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**Stronger Efforts Needed by EPA to
Control Toxic Water Pollution**

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Before the
Subcommittee on Environment, Energy,
and Natural Resources
Committee on Government Operations
U.S. House of Representatives



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Mr. Chairman and Members of the Subcommittee:

We are pleased to be here to discuss our report, which you are releasing today, on the Environmental Protection Agency's (EPA) and states' efforts to control toxic pollution of the nation's surface waters, as required by the Clean Water Act.¹ Our report assesses (1) EPA's and states' efforts to identify waters heavily polluted ("impaired") by toxic pollutants and to develop strategies to control discharges into these waters, (2) the extent to which existing water pollution control programs and activities comprehensively control all types and sources of toxic pollution, and (3) innovative approaches EPA and states are using to address resource constraints that hamper effective control of toxic discharges.

In summary, while the quality of some of the nation's rivers, lakes, and streams has improved in recent years, many of these waters remain polluted by toxic pollutants such as heavy metals, pesticides, and organic chemicals. These toxic pollutants pose serious threats to aquatic life and may be linked to cancer and other human health problems. Among the problems we found with EPA's and states' efforts to deal with toxic water pollution are the following:

- EPA and states did not identify many of the nation's impaired waters because most states have monitored only a minority of their waters. Furthermore, many of the strategies developed to address the relatively few impaired waters targeted for cleanup do not necessarily involve stricter pollutant limits.

¹Water Pollution: Stronger Efforts Needed by EPA to Control Toxic Water Pollution (GAO/RCED-91-154, July 25, 1991).

-- Some of the problems EPA and states encountered when trying to identify impaired waters are indicative of broader problems affecting their overall efforts to effectively control toxic pollution entering the nation's waters. For example, the same monitoring problems that hindered identification of impaired waters have also affected states' abilities to determine the full extent and sources of toxic pollution problems. We also found problems in other functions performed by EPA and states to control toxic pollution.

-- EPA and state officials attribute many of the problems affecting their efforts to effectively implement water pollution control programs to financial resource constraints. To respond to these problems, some states use alternative financing mechanisms, such as fees, to generate additional revenue to support their programs. Also, EPA and some states and industries have begun integrating prevention practices into their existing pollution control programs to prevent toxic discharges to surface waters. A number of barriers, however, currently impede wider use of both approaches.

Before discussing our report findings, I would like to provide a little background on the efforts of the Congress, EPA, and the states to deal with toxic water pollution.

BACKGROUND

In 1972 the Clean Water Act established programs that control the amounts of harmful pollutants facilities can discharge directly into the nation's receiving waters and indirectly into these waters through municipal sewage treatment facilities. Subsequent amendments added specific requirements to focus attention on controlling toxic pollutants. In particular, these amendments

required EPA to regulate a list of specific toxic pollutants and to promulgate national effluent guidelines to control toxic discharges from certain categories of industries.

A key requirement of the Water Quality Act of 1987, that amended the Clean Water Act, required EPA and states to identify, on a one-time basis, waters impaired by toxic pollutants (commonly referred to as "toxic hotspots") and by nontoxic pollutants and to develop strategies to clean up these waters. Among its other provisions, this act established deadlines for identifying and cleaning up the impaired waters and implementing other key toxic pollution control requirements.

Overall, EPA's and states' efforts to control toxic pollution generally involve four key functions: (1) monitoring water quality; (2) developing national effluent guidelines and criteria documents for setting toxic discharge limits; (3) incorporating toxic limits into states' water quality standards and/or discharge permits; and (4) having dischargers comply with, and EPA and states enforce, these limits. In addition, states have developed program plans to address nonpoint source pollution that comes from multiple sources such as mining, construction, and agricultural runoff.

Mr. Chairman, I would now like to discuss each of our report findings in more detail.

FEW IMPAIRED WATERS ARE TARGETED
FOR MORE STRINGENT REGULATION

To begin with, there are several reasons why such a small number of the nation's impaired waters have been targeted for cleanup. First, most states have been unable to monitor a large portion of their waters. For example, only 29 percent of the nation's total river miles have been monitored. State officials explained to us that (1) there is no national monitoring

requirement that compels them to comprehensively collect toxic pollution data for either point, municipal and industrial facilities, or nonpoint sources and (2) many states do not have the laboratory capabilities and financial resources necessary to support an extensive toxic monitoring program.

Second, more stringent regulatory controls are required only for a small percentage of the impaired waters that were identified. The Water Quality Act required EPA and states to identify impaired waters on three lists, which became known as the long, medium, and short lists. The long list was to be the most comprehensive and include waters impaired by point and/or nonpoint source discharges of toxic, conventional, and/or nonconventional pollutants. This list includes 18,770 waters nationwide. The medium list, which is a subset of the long list, was to include waters impaired by point and/or nonpoint source discharges of any of the 126 priority toxic pollutants. The short list, which is also a subset of the long list, was to include waters whose impairment was due entirely or substantially to point source discharges of any of the 126 priority pollutants. These waters are commonly referred to as "toxic hotspots." This list includes 529 impaired waters.

