

March 2003

ENVIRONMENTAL CONTAMINATION

DOD Has Taken Steps to Improve Cleanup Coordination at Former Defense Sites but Clearer Guidance Is Needed to Ensure Consistency





Highlights of [GAO-03-146](#), a report to Congressman John D. Dingell, Ranking Minority Member, U.S. House of Representatives

Why GAO Did This Study

The U.S. Army Corps of Engineers (Corps) is in charge of addressing cleanup at the more than 9,000 U.S. properties that were formerly owned or controlled by the Department of Defense (DOD) and have been identified as potentially eligible for environmental cleanup. The Corps has determined that more than 4,000 of these properties have no hazards that require further Corps study or cleanup action. However, in recent years, hazards have surfaced at some of these properties, leading state and federal regulators to question whether the Corps has properly assessed and cleaned up these properties. In this context, Congress asked us to (1) analyze federal coordination requirements that apply to the cleanup of these properties, (2) assess recent DOD and Corps efforts to improve coordination, and (3) identify any issues regulators may have about coordination with the Corps.

What GAO Recommends

DOD and the Corps should (1) develop clear and specific coordination guidance that should explicitly include, among other things, preliminary assessment of eligibility and ordnance and explosive waste; (2) assess recent efforts to improve coordination at the national as well as district level and promote wider distribution of best practices; and (3) work with EPA to clarify their respective roles in the cleanup of former defense sites that are not on the list of the nation's worst hazardous sites.

www.gao.gov/cgi-bin/getrpt?GAO-03-146.

To view the full report, including the scope and methodology, click on the link above. For more information, contact (Ms.) Anu Mittal or Ed Zadjura on (202) 512-3841.

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What GAO Found

Federal law requires DOD and the Corps of Engineers to consult with state regulatory agencies and EPA during the process of cleaning up formerly used defense sites (FUDS). However, the law only provides specifics for the cleanup phase for hazardous substances. DOD's Management Guidance and the FUDS Program Manual do not provide clear direction or specific steps for involving regulators in the FUDS program. In addition, both the law and the guidance are silent on the subject of consultation or coordination with regulators during the preliminary assessment phase, when the Corps makes decisions on whether a former defense site is eligible for DOD cleanup and whether further investigation and/or cleanup are needed. DOD and Corps officials told GAO that they would revise their guidance to include specific, but as yet undetermined, instructions for coordination with regulators during such decisions.

DOD and the Corps have recently taken several steps to improve coordination. For example, they are working with the regulatory community to develop specific steps that Corps districts can take, such as providing states with updated lists of current and future FUDS program activities in their states and initiating a new pilot program in nine states that has the Corps working side by side with regulators in the cleanup of former defense sites. In addition, several Corps districts have independently taken steps to improve coordination with state regulators. DOD and the Corps will need to assess the effectiveness of these various initiatives to determine which are successful and should be included in program guidance to all districts.

Despite the improvements in coordination, regulators still raised two major issues about Corps coordination on the FUDS program. First, some states believe that they lack the information necessary to properly oversee cleanup work at former defense sites and to judge the validity of Corps decisions. For example, 15 of the 27 states GAO contacted believe they need to be involved in knowing what the Corps is doing during the preliminary assessment phase. Also, 9 of the 27 states believe they need to be involved in project closeouts, so that they can ensure that the Corps has met state cleanup standards. Second, EPA believes it should have a larger role in the cleanup of former defense sites. Although states are the primary regulator at the majority of former defense sites and EPA is the primary regulator for only the 21 former defense sites that are on the list of the nation's worst hazardous sites, EPA believes that its role even on the unlisted sites should be greater. The agency believes that this would improve the effectiveness of the cleanups and increase public confidence overall. The Corps disagrees, and the two agencies have been unable to establish an effective working relationship on the cleanup for former defense sites.

Commenting on a draft of this report, DOD stated that it generally agreed with the recommendations and was taking or planned to take steps that should, when completed, substantially correct the problems GAO cited.

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Abbreviations

CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act of 1980
DOD	Department of Defense
EPA	Environmental Protection Agency
FUDS	formerly used defense sites
NDAI	no DOD action indicated
SARA	Superfund Amendments and Reauthorization Act of 1986

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G A O

Accountability * Integrity * Reliability

United States General Accounting Office
Washington, DC 20548

March 28, 2003

The Honorable John D. Dingell
Ranking Minority Member
Committee on Energy and Commerce
House of Representatives

Dear Mr. Dingell:

More than 9,000 properties throughout the United States that were formerly owned or controlled by the Department of Defense (DOD) are potentially eligible for environmental cleanup. These formerly used defense sites (FUDS) are now owned by states, local governments, and individuals and are used for parks, schools, farms, and homes. Hazards at these FUDS may include hazardous, toxic, and radioactive wastes in soil, water, or containers, such as underground storage tanks; ordnance and explosive wastes; and unsafe buildings. According to DOD, identifying, investigating, and cleaning up hazards caused by DOD at FUDS will cost \$15 billion to \$20 billion and take more than 70 years.

The FUDS program, which is run by the U.S. Army Corps of Engineers (Corps), is part of the Defense Environmental Restoration Program. The Superfund Amendments and Reauthorization Act of 1986 (SARA) established this program.¹ Depending on the types of hazards involved and their severity, either state environmental regulatory agencies or the Environmental Protection Agency (EPA) may be responsible for ensuring that the Corps meets applicable requirements and standards when cleaning up FUDS. In general, EPA is the primary regulator for the 21 FUDS properties on EPA's list of the most dangerous hazardous waste sites in the country—the National Priorities List. States are typically the primary regulators for FUDS properties that have hazardous and other wastes but have not been placed on the National Priorities List. Since 1984, the Corps has generally determined without regulator input that more than 4,000 properties eligible for the FUDS cleanup program have no

¹ The Defense Environmental Restoration Program was established by section 211 of SARA and is codified at 10 U.S.C. 2701 *et. seq.* SARA amended the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA). CERCLA, as amended by SARA, governs the cleanup of the nation's most severely contaminated federal and nonfederal hazardous waste sites.

hazards that require further Corps study or cleanup action.² However, since the late 1990s, hazards have surfaced at some of these FUDS, leading state and federal environmental regulators to question whether the Corps has properly assessed and cleaned up these and other FUDS.

There are many and varied opportunities for the Corps to coordinate with regulators during the FUDS cleanup program. After a potential FUDS property is identified, the Corps conducts a preliminary assessment of eligibility to determine if the property was ever under DOD's control prior to October 17, 1986, and therefore eligible for the program. Upon conclusion of the preliminary assessment of eligibility, the Corps conducts additional studies, tests, and investigations at all properties eligible for inclusion in the FUDS program where hazards are suspected to determine if the hazards found were the result of DOD ownership or control, the extent of any DOD-caused hazards, and the amount of DOD cleanup that might be warranted. Eventually, for some properties, the Corps designs, constructs, and operates a cleanup remedy such as treating contaminated groundwater or removing contaminated soils. At each phase in the program, the Corps has the opportunity to inform regulators of what it is doing or proposing, obtain regulator input on its efforts, or provide regulators with its results in the form of studies or reports.

In this context, you asked us to (1) analyze federal requirements for DOD and the Corps to coordinate with state and federal regulators during the FUDS cleanup program, (2) assess recent steps that DOD and the Corps have taken to better coordinate, and (3) identify any issues regulators may have about coordination with the Corps. As part of our review, we surveyed state and Corps managers about cleanup projects at 519 randomly selected FUDS properties. We also interviewed state FUDS program officials from the 27 states that account for 80 percent of FUDS properties. Appendix I contains additional details on our scope and methodology.

² According to DOD, because it recognized the importance of regulator involvement in the program, in the early 1990s it established the Defense and State Memorandum of Agreement Program to facilitate coordination with regulators during the cleanup process. However, this program does not apply to preliminary assessments of eligibility, the phase during which the Corps determined that more than 4,000 eligible properties required no further Corps study or cleanup action.

Results in Brief

Federal law requires DOD and the Corps of Engineers to consult with state regulatory agencies and EPA during the FUDS cleanup program. However, the only instance for which federal law provides specifics is the cleanup phase for hazardous substances.³ Guidance to carry out federal law is contained in DOD's Management Guidance and the Corps' FUDS Program Manual. While both documents emphasize the need for coordination with regulators, neither contains clear direction or specific steps for involving regulators in the FUDS program. Further, the law and DOD's Management Guidance and the FUDS Program Manual are silent on the subject of consultation or coordination with regulators (1) for hazards such as ordnance and explosive waste, which can pose serious human safety risks, and (2) during the preliminary assessment of eligibility phase, which is the first meaningful opportunity during the FUDS program for coordination with regulators. DOD and Corps officials told us that the FUDS Program Manual is presently being revised to include specific instructions for coordination with regulators, including during the preliminary assessment phase.

Since the late 1990s, DOD and the Corps have taken several steps to increase coordination with regulators during the various phases of the FUDS cleanup program, and officials in 20 of the 27 states we contacted noted an overall improvement in the Corps' coordination with them during the past few years. For example, DOD, together with the regulatory community, formed the FUDS Improvement Working Group to improve coordination. In April 2001, as a result of this group's work, Army headquarters sent a memo to Corps divisions and districts responsible for FUDS work requiring them to follow specific steps when dealing with regulators, such as providing states with updated lists of all ongoing and future FUDS activities and informing states of any Corps deviation from planned work. Other parts of the memo are more general, such as a requirement to involve states in setting priorities for FUDS work. However, this memo has not yet been made a part of DOD's Management Guidance or the FUDS Program Manual. Another result of the working group's efforts was a pilot program that DOD and the Corps have established for states and EPA to produce Management Action Plans. To develop these plans, regulators would work jointly with the Corps to identify FUDS in the state, designate key stakeholders and their roles, set priorities for FUDS cleanup, and develop work plans for cleanup. Four states have completed action plans, and nine more are developing them.

