of the NPL.

Matter for Congressional Consideration

Given the critical nature of Superfund cleanup for protecting public health, and the long-term commitment necessary to maintain strong environmental stewardship at federal facilities, we encourage Congress to ensure accountability by DOD and EPA by raising concerns about the impasse between these federal agencies, if IAGS are not finalized within 60 days following issuance of this report. Specifically, Congress should consider amending CERCLA Section 120 to authorize EPA to impose administrative penalties at federal facilities placed on the NPL that lack IAGs within the CERCLA-imposed deadline of 6 months after completion of the remedial investigation and feasibility study. This leverage could help EPA better satisfy its statutory responsibilities with agencies that are unwilling to enter into agreements where required under CERCLA Section 120. In addition, Congress may wish to consider amending Section 120 to authorize EPA to require agencies to complete preliminary assessments within specified time frames.

Recommendations for Executive Action

To facilitate congressional oversight of the Superfund program and provide greater transparency to the public on the cleanup of DOD sites, we recommend that the Administrator of EPA improve its record keeping in the following manner. Consistent with good management practices defined in EPA's Superfund program implementation manual and to ensure that meaningful data are available for the agency's reports to Congress, EPA should establish a record-keeping system, consistent across all regions, to accurately document EPA decisions regarding the

[27]Although a CERCLA requirement for reporting IAG status information was repealed in 2002, DOD reports on the status of NPL sites without IAGs in its annual report to Congress on the Defense Environmental Restoration Program. DOD's report provides a list of the DOD sites without IAGs; it does not provide information on the reasons why IAGs have not been finalized.

proposal of DOD sites for inclusion or exclusion on the NPL and the basis for each decision.

Agency Comments and Our Evaluation

We provided a draft of this report to EPA and DOD for review and comment. In its letter, EPA agreed with our recommendation that Congress should provide greater enforcement authority under CERCLA to impose administrative penalties at federal facilities placed on the NPL, stating that greater authority would help to assure timely and protective cleanup of NPL sites. EPA did not comment specifically on our recommendation that EPA improve its record keeping but acknowledged that some file data supporting EPA's decisions regarding the proposal of DOD sites for NPL listing are missing or otherwise insufficient. In general, EPA agreed with the findings and conclusions of our report. EPA also provided general comments related to the declining number of DOD sites proposed for listing; specifically, whether state objections and the declining number of newly discovered hazardous substance releases in recent years has caused a reduction in the number of DOD sites proposed. In addition, while EPA agrees with GAO that typical sources of contamination on DOD sites have been fairly well characterized, it adds that other areas have not been evaluated, and there may still be sites with undiscovered sources of contamination, such as military munitions sites. GAO has made changes to the report to respond to these comments. We also addressed EPA's technical changes, throughout the report, as appropriate. See appendix III for EPA's letter.

In its letter commenting on the findings and conclusions of our report, DOD disagreed with our assertion that additional EPA oversight or enforcement authority was needed and, if provided, would help assure that NPL sites are cleaned up. According to DOD, EPA is actively involved in reviewing response actions at DOD NPL sites, regardless of whether an IAG is in place. Further, DOD stated that GAO's report provides no evidence that the lack of an IAG at any DOD NPL site has delayed, diminished, or reduced the timeliness or quality of DOD's response and that EPA does not need additional oversight enforcement authority but, rather, should strive to more effectively implement its authority under existing law.

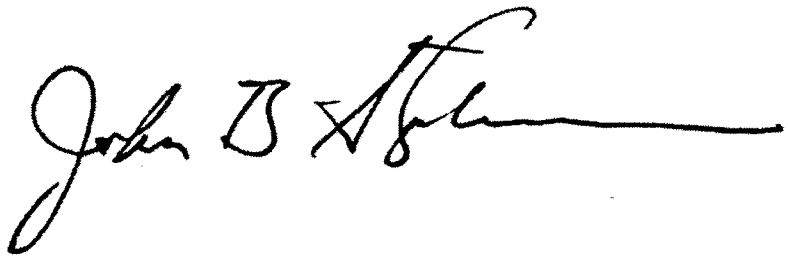
We continue to assert that an expansion in EPA's enforcement authority is warranted. According to recent discussions with EPA officials, the agency cannot confirm whether all areas of contamination have been identified or whether they are being addressed properly at NPL sites without IAGs, particularly where DOD signed unilateral records of decision without EPA