³ See 10 U.S.C. 2701 and 2705.

Overall, 19 of the 27 state officials we talked to believe that this initiative would improve Corps coordination with them in the future. Individual Corps districts have also taken actions to improve coordination, such as holding quarterly meetings with regulators and establishing a process to jointly agree on closeouts. DOD and the Corps will need to assess the success of its pilot program and the efforts of individual districts to determine which lessons learned from these activities should be included in program guidance to enhance future coordination efforts for all districts.

Despite the improvements in coordination with the Corps that they noted in the last few years, regulators still raised two major issues about coordination on the FUDS program. First, some states believe they still do not receive all of the information necessary to properly carry out their regulatory responsibilities regarding the FUDS cleanup program or to judge the validity of Corps decisions through different program stages. For example, although not required, 15 of the 27 states we contacted believe they need to be involved in knowing what the Corps is doing during the preliminary assessment of eligibility phase. Further, 9 of the 27 believe they need to be involved in project closeouts, when cleanup work has been completed, so that they can be assured that the Corps' actions have met state cleanup requirements. According to DOD, the Corps recognizes that states need to be involved in preliminary assessments of eligibility and project closeouts and has included specific instructions for such involvement in its revisions to the draft engineering regulation that revises the FUDS Program Manual. Second, EPA and DOD disagree on EPA's role in the FUDS program. Although EPA is the primary regulator for the FUDS that are on the list of the nation's worst hazardous waste sites, the states are typically the primary regulators for all other FUDS. EPA told us that its role at some of these unlisted FUDS should be greater because it believes it can help improve the effectiveness of the cleanups and increase public confidence in the program. DOD and some states disagree with this position because they do not believe there is a need for additional EPA oversight of its work at unlisted FUDS properties where the state is the lead regulator. DOD disagreed with a March 2002 internal EPA policy that proposed consultation expectations between the Corps and EPA under the Defense Environmental Restoration Program. Without an agreement on roles and responsibilities, the agencies have been unable to establish an effective working relationship on FUDS.

We are making recommendations to DOD aimed at increasing and improving Corps coordination with regulators on all phases of the FUDS cleanup program. In addition, in view of the disagreement over regulatory

roles and responsibilities, DOD and EPA should work together to clarify their respective roles in the FUDS cleanup program.

In commenting on a draft of this report, DOD generally agreed with GAO's findings and, particularly, with GAO's assessment that the Corps has improved overall coordination with regulatory agencies. In addition, DOD agreed with GAO's recommendations and indicated that it is currently in the process of implementing changes that will improve the Corps' coordination with regulators. For example, DOD noted that the Corps is currently in the process of revising its guidance to include step-by-step procedures for regulatory coordination at each phase of FUDS cleanup, including the preliminary assessment of eligibility phase, and to include unexploded ordnance projects; is proposing to include best practices that stem from its experience with Management Action Plans; and will review individual District coordination efforts to identify other potential best practices. EPA also reviewed a draft of this report and agreed with our findings and conclusions.

Background

The FUDS program is carried out by 22 Corps districts located throughout the nation. DOD carries out its roles and responsibilities in cleaning up FUDS primarily under the Defense Environmental Restoration Program, which was established by section 211 of the Superfund Amendments and Reauthorization Act of 1986. Under the environmental restoration program, DOD is authorized to identify, investigate, and clean up environmental contamination at FUDS. The U.S. Army, through the Corps, is responsible for these activities and is carrying out the physical cleanup. DOD is required, under the Defense Environmental Restoration Program, to consult with the Environmental Protection Agency (EPA), which has its own authority to act at properties with hazardous substances. In general, EPA is the primary regulator for the 21 FUDS properties on EPA's list of the most dangerous hazardous waste sites in the country—the National Priorities List. States are typically the primary regulators for FUDS properties that have hazardous and other wastes but have not been placed on the National Priorities List.

To determine if a property is eligible for cleanup under the FUDS program, the Corps conducts a preliminary assessment of eligibility. This assessment determines if the property was ever owned or controlled by DOD and if hazards caused by DOD's use may be present. If the Corps

determines that the property was at one time owned or controlled by DOD but does not find evidence of any hazards caused by DOD, it designates the property as “no DOD action indicated” (NDAI).⁴ If, however, the Corps determines that a DOD-caused hazard that could require further study may exist on a former DOD-controlled property, the Corps begins a project to further study and/or clean up the hazard.

FUDS cleanup projects fall into one of four categories, depending on the type of hazard to be addressed.⁵

- **Hazardous waste** projects address hazardous, toxic, and radioactive substances, such as paints, solvents, and fuels.
- **Containerized waste** projects address containerized hazardous, toxic, and radioactive waste associated with underground and aboveground storage tanks, transformers, hydraulic systems, and abandoned or inactive monitoring wells.
- **Ordnance and explosive waste** projects involve munitions, chemical warfare agents, and related products.
- **Unsafe buildings and debris** projects involve demolition and removal of unsafe buildings and other structures.

The type and extent of the work that the Corps may need to perform at a project depend on the project category. Hazardous waste and ordnance and explosive waste projects involve a site inspection to confirm the presence, extent, and source of hazards; a study of cleanup alternatives; the design and implementation of the actual cleanup; and long-term monitoring to ensure the success of the cleanup. Containerized waste and unsafe buildings and debris projects, on the other hand, may involve only the design and implementation of the cleanup.

⁴ Before fiscal year 2001, the Corps used the term “no further action.”

⁵ The FUDS program has a fifth project category, potentially responsible party, which is used when DOD shares responsibility for a hazard with another entity. Because this category accounts for only about 4 percent of all FUDS projects, we did not address it in this report.

Additional Guidance Would Help Ensure Coordination with Regulators

While federal law requires DOD and the Corps to consult with regulators, including states and EPA, during the FUDS cleanup program, it does not define consultation. Similarly, the two primary DOD and Corps guidance documents for implementing the FUDS program emphasize the need for Corps coordination with regulators but do not provide clear direction or specific steps for involving regulators in the FUDS program. Our survey results show a lack of consistent coordination between the Corps and regulators throughout the history of the program that could be caused by the lack of specific requirements that state explicitly what the Corps needs to do to involve regulators. According to DOD, ongoing development of regulations that will revise the Corps' FUDS Program Manual will provide clear direction and specific steps for involving regulators in the FUDS program.

Federal Law and DOD and Corps Guidance Generally Require Coordination with Regulators but Do Not Contain Specific Requirements

Federal law requires DOD and the Corps to consult with regulatory entities in carrying out the FUDS program. Under 10 U.S.C. 2701, the Corps must carry out the FUDS program "in consultation with" EPA. However, this section does not define consultation, mention the state regulators, or prescribe specific steps for the Corps to follow. More specific language regarding consultation as it relates to the cleanup of hazardous substances is provided in 10 U.S.C. 2705. At projects involving hazardous substances, the Corps must notify EPA and appropriate state officials and provide them an opportunity to review and comment on activities associated with (1) discovering releases or threatened releases of hazardous substances at FUDS, (2) determining the extent of the threat to public health and the environment that may be associated with such releases, (3) evaluating proposed cleanup actions, and (4) initiating each distinct phase of cleanup.⁶ In addition, CERCLA has specific consultation requirements for properties on the National Priorities List, including the 21 FUDS on the list for which EPA is the primary regulator.⁷ For many of these FUDS, EPA and DOD have signed a cleanup agreement stating that the two agencies agree on the nature of the cleanup action and the schedule for its completion.

⁶ The requirement to consult on response actions does not apply if the action is an emergency removal taken because of imminent and substantial endangerment to human health or the environment and consultation would be impractical.

⁷ We used the term "coordination" to describe the Corps' consultation actions. In addition, the FUDS Manual, which is the official guidance for the program, uses the term "coordination."

DOD and the Corps have two major guidance documents for implementing the FUDS program: the DOD Management Guidance for the Defense Environmental Restoration Program and the FUDS Program Manual. The DOD Management Guidance pertains to all DOD environmental cleanup activities, including FUDS cleanup. It contains general guidance for the Corps' coordination activities. According to the guidance, DOD is fully committed to the substantive involvement of state regulators and EPA throughout the FUDS cleanup program and encourages cooperative working relationships. The latest version of the guidance, published in September 2001, emphasizes a greater need for coordination with regulators. For example, the guidance states that the Corps shall

- establish communication channels with regulatory agencies;
- provide regulators access to information, including draft documents;
- establish procedures for obtaining pertinent information from regulators in a timely manner; and
- involve regulatory agencies in risk determination, project planning, completion of cleanup activities, and other tasks.

Although the updated DOD Management Guidance articulates general steps that, if taken, would improve coordination between the Corps and regulatory agencies, the guidance does not specify procedures on how to take these steps. Further, some of the language is ambiguous and open to broad interpretation. For example, "establish communication channels" could mean anything from a telephone call once a year to weekly meetings.