concurrence, such as at Langley Air Force Base in Maryland. Further, we believe our report demonstrates that EPA has experienced considerable difficulty employing its existing enforcement authorities, and that DOD has resisted EPA's decision to use its existing authority to require that DOD enter into IAGs at NPL sites. DOD's comments notwithstanding, the issue is DOD's refusal for more than a decade to enter into IAGs required by CERCLA Section 120 to clean up DOD NPL sites. As EPA officials have noted, without an IAG, the agency does not have the enforcement authority to assure that DOD cleans up according to an agreed-upon remedy. Further, the question is not whether DOD believes that EPA is sufficiently involved at DOD NPL sites, but whether the statutory requirements for EPA's involvement have been satisfied. CERCLA Section 120 provides for independent EPA oversight, not mere opportunity for EPA review and comment. The procedures in Section 120 may not be disregarded simply because some cleanup progress is occurring. As mentioned in our report, Maryland's December 2008 suit against the Army seeking to compel compliance with EPA's administrative order at Fort Meade is evidence that at least one state disagrees with DOD's assertion that the progress of cleanup is unaffected by the lack of an IAG. Therefore, we continue to believe that additional EPA enforcement authority is needed to ensure that cleanup is being pursued properly at federal facility NPL sites.

DOD's letter also provided some technical comments which we incorporated throughout the report along with DOD's technical changes, as appropriate. See appendix IV for DOD's letter.

As agreed with your offices, unless you publicly announce the contents of this report earlier, we plan no further distribution until 30 days from the report date. At that time, we will send copies to the Administrator of EPA, the Secretary of DOD, and interested congressional committees. The report will also be available at no charge on the GAO Web site at http://www.gao.gov.

If you or your staffs have any questions about this report, please contact me at (202) 512-3841 or stephensonj@gao.gov. Contact points for our offices of Congressional Relations and Public Affairs may be found on the last page of this report. GAO staff who made major contributions to this report are listed in appendix V.



John B. Stephenson
Director, Natural Resources
and Environment

Appendix I: Objectives, Scope, and Methodology

We were asked to determine (1) the extent of the Environmental Protection Agency's (EPA) oversight during assessment and cleanup at Department of Defense (DOD) National Priority List (NPL) and non-NPL sites and (2) why EPA has proposed fewer DOD sites for inclusion on the NPL since the early 1990s.

To examine the extent of EPA's oversight during assessment and cleanup of DOD NPL and non-NPL sites, we reviewed the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) and other legislation governing the cleanup of federal hazardous waste sites, as well as EPA Superfund program policy and guidance, to determine the roles and responsibilities of EPA and federal agencies, such as DOD, to implement the CERCLA process and assess and clean up hazardous waste. We reviewed EPA and DOD reports to the Congress on the Superfund and Defense Environmental programs, respectively. We reviewed EPA and DOD policy and guidance on interagency agreements (IAG), including the model agreements, and correspondence relating to the negotiation of IAGs for selected DOD sites. We conducted several interviews with EPA and DOD headquarters officials on issues related to IAGs and enforcement. At GAO's request, EPA provided data from its computerized CERCLA information database of actual and potential hazardous releases at federal and private sites. Based on these data, we worked with EPA to identify the universe of DOD sites and obtain certain information on these sites, such as NPL status. To determine the reliability of the CERCLA information database, an EPA headquarters official contacted each EPA region and asked them to verify selected information, such as the number of DOD sites and their NPL status. During site visits to selected EPA regions, we also confirmed certain information in the CERCLA information database by reviewing site file documentation, where available, and interviewing EPA region officials. Based on this work, we determined that these data were sufficiently reliable for the purposes of this report. We interviewed EPA headquarters officials on the agency's policies and processes under the Superfund program to ensure that contaminated federal DOD sites, both NPL and non-NPL, are assessed and cleaned up. We interviewed DOD headquarters officials on DOD's role and responsibilities to identify, report, assess, and clean up, as necessary, hazardous releases at NPL and non-NPL DOD sites. We also interviewed officials at four EPA regions on their oversight of contaminated federal DOD sites, both NPL and non-NPL, to assure that sites are assessed and cleaned up. We conducted our work at four EPA regions—Atlanta, Chicago, Dallas, and San Francisco—which, taken together, were responsible for about half of the 845 non-NPL DOD sites. We selected the Atlanta and Chicago regions because they were responsible for five DOD sites that EPA proposed for NPL inclusion but

which were not listed. We selected the San Francisco region because it had the largest number of non-NPL DOD sites. We selected the Dallas region to pretest our review methodology because it was geographically convenient.

To determine why EPA has proposed fewer DOD sites for NPL inclusion since the early 1990s, we reviewed EPA policy and guidance on proposing sites for the NPL and interviewed EPA headquarters and regional officials on the reasons why EPA has proposed fewer sites. We interviewed DOD headquarters officials on its progress to identify and assess potentially contaminated DOD sites and the reasons why fewer hazardous releases have been identified. We interviewed EPA and DOD officials on contaminated DOD sites that EPA proposed for the NPL, why some were not listed, and the status of cleanup at these sites. Finally, for selected DOD sites, we evaluated the basis for EPA's decision to not propose listing certain contaminated DOD sites by reviewing site file documentation and interviewing EPA regional officials regarding all non-NPL DOD sites at four EPA regions. We excluded from our review sites under DOD's military munitions response program because of the ongoing uncertainty concerning the degree to which spent military munitions are subject to RCRA and CERCLA, and the fact that GAO has ongoing work in this area. Based on our review of contaminated DOD sites at four EPA regions, we attempted to determine the primary basis for EPA's decision to not propose to list the site. However, we were unable to confirm the basis for EPA's decision to not propose listing less than one-half of the sites surveyed (172 of 389, or 44 percent) because site file documentation, such as records of EPA's decisions and recommendations concerning sites, was missing or inconclusive. For example, officials at one EPA region told us they could not determine how many sites required no further action after either a preliminary assessment or site inspection because, prior to 1990, the region did not document the basis for determining that no further action was required.

Appendix II: Other Cleanup Programs

In addition to the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), there are a number of other cleanup authorities EPA considers in deciding whether to list a site include state cleanup programs (often referred to as voluntary cleanup programs) and the Defense Environmental Restoration program. Specifically:

State Cleanup Programs. Over the years, most states have developed their own cleanup programs, often referred to as voluntary state cleanup programs. Some state cleanup programs address hazardous waste sites independent of a state's Resource Conservation and Recovery Act (RCRA) program. Often, state cleanup projects begin with a preliminary site assessment and if contamination is suspected, an on-site investigation is conducted. EPA does not have oversight of state cleanup programs but has entered into memoranda of agreement or understanding with some states, recognizing the use of the state's cleanup program to address hazardous waste sites under a state's non-RCRA authority.

Defense Environmental Restoration Program. In 1986, Congress amended CERCLA and required that DOD establish an environmental restoration program under which all response actions at hazardous waste contaminated sites—such as site identification, investigation, and cleanup—must be conducted consistent with Section 120 of CERCLA.[1] More than 15 years later, the National Defense Authorization Act for Fiscal Year 2002 required that DOD also develop an inventory of all DOD sites known or suspected to contain unexploded ordnance, military munitions, or munitions constituents throughout the United States and develop a methodology for prioritizing response actions at these sites. Today, DOD's environmental response program includes an installation restoration program, which in 1985 began addressing hazardous releases resulting from past practices, and a military munitions response program, established as a separate program in 2001, to address safety and environmental hazards from unexploded ordnance and munitions on other-than-operational ranges (ranges that are closed, transferred or transferring). As of fiscal year 2007, DOD reported there were 27,950 installation restoration program sites on DOD facilities and former defense sites, of which 23,980, or 86 percent, had achieved "remedy in place" or

[1] 10 U.S.C. § 2700 *et seq.* The program is known as the Defense Environmental Restoration Program.

"response complete" status[2]. At 3,537 munitions response sites at current DOD facilities and former defense sites, a total of 940, or 27 percent, had achieved "remedy in place" or "response complete" status. DOD completed an initial inventory of munitions response sites in fiscal year 2002. Since then, DOD has been working to reconcile its inventory which includes conducting site assessments (preliminary assessments and, if needed, site inspections) of all sites. DOD estimates it will complete site assessments for all munitions response sites by the end of fiscal year 2010 except for sites on former defense sites. Former defense sites represent the majority of sites with suspected munitions response sites and, according to DOD, site assessments for munitions sites on former defense sites will not be completed until about 2013.

Under the Defense Environmental Restoration Program, DOD cleans up environmental hazards and contamination on active installations, installations being closed under DOD's Base Realignment and Closure program, and at formerly used defense sites. DOD is required to carry out response cleanup actions under the program, subject to, and in a manner consistent with, Section 120 of CERCLA. DOD is required to report annually to Congress on its environmental restoration programs. As of fiscal year 2007, DOD reported that its goal was to clean up all known releases (or achieve a "remedy in place" status) on active installations by the end of fiscal year 2014 and all sites on formerly used defense sites by the end of fiscal year 2020.