The second guidance document, the FUDS Program Manual, constitutes the Corps' primary guidance for the program. Regarding coordination, the manual suggests, and sometimes requires, among other things, that the Corps

- notify states and EPA of discovery and cleanup activities related to hazardous substances;
- ensure that states and EPA have adequate opportunity to participate in selecting and planning cleanup actions and in defining cleanup standards for FUDS projects;

-
- coordinate all cleanup activities with appropriate state regulatory and EPA officials;
 - conduct cleanups of hazardous waste projects consistent with section 120 of CERCLA, which addresses cleanups of federal facilities; and
 - try to meet state and EPA standards, requirements, and criteria for environmental cleanup where they are consistent with CERCLA.

Beyond generally restating statutory requirements, however, the FUDS Program Manual provides no clear, specific guidance to its program managers on how to implement those steps and coordinate consistently with regulators. For example, “coordinate all cleanup activities” needs to be defined and how to carry out and maintain such coordination on a day-to-day basis should be described more clearly. According to DOD and Corps officials, the draft Engineer Regulation that is being developed to revise the FUDS Program Manual includes specific instructions for review of draft preliminary assessments of eligibility by regulators. Officials added that they are open to further suggestions to improve coordination and consultation with regulators.

Despite Requirements, Corps Officials Often Did Not Coordinate during the Cleanup Phase

Although coordination is required during the cleanup phase for hazardous and containerized wastes, responses to our survey of FUDS properties covering FUDS work that took place during the period from 1986 through 2001 indicate that state project managers believe the Corps coordinated with them, on average, 34 percent of the time during cleanup, while the Corps believes it coordinated with states an average of 55 percent of the time during cleanup. Moreover, state and Corps respondents agree that coordination was better for projects in our sample that addressed hazardous substances than for projects that did not. For example, according to state respondents to our survey, coordination for hazardous waste projects was more than 25 percent higher than for ordnance and explosive waste projects. (See table 1.) For additional survey results, such as the percent of cases where respondents felt there wasn’t any coordination or gave “don’t know” responses, see appendix II.

Table 1: Extent to Which State and Corps Project Managers Believe the Corps Coordinated with States during Cleanups in Our Sample, by Project Type

	Project Type					
	Hazardous waste (percentage)		Containerized waste (percentage)		Ordnance and explosive waste (percentage)	
Examples of coordination during project activities	State	Corps	State	Corps	State	Corps
Corps informed states of upcoming work	53	72	40	57	18	42
Corps asked for states' input and participation	50	67	25	51	18	39
Corps informed states of interim results	49	73	25	51	13	24
Corps provided states with draft reports	46	59	27	49	23	25
Corps provided states with final reports	44	57	36	63	44	33
Weighted average	48	66	30	54	23	34

Source: GAO.

Note: States' and Corps' responses to GAO's FUDS survey.

Despite the greater coordination for projects addressing hazardous substances, the Corps is not involving the states consistently. For example, for projects addressing hazardous substances, the Corps is required by law to inform states before starting each phase of any action and to provide states an opportunity to review and comment on proposed cleanup actions. However, according to the states, the Corps informed them of upcoming work at these hazardous waste projects 53 percent of the time and requested states' input and participation 50 percent of the time. As shown in table 1, while the Corps thought it had coordinated at a higher rate, it was still less than the required 100 percent. The fact that DOD and Corps guidance does not offer specific requirements that describe exactly how the Corps should involve regulators could be a factor behind the historical lack of consistency in Corps coordination with regulators.

Guidance Does Not Cover the Preliminary Assessment of Eligibility and Very Little Coordination Took Place During This Phase

The DOD Management Guidance and FUDS Program Manual are silent on regulators’ roles in preliminary assessments of eligibility, during which decisions on property eligibility and the need for cleanup are made, in part because the law requiring consultation with regulators is broad and does not mention consultation with the states, only with EPA. The Corps has historically regarded preliminary assessments of eligibility as an internal matter that does not require coordination with regulators. However, according to DOD, the draft Engineer Regulation, which will revise the FUDS Program Manual, will require the Corps to share information with the states, EPA, and local authorities during the development of the preliminary assessment of eligibility and will solicit their input. According to the results of our survey, the state project managers believe the Corps coordinated with them about 6 percent of the time, and the Corps project managers believe the Corps coordinated with states about 27 percent of the time. (See table 2.) As a result, there is no consistent coordination at this stage of the FUDS program. For additional survey results, such as the percent of cases where respondents felt there wasn’t any coordination or gave “don’t know” responses, see appendix II.

Table 2: Extent to Which State and Corps Project Managers Believe the Corps Coordinated with States during Preliminary Assessments of Eligibility in Our Sample

Examples of coordination during the preliminary assessment of eligibility	State project managers (percentage)	Corps project managers (percentage)
Corps informed states that it was starting preliminary assessment of eligibility	6	24
Corps asked states for information or input on Corps approach	6	27
Corps asked for state participation	5	16
Corps informed states of interim results as work progressed	5	15
Corps provided states with a draft of the report summarizing the results of the preliminary assessment of eligibility	4	7

Source: GAO.

Note: States’ and Corps’ responses to GAO’s FUDS survey.

Also, according to state and Corps respondents to our current survey, the Corps provided final reports on its preliminary assessments of eligibility to state regulators in 48 and 56 percent of the cases, respectively. In the past, states were only notified after the fact about the results of preliminary assessments of eligibility; however, the Corps said that although not required in its current guidance, its current practice is to coordinate all

new preliminary assessments of eligibility with states. Subsequently, according to FUDS program officials in 12 of the 27 states we contacted, there has been some improvement in overall Corps coordination during the preliminary assessment of eligibility over the last 3 years. In particular, those states told us that while the Corps is still not required to coordinate with them during its preliminary assessments of eligibility, it has been doing a better job of providing them with draft and final reports on the outcomes of preliminary assessments of eligibility.

DOD and the Corps Have Taken Some Steps to Improve Coordination with Regulators, but Assessment of These Efforts and Clearer Guidance Is Needed

Over approximately the last 3 years, states have noted an overall improvement in the Corps' coordination with them. For example, FUDS program officials in 20 of the 27 states we contacted reported that, overall, Corps coordination with them has improved during this time. The main factors state officials cited for the improvement include an increase in the number of meetings they were invited to attend with Corps project managers on specific project tasks, more information provided by the Corps to the states regarding project work, and better coordination in setting work priorities. DOD and the Corps started to take steps to address the coordination issue in response to the concerns that the states began to voice in the late 1990s about their lack of involvement in the FUDS program. Initially, DOD's efforts consisted of steps such as sponsoring conferences to encourage greater coordination between the Corps and regulators. Individual Corps districts also took steps to improve coordination.

As part of the efforts to improve coordination, the Deputy Assistant Secretary of the Army for Environment, Safety and Occupational Health, along with members of the regulatory community, formed the FUDS Improvement Working Group in October 2000 to address FUDS program concerns and to improve communication among the Corps, the regulators, and other parties with an interest in FUDS cleanup. The working group, which consisted of DOD, Corps, state, EPA, and tribal representatives, compiled a list of issues to be addressed through better communication and consistent coordination, including the role of regulators in setting priorities and planning work at FUDS properties and in the final closeout of properties after cleanup.⁸

⁸ EPA withdrew from the working group in April 2002.

Two results of the working group's efforts to improve coordination are new Army guidance and a pilot program. First, in April 2001, Army headquarters sent a memorandum to Corps divisions and districts responsible for FUDS work requiring them to follow specific steps when dealing with regulators during the FUDS cleanup program. For example, the memorandum required the Corps to

- inform states of FUDS that are likely to go through a preliminary assessment of eligibility,
- provide states with updated lists of all ongoing and future activities at FUDS,
- involve states in setting priorities for FUDS work,
- provide states a final list of FUDS that will undergo some type of work in the coming year,
- inform states of any Corps deviation from planned work and provide them with the rationale for any such changes, and
- involve states in developing the final report of the preliminary assessment of eligibility.

The Corps considers this directive to be a first step in improving the states' somewhat negative perceptions of the FUDS program and overall communication between the Corps and the states. The directive addresses many state concerns, including lack of

- information about which FUDS properties the Corps is working on,
- involvement in and information about preliminary assessments of eligibility and their outcomes, and
- state regulatory involvement in setting priorities for Corps FUDS work.

However, after almost 2 years, the memo's conclusions have not been incorporated in either DOD's Management Guidance or the Corps' FUDS Program Manual. According to DOD, the Corps is now in the process of revising the FUDS Program Manual as an Engineer Regulation to include specific requirements for Corps district coordination with EPA and state regulators.

The second result from the working group is a pilot program developed by the Army in March 2001 under which the Corps and regulatory agencies, including states and EPA, jointly prepare statewide Management Action Plans for FUDS properties. Specifically, for each state participating in the pilot, information provided by EPA, state regulators, and other relevant parties is consolidated on each FUDS property in the state to prepare a statewide Management Action Plan. Each state plan provides a coordinated strategy for investigating and cleaning up FUDS that

- identifies the key participants and their roles at FUDS cleanups,
- provides an inventory of all FUDS located in the state,
- sets priorities for cleaning up FUDS properties and projects, and
- develops statewide work plans.

Overall state reaction to this pilot has been favorable. FUDS project managers in 19 of the 27 states that we contacted believe that this pilot will improve future communication between the Corps and the states.

To date, the four states that participated in the initial phase of the pilot—Colorado, Kansas, Ohio, and South Dakota—have statewide plans. The plans' approaches vary to address each state's unique circumstances. For example, the Kansas plan was very detailed, covering the status of state and federal environmental programs, the status of the FUDS program, and providing details about Kansas FUDS properties. Conversely, the South Dakota and Colorado plans focused only on regulator and budget issues. Corps officials stated that they receive input from state representatives of organizations in the working group regarding whether the pilot has been successful. Recognizing that the variation in state approaches as to how these Management Action Plans are developed might be appropriate, DOD says that it plans to work with the FUDS Improvement Working Group to evaluate the success of the pilot and determine best practices that could be shared with the nine additional states that participated in the second round of the pilot during fiscal year 2002: Alaska, Arizona, Massachusetts, Missouri, North Carolina, South Carolina, Texas, Virginia, and Wyoming. DOD views the pilot as a success and plans to continue the development of statewide Management Action Plans for an additional six states during fiscal year 2003, including Alabama, Hawaii, Michigan, New Mexico, New York, and Washington. As part of this effort, DOD plans to develop a format that meets the needs of each particular state. Corps officials stated that the Corps will highlight the minimum elements that must be in a

Statewide Management Action Plan but will not dictate the plan's exact format.

In addition to the DOD and Corps efforts taken to improve coordination, individual Corps districts also took steps to improve coordination with the states in which they operate, as follows:

- The Alaska district began sharing with state regulators backup documents related to its preliminary assessments of eligibility and inviting regulators to accompany district officials on site visits during the preliminary assessments of eligibility. The Alaska district now also involves state regulators in developing work plans and is in the process of establishing formal procedures to achieve project and property closeouts that are jointly agreed upon by the Corps and the state.
- The Louisville district, in response to state concerns, began to reassess its previous NDAI determinations at Nike missile sites.
- Since 1998, the Kansas City district has been holding quarterly meetings with states and EPA to establish lines of communication between the Corps and regulators; the district has also entered into memorandums of agreement with states and EPA outlining roles and responsibilities for each.
- The Fort Worth district invited interested parties, including officials from another district and state regulators, to its June 2001 meeting to set priorities and plan FUDS work for the upcoming year.
- The Honolulu district and EPA Region 9 cochair meetings semi-annually to foster communication on the FUDS program in the Pacific area.
- The Baltimore district provided electronic copies of all preliminary assessment of eligibility reports to Delaware, Maryland, Pennsylvania, and Washington, D.C., in 1999; similarly, the Norfolk district provided most, if not all, such reports to the state of Virginia.

While these individual district efforts may yield positive results, the Corps has not assessed these efforts to determine if any might be candidates for Corps-wide implementation. The Corps believes it is a best practice to allow individual districts and regulators to work out mutually agreed to levels of coordination. However, without adequate guidance, direction, and a menu of best practices for districts to choose from, inconsistent and inadequate coordination may result. To better promote greater and more

consistent coordination with regulators, DOD and the Corps will need to assess the success of individual district efforts to determine which lessons learned from these activities should be included in program guidance.

Views of Regulators about FUDS Coordination Activities

Some state regulators, who are responsible for ensuring that applicable environmental standards are met at most FUDS properties, believe that inadequate Corps coordination has made it more difficult for them to carry out their regulatory responsibilities. Also, state regulatory officials told us that they have frequently questioned Corps cleanup decisions because they have often not been involved in or informed about Corps actions at FUDS. Conversely, they told us that when Corps coordination has occurred, states have been more likely to agree with Corps decisions. At the federal level, EPA and the Corps do not share the same view on EPA's role in the FUDS program. EPA believes that it should play a greater role at the 9,000 FUDS that are not on the National Priorities List, while the Corps believes that EPA's role should remain limited to those FUDS that are on the National Priorities List.

Some State Regulators Believe Poor Coordination by the Corps Makes It Difficult for Them to Ensure That Environmental Standards Are Met

Some state regulators we contacted believe that when the Corps does not inform them of its FUDS cleanup activities or involve them in the various stages of the FUDS program, they do not have the information necessary to ensure that applicable cleanup standards have been met and that the cleanup actions will protect human health and the environment. They were particularly concerned about the preliminary assessment of eligibility stage of the program and hazards such as ordnance and explosive waste, for which the requirement in law (10 U.S.C. 2701) "consultation with EPA" is very broad and without definition. Further, the law does not mention consultation or coordination with state regulators. Discussions with state regulators raised the issue that coordination through all stages of the program was valuable and helped regulators develop confidence in Corps decisions.

With regard to the preliminary assessment of eligibility, FUDS program officials in 15 of the 27 states we contacted expressed specific concerns regarding their limited involvement during this stage of the program. One concern, which was raised by 12 of these officials, was that Corps activities are taking place without their knowledge or involvement. Our past work has shown the results of this lack of coordination. Our August

2002 report⁹ noted that because the Corps historically did not consult states during its preliminary assessment of eligibility, states did not discover until after the fact, in some cases years later, that the Corps had determined that more than 4,000 properties required no further DOD study or cleanup action. Moreover, in several cases in which DOD had made an NDAI determination without involving the states, DOD-caused hazards were later identified, and the Corps had to reassess the properties and conduct cleanup work. At Camp O'Reilly in Puerto Rico, for example, the Corps made an NDAI determination after it conducted a preliminary assessment of eligibility that did not include a review of state historical information on the use of the property. Several years later, the then-owner of the property identified DOD-caused hazards at the property. This led to a more comprehensive Corps assessment that found serious threats to drinking water sources and other hazards that required cleanup under the FUDS program.

Another concern about the preliminary assessment of eligibility voiced by officials in 17 of the 27 states we contacted is that the Corps has not adequately supported and documented its NDAI decisions, and it has not involved states in developing them. Because of their lack of involvement and what states perceive as a lack of adequate support for such Corps decisions, these states believe they have little assurance that the Corps performed adequate work during its preliminary assessments of eligibility and that NDAI properties are, in fact, free of DOD-caused hazards. Our survey of 519 FUDS properties also showed that, historically, states approved of Corps NDAI determinations in only 10 percent of the cases; in 70 percent of the cases, state respondents could not say whether they agreed or disagreed with the determination.

With regard to ordnance and explosive waste projects, one of the types of projects states told us were most important to them, interviews with the 27 state FUDS program officials indicated that they were satisfied with the Corps' work on such projects in only 11 percent of the cases. This lack of satisfaction could be, at least partially, the result of the relatively low levels of state involvement in these projects. According to state survey respondents, the Corps involved them, on average, in 23 percent of ordnance and explosive waste projects. Corps guidance currently focuses coordination on hazardous waste and does not specifically address

⁹ *Environmental Contamination: Corps Needs to Reassess Its Determinations That Many Former Defense Sites Do Not Need Cleanup*, GAO-02-658 (Washington D.C.: Aug. 23, 2002).

coordination of ordnance and explosive waste projects. However, according to DOD, the draft Engineer Regulation that revises the FUDS Program Manual includes specific requirements for district coordination with regulators on such projects.

States also have various concerns about their limited involvement in the FUDS work that occurs after the preliminary assessment of eligibility. For example, FUDS program officials in 7 of the 27 states believe that being more involved in setting priorities for the Corps' project work could help ensure that riskier sites were addressed in a timely manner. Further, officials in 9 of the states we contacted said that when they are not involved in project and property closeouts—the points at which the Corps concludes that all its cleanup work has been completed—state regulatory agencies have no assurance that Corps actions have met state cleanup requirements.

Finally, when the Corps has coordinated with states, states have been less likely to doubt the validity of Corps decisions and the adequacy of Corps cleanup activities. According to our survey results, for example, when states received final reports from the Corps, they agreed with Corps decisions regarding the risk posed by a hazard, the characteristics of the site, and the cleanup standards selected in 53 percent of the cases and disagreed in only 13 percent.¹⁰ On the other hand, when states did not receive such documentation, they agreed with Corps decisions in only 11 percent of the cases, disagreed in 15 percent, and did not know enough to offer an opinion in 74 percent of the cases. Similarly, according to some state FUDS program officials, as Corps coordination with states has improved over the past 3 years, states' acceptance of Corps decisions has increased. For example, only one of the 27 state FUDS program officials we contacted generally agreed with Corps NDAI decisions that were made before the last 3 years. On the other hand, eight of these officials told us that they agree with recent NDAI decisions that were made during the last 3 years.

¹⁰ Percentages do not total 100 because some respondents answered "neither agree or disagree" or "don't know."

EPA and the Corps Have Differing Views about Their Respective Roles and Management of the FUDS Program

EPA has historically had little involvement in the cleanup of the approximately 9,000 FUDS that are not on its National Priorities List and for which EPA is usually not the primary regulator.¹¹ In the late 1990s, at the request of some states, tribes, members of the general public, and others, EPA increased its focus on environmental investigations and cleanups of privately owned FUDS. In some cases, this has led to disagreements between EPA and the Corps and required added efforts on the parts of both agencies to reach agreement on how cleanup should be conducted.