[2] DOD and EPA use different terminology to track cleanup status. DOD tracks the status of cleanup in terms of a "remedy in place" (where the selected remedy is in place and operating) followed by "response complete" (where the required remedial action or operations have been completed.) "Response complete" may also indicate a site was administratively closed; that is, the site did not meet the eligibility criteria for funding under the program, no information was found suggesting that contamination was present, or the property was transferred or is being cleaned up as part of another site. EPA tracks final construction, or "construction complete," which considers when all physical construction at a site is complete, all immediate threats have been addressed, and all long-term threats are under control. While long-term cleanup actions may still be operating, the site is often ready for another use.

Appendix III: Comments from the Environmental Protection Agency

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

FEB 24 2009

Mr. John B. Stephenson
Director
Natural Resources and Environment
U.S. Government Accountability Office
Washington, DC 20548

Re: EPA comments on the Government Accountability Office's (GAO) draft report to Congress entitled *Greater EPA Oversight, Enforcement, and Reporting Are Needed to Enhance Defense Site Cleanup (GAO-09-278)*

Dear Mr. Stephenson:

Thank you for the opportunity to review GAO's draft report entitled *Greater EPA Oversight, Enforcement, and Reporting Are Needed to Enhance Defense Site Cleanup (GAO-09-278)*. We appreciate GAO's review of EPA's role in the clean up and restoration of contaminated Department of Defense (DoD) properties.

EPA agrees that effective use of strong enforcement will help to assure timely and protective clean up of federal facilities. As for GAO's draft findings related to the National Priorities List (NPL), we offer in this letter general comments on two of the key reasons cited in the draft report for the slowing pace of DoD site listings: (1) States may object to EPA's proposals to list sites; and (2) DoD has discovered fewer hazardous substance releases (DoD's "mature inventory" of sites). In addition to comments on these two issues, you will find detailed comments in the enclosure to this letter.

Concerning the pace of NPL listings, GAO's draft report indicates that State objections to NPL listing may be one of four causes for the slowing pace of NPL listings of DoD sites. This conclusion was based on an examination of four instances in which States opposed the placement of DoD sites on the NPL during the period 1994-2001. It should be noted, however, that 44 federal sites *were* placed on the NPL (without State objection) during the same time period, including 37 DoD sites. Subsequent to that time frame, only three DoD sites were proposed for the NPL, and none of these were opposed by the States. In fact, of these three sites, one was listed at the specific request of a Governor, and the other two were listed with State support. We don't believe, therefore, that one can conclude that formal State objections have significantly contributed to the reduction in NPL listings.

GAO also cited "DoD's mature inventory" of contaminated properties and the discovery of fewer sites to explain the reduction in NPL listings. While typical sources of contamination

Internet Address (URL) • http://www.epa.gov
Recycled/Recyclable • Printed with Vegetable Oil Based Inks on Recycled Paper (Minimum 20% Postconsumer)

on DoD bases have been fairly well characterized, as noted in the draft report, other areas on these bases have not been adequately characterized, and there are still some newly discovered sources of contamination (e.g., munitions response sites under DoD's Military Munitions Response Program). While some slowing in the pace of DoD site listings is to be expected, the total number of potential NPL sites in DoD's inventory, and hence, the degree to which the pace of listing is explained by the "mature inventory" of sites, cannot be determined while there remains insufficient or missing site specific information to support decision making.

Again, thank you for the opportunity to comment. Please contact me if I can be of assistance, or your staff may call Bobbie Trent in EPA's Office of the Chief Financial Officer at 202.566.0983.

Sincerely,

Barry N. Breen
Acting Assistant Administrator, OSWER

Enclosure (1)

Appendix IV: Comments from the Department of Defense

OFFICE OF THE UNDER SECRETARY OF DEFENSE
3000 DEFENSE PENTAGON
WASHINGTON, DC 20301-3000

ACQUISITION
TECHNOLOGY
AND LOGISTICS

FEB 20 2009

Mr. John B. Stephenson
Director, Natural Resources and Environment
U.S. Government Accountability Office
441 G Street, N.W.
Washington, DC 20548

Dear Mr. Stephenson:

This is the Department of Defense (DoD) response to the GAO draft report, "SUPERFUND: Greater EPA Oversight, Enforcement, and Reporting Are Needed to Enhance Defense Site Cleanup," dated January 27, 2009 (GAO Code 360916/GAO-09-278).

The Department acknowledges receipt of the draft report. Even though there are no recommendations directed at DoD, we have concerns with some of GAO's factual statements, findings, conclusions and recommendation. Detailed technical comments on the report were provided separately.