As EPA's knowledge of the FUDS program and how it is carried out by the Corps grew, EPA focused its attention on various issues, including the following:

- EPA, the Corps, and state regulators all have differing views of EPA's role at FUDS that are not on the National Priorities List. EPA believes that, in certain instances, it should have a greater role at FUDS that are not on the National Priorities List. DOD, citing its statutory responsibility to carry out the FUDS program and a delegation of CERCLA authority under an executive order, maintains that it is the sole administrator of the FUDS program. States, which are responsible for regulating cleanup at most FUDS, have varying opinions on what EPA's role in FUDS cleanup should be. Several states would like to see EPA become more involved in the cleanup process, for example, by participating in preliminary assessments of eligibility or providing states with funds to review Corps work. Other states believe EPA's role is about right or that EPA has no role in the process unless a state invites it to participate.
- The way the Corps is to administer the FUDS cleanup program has also been interpreted differently by the agencies. Specifically, 10 U.S.C. 2701 requires that the Corps perform work at FUDS projects involving hazardous substances "subject to and in a manner consistent with" section 120 of CERCLA, which addresses the cleanup of federal facilities. Section 2701 also requires the Corps to carry out response actions involving hazardous substances in accordance with the provisions of the Defense Environmental Restoration Program and CERCLA. However, EPA and the Corps disagree on the meaning of these requirements. EPA contends that the Corps should follow

¹¹ At the 21 FUDS that are on the National Priorities List, Corps coordination is addressed by the CERCLA requirement to enter into an interagency agreement with EPA.

CERCLA regulations (the National Contingency Plan) and the EPA guidance used to clean up non-FUDS properties under CERCLA. DOD maintains its right to establish and follow its own procedures for determining project eligibility under the Defense Environmental Restoration Program, as long it performs response actions in a manner consistent with its authorities under the Defense Environmental Restoration Program and CERCLA.

- EPA believes that DOD’s preliminary assessments of eligibility should be as comprehensive as the preliminary assessments that EPA conducts on non-FUDS properties. EPA’s CERCLA-based preliminary assessments investigate entire properties for hazards, identifying the source and the nature of hazards and the associated risks to human health and the environment—information EPA needs to determine whether properties qualify for placement on the National Priorities List. In contrast, DOD’s preliminary assessments of eligibility focus on determining whether the properties are eligible for cleanup under the FUDS program and whether DOD-caused hazards may exist. According to DOD, it collects information limited to DOD-related hazards in accordance with the limits of its authorities under the Defense Environmental Restoration Program. The FUDS Program Manual states that DOD’s preliminary assessment of eligibility is not intended to be equivalent to the CERCLA preliminary assessment. DOD officials said that the draft Engineer Regulation, which revises the FUDS Program Manual, addresses EPA concerns about coordination during the preliminary assessment of eligibility.
- DOD views preliminary assessments of eligibility as internal agency documents for which there is no coordination requirement and has generally not coordinated these assessments with EPA. As a result, according to EPA officials, EPA often does not have access to the information necessary for deciding whether a property should be included on the National Priorities List. Consequently, EPA cannot be assured that significant hazards to human health and the environment that could warrant listing do not exist at a property, and EPA may need to conduct its own, more comprehensive, preliminary assessment under CERCLA.

Because of its focus on these issues, EPA re-evaluated its approach to addressing privately owned FUDS, and, in March 2002, issued a policy for addressing privately owned FUDS that are not on the National Priorities

List.¹² The policy, issued to EPA's regional offices to clarify the agency's role at these FUDS, outlines a framework for coordinating with the Corps and EPA's expectations for Corps consultation with them under the Defense Environmental Restoration Program. For example, EPA would like to see the Corps

- involve it to a greater extent in FUDS work, such as preliminary assessments of eligibility;
- provide EPA, state regulatory agencies, and other interested parties reasonable opportunities for meaningful review of and comment on major decision documents, as well as documents associated with carrying out specific FUDS activities, such as work plans and sampling and analysis plans; and
- respond in writing to comments from EPA, the states, and others and show how it has addressed the comments or, if it has not, explain why not.

Overall, EPA believes that a better-coordinated effort among all parties, as discussed in its policy, would improve the effectiveness of cleanup at FUDS and increase public confidence in the actions taken at these sites. EPA's policy also emphasizes that EPA does not expect its involvement to be consistent across all phases of work; rather, it would increase its involvement at a site when conditions warranted—for example, if there were “imminent and substantial endangerment” or if EPA had concerns about the appropriateness of the cleanup.

DOD disagrees with much of EPA's new policy. For example, in commenting on EPA's draft policy, DOD requested that EPA delete from it numerous references to EPA's “oversight” and “review.” DOD, citing its statutory responsibility to carry out the FUDS program and referring to a delegation of CERCLA authority under an executive order, maintains that the FUDS program is solely its program to administer. DOD also maintains that 10 U.S.C. 2701, which provides for EPA's consultation role under the FUDS program, does not provide authority for EPA concurrence or oversight of the program. According to DOD, EPA's role should be limited to FUDS for which EPA is the lead regulator—that is, primarily FUDS that are on the National Priorities List.

¹² U.S. Environmental Protection Agency, *EPA Policy Towards Privately-Owned Formerly Used Defense Sites* (Washington, D.C.: March 2002).

Without an agreement on roles and responsibilities, DOD and EPA have been unable to establish an effective working relationship on FUDS or have had to undertake extra efforts to come to an agreement on how a cleanup should be conducted. An example of this is the Spring Valley FUDS in Washington, D.C., where the U.S. Army operated a research facility to test chemical weapons and explosives during World War I. Because the site was a formerly used defense site, DOD has responsibility for cleaning up the site under the Defense Environmental Restoration Program. However, under CERCLA, EPA has its own authority to act at the site, including conducting investigations and removal actions. Further, under EPA's FUDS policy, EPA can take a more active role at FUDS if conditions warrant. According to EPA officials, if a site is not listed as a national priorities site or there is no imminent danger to the public or environment, EPA may limit its role. Early in the 1980s, the specific role of the two federal agencies at the Spring Valley site led to some confusion and disagreement about the cleanup approach and the standards to be applied. Over time, the federal agencies and the District of Columbia government formed a partnership to reach agreements on cleanup at the site. While the partners have not agreed on all cleanup decisions, they acknowledged, as of June 2002, that the partnership was operating effectively. Further, officials acknowledge that forming the partnership has provided a means to foster communication and collaboration.

Conclusions

While state regulators reported to us that the Corps has improved its coordination with them, more can be done in five areas to build on those successes. First, our work has shown that many states would like to be more involved in the preliminary assessment of eligibility stage of the program. The program guidance is silent on regulators' roles in preliminary assessments of eligibility, in part because the law requiring consultation with regulators is broad and does not mention consultation with the states, only with EPA. The Corps has regarded preliminary assessments of eligibility as an internal matter and has done little to coordinate with regulators during the assessment. As a result, regulators believe their ability to ensure that decisions about FUDS properties and projects meet environmental standards and protect the public from environmental contamination has been hindered. As we were completing our work, DOD and Corps officials told us that they are in the process of revising the FUDS Program Manual as an Engineer Regulation that would include requirements for coordination during preliminary assessments. Following through with this plan is critical to clearly establish that coordination is required and lay out what steps need to be taken to ensure that it occurs.

Second, as it updates its program guidance, incorporating the more specific requirements sent out in an April 2001 memorandum would help to ensure that coordination requirements are clear. Better clarity could also result from a re-examination and clarification of existing DOD and Corps FUDS program guidance documents that are general in nature and contain ambiguous language. Third, DOD and Corps efforts have been directed at improving coordination on hazardous waste projects but could be enhanced by also requiring coordination for ordnance and explosive wastes cleanup that can pose significant safety and health risks and in which many of the states want to be more involved. However, DOD states that it addresses coordination requirements at ordnance and explosive waste projects in its draft Engineer Regulation, which replaces the FUDS Program Manual.

Fourth, while the Corps has made various agencywide efforts to improve coordination with regulators, such as its state management plans pilot program, many beneficial coordination efforts have also occurred at Corps districts through the initiative of individual Corps personnel. Evaluating these district efforts and agencywide initiatives to incorporate successful ones into its operating procedures for the FUDS program as a whole would establish best practices and result in the entire program benefiting from individual efforts.

Finally, at the federal level, EPA and the Corps disagree about EPA's role in the cleanup of more than 9,000 FUDS that are not on the National Priorities List. Reaching agreement on these roles and expectations for coordination is essential for establishing an effective working relationship on FUDS. The lack of a good working relationship between two federal cleanup agencies may hamper efforts to properly assess properties for cleanup and may, in some cases, result in some duplication of effort—for example, when EPA has to reassess the properties to determine if they merit placement on the National Priorities List. In addition, while the partnership formed by the two agencies at the Spring Valley FUDS demonstrates that the agencies can work together, that is not the norm for the FUDS program as evidenced by EPA's March 2002 FUDS policy and DOD's response to it. Further, even if the agencies were able to negotiate partnerships or memoranda of understanding for individual FUDS properties, that is neither an efficient nor cost effective approach given that there are thousands of FUDS properties needing cleanup.

Recommendations for Executive Action

To help ensure consistent coordination with regulators during all phases of FUDS investigation and cleanup, we recommend that the Secretary of the Department of Defense direct the Secretary of the Department of the Army to follow through on its plans to develop and incorporate clear and specific guidance in the Corps' FUDS Program Manual as to how, when, and to what extent coordination with regulators should take place, including during preliminary assessments of eligibility. Moreover, in view of the states' concerns and hazards posed by ordnance and explosive waste, the coordination guidance should address these types of projects as well, not just those involving hazardous waste. In developing the guidance, the Army should work with regulators to develop a consensus on how, when, and to what extent coordination should take place.

As a starting point, we recommend that the Secretary of the Department of Defense direct the Secretary of the Department of Army to

- assess the impact of the Corps' recent efforts to improve coordination through actions such as directives and the Management Action Plan pilot program and incorporate the successful components as requirements into its FUDS Program Manual, and
- assess practices individual Corps districts have used to coordinate with regulators and develop a list of best practices for dissemination throughout the Corps that districts might use to improve their coordination.

In addition, in view of the need for federal agencies to ensure that cleanup efforts are done properly and that scarce resources are best utilized, DOD and EPA should work together to clarify their respective roles in the FUDS cleanup program for properties that are not listed on the National Priorities List. The agencies should agree on a time frame to establish a memorandum of understanding that will lay out an overall framework for how they will work together, including their roles and responsibilities, during the assessment and cleanup of FUDS properties.

Agency Comments and Our Evaluation

We provided DOD and EPA with a draft of this report for their review and comment. DOD and EPA agreed with our findings and conclusions. In addition, DOD agreed with two of the report's recommendations and partially agreed with the third, and indicated that it had begun or was planning on taking actions to address all of them.

In response to our recommendation that DOD follow through on its plans to develop and incorporate clear and specific guidance in the FUDS Program Manual as to how, when, and to what extent coordination with regulators should take place, including during the preliminary assessment of eligibility phase and for ordnance and explosive waste projects, DOD indicated that it is in the process of addressing this issue. Specifically, the Corps is revising the FUDS Program Manual as an engineering regulation that will include step-by-step procedures for regulatory coordination at each phase of FUDS cleanup, including the preliminary assessment of eligibility process, and for unexploded ordnance projects.

DOD also indicated that it is taking actions that should address our recommendations that DOD assess the impact of recent Corps' efforts to improve coordination through actions such as the Management Action Plan pilot program and incorporate the successful components as requirements into its FUDS guidance. DOD is also assessing practices that individual Corps districts have used to coordinate with regulators and developing a list of best practices for dissemination and use throughout the Corps. DOD stated that it is proposing to include best practices from the Management Action Plan pilot in its engineering regulation and will review individual District efforts aimed at improving coordination with regulators to see if additional best practices should be developed.

In response to our recommendation that DOD and EPA work together to clarify their respective roles in the FUDS cleanup program by establishing a memorandum of understanding that will lay out an overall framework, DOD is proposing to incorporate coordination and consultation requirements in the appropriate procedural sections of the upcoming engineering regulation, rather than using a memorandum of understanding.

Overall, the steps being taken or planned by DOD to improve coordination with regulators could, when completed, constitute a significant improvement over current processes and should go a long way toward addressing the problems identified in this report that were the subject of our recommendations.

EPA did not comment specifically on the individual recommendations in the report but did state that report did an excellent job of presenting substantive information relative to DOD's efforts to consult with regulatory agencies.

In addition to their written comments, DOD and EPA also provided a number of technical comments and clarifications, which we incorporated as appropriate. DOD's comments appear in appendix III and EPA's comments appear in appendix IV.

We conducted our review from March 2001 to September 2002 in accordance with generally accepted government auditing standards.

As arranged with your offices, unless you publicly announce the contents of this report earlier, we plan no further distribution of it until 30 days from the date of this letter. We will then send copies to the Secretary of Defense; the Director, Office of Management and Budget; appropriate congressional committees; and other interested parties. We will also provide copies to others upon request. In addition, the report will be available, at no charge, on the GAO Web site at <http://www.gao.gov/>.

If you or your staff have any questions, please call me or Edward Zadjura at (202) 512-3841. Contributors to this report are listed in appendix V.

Sincerely yours,



(Ms.) Anu K. Mittal
Acting Director, Natural Resources and Environment

Appendix I: Additional Details on Our Scope and Methodology

The objectives of our review were to (1) identify federal requirements for DOD and the Corps to coordinate with state and federal regulators during the FUDS cleanup program, (2) determine the extent to which the Corps has coordinated with state regulators since the start of the FUDS program and assess the recent steps it has taken to better coordinate, and (3) identify any concerns regulators may have about coordination with the Corps.

To identify federal requirements that DOD and the Corps must meet in coordinating with regulators, we obtained and reviewed the Superfund Amendments and Reauthorization Act of 1986. To identify related DOD and Corps guidance, we interviewed FUDS program officials and Corps officials in various Corps districts and divisions. We then obtained and reviewed the guidance documents, including the Defense Management Guidance for the Defense Environmental Restoration Program, the Corps FUDS Program Manual, and other related documents.

To determine how the Corps coordinates with state regulators during the assessment and cleanup of FUDS, we conducted a survey. First, we drew a stratified, random sample of 519 FUDS properties from the Corps' FUDS database, as of February 2001. The survey results cover FUDS program activities that took place from 1986 through 2001. The sample consisted of 150 properties that did not have any projects associated with them and an additional 369 properties that had at least one project with at least one specific work phase completed. The following table summarizes our sample in terms of the number of properties represented, as well as the number and types of projects.

Table 3: Number of FUDS Properties and Projects in Our Sample

	Population	Sample
FUDS Properties		
Properties without projects	4,002	150
Properties with projects	2,762	369
Total FUDS properties	6,764	519
FUDS Projects		
Project Category		
• Hazardous waste	1,009	96
• Containerized waste	1,274	106
• Ordnance and explosive waste	1,629	144
• Unsafe buildings and debris	470	32
• Potentially responsible party ¹	201	21
• Other	2	0
Total FUDS projects	4,585	399^a

Source: GAO.

^aSome properties with projects had multiple projects.

We obtained information from the Corps' FUDS database to customize the surveys depending on their cleanup phase as well as the types of projects, if any, that were in the survey. At the property level, questions varied depending upon whether 1) the Corps had determined that no DOD action was indicated, 2) the database showed no projects associated with the property and DOD had not made a determination that no DOD action was indicated, and 3) the Corps had proceeded with at least some type of project work. Project level questions varied depending on 1) the type of project—for example, hazardous waste projects received a more complex questionnaire than unsafe buildings and debris projects because hazardous waste projects must go through more investigation and cleanup phases and 2) how many of the investigation and cleanup phases the Corps had completed at a project—as indicated by the Corps FUDS database.² For example, not all hazardous waste projects in our sample

¹ We did not solicit information on potentially responsible party projects because they account for only 4 percent of all FUDS projects and we did not address them in this report.

² Specifically, a hazardous waste project can go through several investigation and cleanup phases, including a site inspection to confirm the presence, extent, and source(s) of the hazards; a study to evaluate the risk associated with the hazard, determine whether cleanup is needed, and if so, select alternative cleanup approaches; and design, construction, operation, and long-term monitoring of the selected cleanup, if necessary. Ordnance and explosive waste projects can go through similar phases, with the exception of the "operation" of the cleanup phase. Containerized waste and unsafe buildings and debris projects may only go through design and construction of the cleanup.

have gone through all applicable phases. Based on information that the Corps provided to us, we determined which phases were completed in such projects and only asked questions related to the completed phases. We then sent similar questionnaires to the current Corps and state project managers of the properties in our sample to obtain the views of both regarding coordination.

To obtain information on DOD efforts to improve coordination with regulators and address their concerns, we interviewed DOD and Corps headquarters officials and reviewed documents that they provided. In addition, we contacted FUDS program officials at several Corps divisions and districts, including the Great Lakes and Ohio River, North Atlantic, South Atlantic, and Southwestern divisions, and the Alaska, Louisville, Norfolk, Seattle, and Tulsa districts.

To obtain information on state regulators' concerns regarding Corps coordination with them regarding the FUDS program, we conducted structured interviews with FUDS program managers in the 27 states that account for most of the FUDS work. To determine which states to call, we used the Corps FUDS database to identify the 20 states that had the greatest number of FUDS properties. Because properties vary in terms of the amount of work they involve—for example, the number of projects at FUDS properties ranged between 1 and 43—we also identified the 20 states that had the most FUDS projects. There were 27 states that fell into at least one of these two categories, and they accounted for approximately 80 percent of all FUDS properties and all FUDS projects. To document consistently the information we obtained from the FUDS managers in the 27 states, we developed a data collection instrument to guide our interviews.

To obtain information on the Corps' coordination with EPA and its concerns regarding its role in the program, we interviewed officials at EPA headquarters, including those from the Office of Solid Waste and Emergency Response responsible for developing EPA's guidance for FUDS, and we reviewed documentation they provided. In addition, we developed a data collection instrument to conduct structured interviews with federal facilities officials who deal with FUDS issues at all 10 EPA regions.

Appendix II: State and Corps Project Managers' Responses to Our Survey Regarding Coordination at FUDS

Table 4: State Project Managers' Responses Regarding Corps Coordination with States during Preliminary Assessments of Eligibility in Our Sample

	Yes (percentage)	No (percentage)	Don't know (percentage)	Total responses
Did the Corps inform states that it was starting preliminary assessment of eligibility?	6	81	13	444
Did the Corps ask states for information or input on its approach?	6	80	14	886 ^a
Did the Corps ask for state participation?	5	84	11	441
Did the Corps inform states of interim results as work progressed?	5	83	12	441
Did the Corps provide states with a draft of the report summarizing the results of the preliminary assessment of eligibility?	4	84	12	441
Did the Corps provide states with the final report on the preliminary assessment of eligibility?	48	43	9	442

Source: GAO.

^aCombined total responses for two questions.