In summary, DoD has major concerns with the following issues:

- The title of the report is misleading and not based on the facts presented in the report. The facts presented in the report do not support the conclusion that the DoD Cleanup program is not meeting the requirements of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) or the Resource Conservation and Recovery Act (RCRA). The report does not provide evidence that additional Environmental Protection Agency (EPA) oversight or enforcement authorities is needed and if provided these authorities will speed up cleanup or lead to better decision making. According to the findings of the report EPA does not need more or new oversight enforcement authorities, EPA needs to more effectively implement their authorities they already have under existing law.
- Congress has defined the term "defense site" in 10 U.S.C. Section 2710(e)(1). The report definition of defense site conflicts with this legal definition and implies Department of Energy sites are defense sites. Recommend using the term DoD site or DoD facility.

- The number of DoD National Priorities List (NPL) sites and remaining Federal Facilities Agreements (FFA) to be signed is inaccurate. DoD has 140 not 141 NPL site and 11 not 12 FFA remaining to be signed. The Middlesex Sampling Plant is a site under the Formerly Utilized Sites Remedial Action program (FUSRAP). It is assigned by law to the U.S. Army Corps of Engineers Civil Works Program, as the lead agency for the conduct of remedial actions at certain sites associated with the former Manhattan Engineer District and Atomic Energy Commission. It is not a under the direction or control of DoD cleanup program. The Middlesex Sampling Plant property is owned by the United States and under the accountability of the Department of Energy.

The facts presented in the report do not support the conclusions and recommendations. EPA is actively involved in review of response actions at DoD NPL sites, regardless of whether an FFA has been signed. The report indicates no evidence that the lack of an FFA at any of the sites has delayed, diminished, or reduced the timeliness or quality of the response actions taken by DoD with EPA, state and public involvement, at any DoD NPL site. DoD has made significant progress which is demonstrated in the report for the five sites EPA decided to not list on the NPL.

Sincerely,

Wayne Army
Deputy Under Secretary of Defense
(Installations and Environment)

CC:
OGC (E&I)
DASA (ESOH)
DASN (E)
DASAF (EESOH)

Appendix V: GAO Contact and Staff Acknowledgments

GAO Contact

John B. Stephenson, (202) 512-3841, or stephensonj@gao.gov

Staff Acknowledgments

In addition to the contact named above, Diane B. Raynes, Assistant Director; Elizabeth Beardsley; Christine D. Frye; Richard Johnson; and Alison O'Neill made major contributions to this report. Amy Ward-Meier also made key contributions.

GAO's Mission

The Government Accountability Office, the audit, evaluation, and investigative arm of Congress, exists to support Congress in meeting its constitutional responsibilities and to help improve the performance and accountability of the federal government for the American people. GAO examines the use of public funds; evaluates federal programs and policies; and provides analyses, recommendations, and other assistance to help Congress make informed oversight, policy, and funding decisions. GAO's commitment to good government is reflected in its core values of accountability, integrity, and reliability.

Obtaining Copies of GAO Reports and Testimony

The fastest and easiest way to obtain copies of GAO documents at no cost is through GAO's Web site (www.gao.gov). Each weekday afternoon, GAO posts on its Web site newly released reports, testimony, and correspondence. To have GAO e-mail you a list of newly posted products, go to www.gao.gov and select "E-mail Updates."

Order by Phone

The price of each GAO publication reflects GAO's actual cost of production and distribution and depends on the number of pages in the publication and whether the publication is printed in color or black and white. Pricing and ordering information is posted on GAO's Web site, http://www.gao.gov/ordering.htm.

Place orders by calling (202) 512-6000, toll free (866) 801-7077, or TDD (202) 512-2537.

Orders may be paid for using American Express, Discover Card, MasterCard, Visa, check, or money order. Call for additional information.

To Report Fraud, Waste, and Abuse in Federal Programs

Contact:

Web site: www.gao.gov/fraudnet/fraudnet.htm
E-mail: fraudnet@gao.gov
Automated answering system: (800) 424-5454 or (202) 512-7470

Congressional Relations

Ralph Dawn, Managing Director, dawnr@gao.gov, (202) 512-4400
U.S. Government Accountability Office, 441 G Street NW, Room 7125
Washington, DC 20548

Public Affairs

Chuck Young, Managing Director, youngc1@gao.gov, (202) 512-4800
U.S. Government Accountability Office, 441 G Street NW, Room 7149
Washington, DC 20548