Note: States' responses to FUDS survey.

Table 5: Corps Project Managers' Responses Regarding Corps Coordination with States during Preliminary Assessments of Eligibility in Our Sample

	Yes (percentage)	No (percentage)	Don't know (percentage)	Total responses
Did the Corps inform states that it was starting preliminary assessment of eligibility?	24	58	18	481
Did the Corps ask states for information or input on its approach?	27	53	20	965
Did the Corps ask for state participation?	16	64	20	481
Did the Corps inform states of interim results as work progressed?	15	65	20	478
Did the Corps provide states with a draft of the report summarizing the results of the preliminary assessment of eligibility?	7	79	14	481
Did the Corps provide states with the final report on the preliminary assessment of eligibility?	56	30	14	477

Source: GAO.

^aCombined total responses for two questions.

Note: Corps' responses to FUDS survey.

**Appendix II: State and Corps Project
Managers' Responses to Our Survey
Regarding Coordination at FUDS**

Table 6: State Project Managers' Responses Regarding Corps Coordination with States during Cleanup of Hazardous Waste Projects in Our Sample

	Yes (percentage)	No (percentage)	Don't know (percentage)	Total responses
Did the Corps inform states of upcoming work?	53	31	16	86
Did the Corps ask for states' input and participation?	50	33	17	169 ^a
Did the Corps inform states of interim results?	49	35	16	84
Did the Corps provide states with draft reports?	46	43	11	98
Did the Corps provide states with final reports?	44	41	15	91

Source: GAO.

^aCombined total responses for two questions.

Note: States' responses to FUDS survey.

Table 7: Corps Project Managers' Responses Regarding Corps Coordination with States during Cleanup of Hazardous Waste Projects in Our Sample

	Yes (percentage)	No (percentage)	Don't know (percentage)	Total Responses
Did the Corps inform states of upcoming work?	72	12	16	99
Did the Corps ask for states' input and participation?	67	14	19	195 ^a
Did the Corps inform states of interim results?	73	11	16	95
Did the Corps provide states with draft reports?	59	25	16	108
Did the Corps provide states with final reports?	57	21	22	101

Source: GAO.

^aCombined total responses for two questions.

Note: Corps' responses to FUDS survey.

**Appendix II: State and Corps Project
Managers' Responses to Our Survey
Regarding Coordination at FUDS**

Table 8: State Project Managers' Responses Regarding Corps Coordination with States during Cleanup of Containerized Waste Projects in Our Sample

	Yes (percentage)	No (percentage)	Don't know (percentage)	Total Responses
Did the Corps inform states of upcoming work?	40	48	12	86
Did the Corps ask for states' input and participation?	25	60	15	168 ^a
Did the Corps inform states of interim results?	25	53	22	80
Did the Corps provide states with draft reports?	27	61	12	83
Did the Corps provide states with final reports?	36	50	14	84

Source: GAO.

^aCombined total responses for two questions.

Note: States' responses to its FUDS survey.

Table 9: Corps Project Managers' Responses Regarding Corps Coordination with States during Cleanup of Containerized Waste Projects in Our Sample

	Yes (percentage)	No (percentage)	Don't know (percentage)	Total Responses
Did the Corps inform states of upcoming work?	57	20	23	109
Did the Corps ask for states' input and participation?	51	21	28	216
Did the Corps inform states of interim results?	51	24	25	108
Did the Corps provide states with draft reports?	49	28	23	105
Did the Corps provide states with final reports?	63	19	18	106

Source: GAO.

^aCombined total responses for two questions.

Note: Corps' responses to FUDS survey.

**Appendix II: State and Corps Project
Managers' Responses to Our Survey
Regarding Coordination at FUDS**

Table 10: State Project Managers' Responses Regarding Corps Coordination with States during Cleanup of Ordnance and Explosive Waste Projects in Our Sample

	Yes (percentage)	No (percentage)	Don't know (percentage)	Total Responses
Did the Corps inform states of upcoming work?	18	67	15	39
Did the Corps ask for states' input and participation?	18	71	11	78 ^a
Did the Corps inform states of interim results?	13	76	11	38
Did the Corps provide states with draft reports?	23	70	7	47
Did the Corps provide states with final reports?	44	53	3	45

Source: GAO.

^aCombined total responses for two questions.

Note: States' responses to FUDS survey.

Table 11: Corps Project Managers' Responses Regarding Corps Coordination with States during Cleanup of Ordnance and Explosive Waste Projects in Our Sample

	Yes (percentage)	No (percentage)	Don't know (percentage)	Total Responses
Did the Corps inform states of upcoming work?	42	21	37	33
Did the Corps ask for states' input and participation?	39	23	38	66a
Did the Corps inform states of interim results?	24	27	49	33
Did the Corps provide states with draft reports?	25	33	42	36
Did the Corps provide states with final reports?	33	50	17	36

Source: GAO.

^aCombined total responses for two questions.

Note: Corps' responses to FUDS survey.

Appendix III: Comments from the Department of Defense



ACQUISITION,
TECHNOLOGY
AND LOGISTICS

OFFICE OF THE UNDER SECRETARY OF DEFENSE

3000 DEFENSE PENTAGON
WASHINGTON, DC 20301-3000

MAR 11 2003

Ms. Gary L. Jones
Director, Natural Resources and Environment
U.S. General Accounting Office
Washington, D.C. 20548

Dear Ms. Jones:

This is the Department of Defense (DoD) response to the GAO draft report, GAO-03-146, "ENVIRONMENTAL CONTAMINATION: DoD has Taken Steps to Improve Cleanup Coordination at Former Defense Sites, but Clearer Guidance is Needed to Assure Consistency", (GAO Code 360046).

In the attached comments, we agree with GAO's assessment that the Army Corps of Engineers has improved overall coordination with regulatory agencies. As recommended, we intend to continue to build on that success, through the Army's Formerly Used Defense Sites (FUDS) Improvement Workgroup initiative. The workgroup is currently overseeing development of statewide management action plans (MAPs) in 19 different States, and plans to incorporate best practices from Corps Districts and agreements made by States and the US Environmental Protection Agency (EPA) on regulatory coordination, in their revisions to policy and guidance.

In regard to GAO's first recommendation that the Corps specify steps to be used in regulatory coordination in guidance and policy, the Corps is revising the FUDS manual, as an engineering regulation (ER), to include step-by-step procedures for regulatory coordination at each phase of FUDS cleanup, including the preliminary assessment of eligibility process and unexploded ordnance sites, consistent with comments submitted by States and EPA. Specific changes to the FUDS ER are described in detail in our attached response to recommendations.

We agree with GAO's second recommendation that the Corps promote wider distribution of MAPs and specific improvements initiated by individual Corps Districts. MAPs, developed cooperatively between EPA regions, States, and the Corps, which further refine regulatory roles and responsibilities for each site within a State, have been completed in Missouri, Wyoming, Arizona, Kansas, Colorado, Ohio, South Dakota, and Alaska and are under development in Massachusetts, Virginia, North and South Carolina, and Texas. Six additional MAPs are planned for Fiscal Year 2003 for New York, Alabama, Michigan, New Mexico, Hawaii, and Washington. The Corps is also proposing



to include best practices in the draft FUDS ER, as well as undertake review of other suggested District improvements through the FUDS Improvement Workgroup.

We partially agree with GAO's third and final recommendation that DoD resolve differences with EPA over authority for FUDS through a memorandum of understanding for FUDS not on the National Priorities List (NPL) or non-NPL FUDS. Rather than negotiating authorities delegated by the President and authorized by Congress through informal agreements, we will redouble our efforts to ensure that the legally mandated consultation role with EPA, defined by 10 U.S.C. 2701, is articulated in the draft ER.

My point of contact on this matter, Mr. Kurt Kratz (703) 697-5372, is available to discuss our responses to recommendations and the additional technical comments attached to our responses.

Sincerely,



Philip W. Grone
Principal Assistant Deputy Under Secretary of Defense
(Installations and Environment)

Enclosure

GAO DRAFT REPORT DATED FEBRUARY 5, 2003
(GAO CODE 360046)

"ENVIRONMENTAL CONTAMINATION: DOD Has Taken Steps to Improve Cleanup
Coordination at Former Defense Sites but Clearer Guidance Is Needed to Assure
Consistency"

DEPARTMENT OF DEFENSE COMMENTS TO
THE GAO RECOMMENDATIONS

RECOMMENDATION 1: Recommend the Secretary of Defense and Secretary of the Army follow through on its plans to develop and incorporate clear and specific guidance in the Formerly Used Defense Sites (FUDS) Program Manual as to how, when, and to what extent coordination with regulators should take place, including during preliminary assessments of eligibility and projects involving ordnance and explosive waste.

DoD RESPONSE: Agree. The Corps is in the process of revising the FUDS Program Manual in coordination with the U.S. Environmental Protection Agency (EPA) and States. Comments from the EPA and States through the Association of State and Territorial Solid Waste Management Officials are being incorporated into the draft manual, which will be issued as a Corps Engineering Regulation, ER 200-3-1. Chapter 9 of the draft FUDS Engineering Regulation (ER) has been revised significantly to provide for consultation and notification of the regulatory agencies in all project phases of project execution. Coordination requirements are the same for both hazardous waste projects and munitions response (ordnance and explosive waste) projects. Specific examples of coordination required by the draft ER include:

a. General: Coordination Requirements

- Provide the lead regulatory agency, whether it be EPA, State, or Tribes, with the following for non-Potentially Responsible Party (PRP) projects:
 - Project Management Plans (PMP), Property Specific Management Action Plans, and Statewide Management Action Plans (MAPs),
 - Timely information relative to FUDS Inventory Project Reports (INPRs), categorical exclusions, No DoD Action Indicated (NDAI) determinations, and available relevant information regarding non-DoD contamination at FUDS,
 - Reasonable opportunities for meaningful regulatory review of and comment on the results of Relative Risk and unexploded ordnance Risk Assessment Code (RAC) scores, and on major project documents, including, but not limited to, the INPR, site specific work plans, scopes of work, sampling and analysis plans, investigatory/study reports (Preliminary Assessment (PA), Site Inspection (SI), or Archival Search Report), remedial investigation/feasibility study (RI/FS) reports, engineering evaluations/cost analyses (EE/CA), decision documents, and remedial design/remedial action (RD/RA) documents, operations and maintenance workplans, land use control implementation plans, and 5 year review reports.
- Provide written response to comments from EPA/States/Tribes along with final project documents.

**Appendix III: Comments from the Department
of Defense**

- Provide EPA, States, or Tribes, on an annual basis, with a list of FUDS PRP sites.
- Coordination shall begin during the FUDS inventory project phase. The geographic Military Corps District shall notify current landowners, stakeholders, and the lead regulatory agency of proposed actions at the earliest opportunity and when funding is available for the approved project or projects in accordance with the annual workplan. This coordination and consultation shall be exercised in all subsequent phases of project performance and at all levels within the Corps of Engineers.
- The Corps shall provide notice and opportunity for comment on all response activities performed under the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) and the National Contingency Plan (NCP) to the lead regulatory agency.
- The Corps shall take such steps as necessary and appropriate to promptly notify the lead regulatory agency, in accordance with 10 U.S.C. 2705 for each of the following:
 - The discovery of releases or threatened releases of hazardous substances at the property.
 - The extent of the threat to public health and the environment which may be associated with any such release or threatened release.
 - Proposals to carry out response actions with respect to any such release or threatened release.
 - Initiation of any response action with respect to such release or threatened release and the commencement of each distinct phase of such activities. The Corps District Commanders are responsible for ensuring the prompt notification of these agencies for actions being taken in their geographical area.
- The lead Corps District at each FUDS shall consult EPA, State, and local authorities regarding regulatory standards, providing the notice and opportunity for comment as appropriate in accordance with 10 U.S.C. 2705(a) and (b). Efforts shall be made to attain standards, requirements, or criteria requested by these authorities where they are consistent with CERCLA Section 120 (42 USC 9620) and the NCP processes and criteria and contaminants in the FUDS program (10 U.S.C. 2701(a)(2)). Counsel shall be consulted on all issues related to the extent of Federal or State authority.
- The Corps should strive to achieve a consensus opinion with the lead regulator and stakeholders, particularly in selection of a response action.

b. Inventory Project Report and Preliminary Assessment of Eligibility (PAE)

The draft FUDS ER requires that INPR preparation and review be coordinated with the lead regulatory agency. Joint participation in PAEs by States through the Defense State Memorandum of Agreement (DSMOA) program, assists the Corps in gathering historical information on past uses at the property, and accessing records from other entities, adding to the overall knowledge of the property.

c. Property and project closeout

Chapter 3 of the draft FUDS ER requires regulatory coordination for closeout of a FUDS property or projects. Prior to making property closeout determinations, the Corps District shall provide the EPA, state, affected Tribes, and local authorities with notice and opportunity to comment on the determination.

d. No DoD Action Indicated determinations

The draft FUDS ER requires the Corps provide notice and opportunity for comment by regulators regarding FUDS NDAI determinations. Through DSMOA, the Corps shall fund States for regulatory review of NDAIs as well as site visits, identification of applicable, relevant, and appropriate requirements (ARARs), and participation in technical review committees. The program also provides for state participation in the development of MAPs and review of five previous NDAI's annually, which are reopened at the State's request.

RECOMMENDATION 2: Recommend that the Secretary of Defense direct the Secretary of the Army to assess the impact of the Corps' recent efforts to improve coordination through actions such as directives and the Management Action Plan pilot program and incorporate the successful components as requirements into its FUDS Program Manual, and assess practices individual Corps Districts have used to coordinate with regulators and develop a list of best practices for dissemination throughout the Corps that Districts might use to improve their coordination.

DoD RESPONSE: Agree. The Corps has developed specific guidance for coordination with regulators. Examples include the Corps Engineer Pamphlet 1110-3-8, Public Participation in the DERP for FUDS, and the Corps Engineer Manual 200-1-2, Technical Project Planning. The EM can be found on www.usace.army.mil/publications/eng-manuals/ccmp.htm.

The pilot for statewide MAPs has been expanded to 19 states in Fiscal Year 2003. The FUDS Improvement Workgroup is monitoring development of the pilot, and the Corps is reviewing each plan to assess the extent of and success of stakeholder involvement in each state.

The draft ER requires that MAPs be the primary means used to identify all FUDS cleanup activities in coordination with States, EPA, and other stakeholders, including representative members from communities surrounding FUDS properties. MAPs will be regarded as living documents that can be used by stakeholders as a resource to quickly and effectively evaluate the status of each FUDS property within a state. Key activities undertaken cooperatively by the Corps District, EPA Region, and State in MAP development include identification of each FUDS site within a state, determining clean-up priorities for each site, defining lead regulator at each site, funding provided for each project, and development of strategies for property/project closeout.

Lastly, the Corps is proposing to include improvements from individual Corps Districts, deemed as best practices, in the draft ER. The FUDS Improvement Workgroup also plans to undertake a review of other Corps District practices, to determine if wider application is recommended.

RECOMMENDATION 3: Recommend DoD and EPA work together to clarify their respective roles in the FUDS cleanup program for properties not listed on the National Priorities List. The agencies should agree on a timeframe to establish a memorandum of understanding that will layout a framework for how they will work together, including their roles and responsibilities during the assessment and cleanup of FUDS properties.

DoD RESPONSE: Partially Agree. Rather than negotiating authorities delegated by the President and authorized by Congress through informal agreements, we will redouble our efforts

to ensure that the legally mandated consultation role with EPA, defined by 10 U.S.C 2701, is articulated in the draft ER. In addition, language agreed to by States, EPA, and DoD, prior to EPA's departure from the FUDS Improvement Workgroup, has been incorporated in the draft FUDS ER:

- States or Tribes will generally be the lead regulator for environmental investigations and response at non-NPL FUDS. In certain circumstances, EPA may serve as lead regulator where the State or Tribe requests that EPA assume the lead or when EPA chooses to exert its lead regulator role. In instances where EPA assumes lead regulatory agency authority, roles should be documented and all parties notified.
- In cases where a non-NPL FUDS is on or affecting tribal land, the lead regulator role generally falls to the affected tribe. Project-specific circumstances may warrant assumption of the lead regulator role by EPA. In such cases, specific roles and responsibilities of the agencies involved should be negotiated between the state or tribe and EPA and documented and communicated to all parties.
- When a FUDS is either proposed for inclusion or listed on the NPL, EPA is the lead regulator. If arrangements exist involving lead regulatory agency issues at the time of proposal for inclusion on the NPL, those arrangements should be considered when determining lead regulatory agency following NPL listing.

Appendix IV: Comments from the Environmental Protection Agency



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

FEB 27 2003

OFFICE OF
SOLID WASTE AND EMERGENCY
RESPONSE

Gary L. Jones
Director, Natural Resources and Environment
United States General Accounting Office (GAO)
Washington, D.C. 20548

Dear Ms. Jones:

Thank you for the opportunity to review and comment on the draft report entitled, "Environmental Contamination - DOD Has Taken Steps to Improve Cleanup Coordination at Former Defense Sites but Clearer Guidance is Needed to Assure Consistency" (GAO-03-146). This letter transmits our comments on the draft report.

The U.S. Environmental Protection Agency (EPA) believes the report has done an excellent job presenting substantive information related to the Department of Defense's (DOD's) and the Corps of Engineers (Corps) efforts to consult with state regulatory agencies and EPA when addressing Formerly Used Defense Sites (FUDS). EPA appreciates the effort made by the GAO in developing an accurate and unbiased appraisal of the issue. The enclosed document contains EPA's comments that are intended to clarify statements about EPA's FUDS policy and its role in the FUDS Improvement Working Group (FIWG).

In addition to providing specific comments, EPA wants to acknowledge recent efforts by the Corps, states and EPA to improve communication and coordination. These efforts demonstrate that working together on FUDS can achieve results and serve as a model for future endeavors.

All comments included in the enclosure are intended to improve the accuracy of the draft report. If you have any questions about these comments, please contact René P. Wynn, of my staff, at (703) 603-0049.

Sincerely,

A handwritten signature in black ink, appearing to read "Marianne L. Horinko".

Marianne Lamont Horinko
Assistant Administrator

Enclosure

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Appendix V: GAO Contacts and Staff Acknowledgments

GAO Contacts

Ms. Anu K. Mittal, (202) 512-9846

Edward Zadjura, (202) 512-9914

Acknowledgments

In addition to those named above, Gary L. Jones, Glenn C. Fischer, James Musial, and Pauline Seretakis made key contributions to this report. Also contributing to this report were Doreen S. Feldman, Art James, Nancy Crothers, and Laura Shumway.

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