EPA regulations only required states to identify and list point sources discharging priority pollutants to the 529 waters included on the short list. By definition, this list excludes waters that may be impaired by conventional or nonpriority toxic pollutants, or by unidentifiable point sources and nonpoint source discharges. According to some state officials we interviewed, nonpriority toxic pollutants are causing serious water quality problems.

Finally, the control strategies, which are revised discharge permits for facilities discharging to the 529 impaired waters targeted for cleanup, do not necessarily include more stringent

discharge limits. In many cases, they may only include an accelerated compliance deadline.

WATER POLLUTION PROGRAMS ARE NOT
EFFECTIVELY CONTROLLING TOXIC POLLUTION

Some of the problems EPA and states encountered when trying to identify impaired waters are indicative of broader problems affecting their overall efforts to effectively control toxic pollution entering the nation's waters. For example, the same monitoring problems that hindered identification of impaired waters have also affected states' abilities in determining the full extent and sources of toxic pollution problems. In fact, we found problems in each of the four key functions EPA and states use to control toxic pollution of the nation's surface waters.

Monitoring

According to EPA's National Water Quality Inventory: 1988 Report to Congress, states have assessed the water quality of 29 percent of all U.S. river miles² and 41 percent of the nation's total lake acres. EPA and states are uncertain of the water quality of the remaining river miles and lake acres.

EPA also acknowledges that when monitoring does occur, the quality varies considerably among the states and that this too contributes significantly to uncertainty about the full extent of toxic pollution in the nation's waters. Among the key problems affecting the quality of monitoring are that (1) actual sampling of waters is frequently not done to assess water quality, (2) monitoring is largely confined to areas where known problems exist, and (3) little is done to detect toxic pollution from nonpoint sources.

²River miles refers to river and stream miles combined.

EPA and state officials told us that they lack the staff and financial resources necessary to adequately assess and routinely monitor all their waters. They added that when available federal and state funds are reduced, ambient monitoring is often the first water quality activity cut.

Setting Discharge Limits

EPA has been slow to revise existing effluent guidelines and to develop new ones to control toxic water pollution. These guidelines contain specific limits on discharges from key industries and are essential for controlling toxic pollution from these types of facilities. Nevertheless, our review of summary data prepared by EPA showed that 19 of 35 guidelines specifically aimed at controlling toxic pollutants have not been revised in over 5 years, or since they were first issued. Nine of these 19 guidelines date back to the 1970s.

EPA officials acknowledged that they have not reviewed the adequacy of the guidelines and/or updated many of those that need to be revised to reflect advances in treatment technologies, as required by the Clean Water Act. In addition, EPA acknowledged that some of the guidelines do not include limits for all toxic pollutants discharged by the industries covered and that there are industries discharging toxic and nonconventional pollutants for which national guidelines have not been published.

Similarly, criteria documents developed by EPA and used by states to establish numeric discharge limits only cover a limited number of toxic pollutants and have been updated infrequently. Here, too, EPA officials told us that the lack of resources has hampered their efforts to issue more timely criteria documents.

Incorporating Discharge Limits Into Permits

States use EPA's criteria documents for the priority pollutants and some nonpriority pollutants as the basis for incorporating water quality-based numeric discharge limits into their water quality standards and, subsequently, their discharge permits. In addition, EPA and state officials use the technology-based national effluent guidelines to incorporate limits into discharge permits.

We found that even when criteria documents do exist, states are often reluctant to adopt numeric discharge limits based on EPA's criteria. Among the reasons state officials cited were that they sometimes question the validity of scientific data, methodology underlying some toxic criteria, and/or laboratory analyses EPA used to develop the documents. In the absence of effluent guidelines, EPA and state permit writers must rely on their professional judgment to set discharge limits--a process that often produces inconsistent and less defensible results.

Ensuring Compliance

While EPA and state officials speculate that both industrial and municipal facilities will encounter problems complying with new and more stringent permit limits, they believe noncompliance will be a particular problem for municipal facilities.

These facilities are already experiencing greater difficulties complying with current permit conditions. For example, as noted in our 1989 report, Water Pollution: Improved Monitoring and Enforcement Needed for Toxic Pollutants Entering Sewers (GAO/RCED-89-101, Apr. 25, 1989), industrial users of municipal facilities were in considerable noncompliance with toxic discharge limits, and these facilities are frequently not equipped to treat toxic wastewaters. We also noted that for a variety of reasons,

municipal facilities are often reluctant to take enforcement action to bring users back into compliance. Many EPA and state regulatory officials agree that more stringent toxic pollution control requirements may exacerbate such problems and give impetus to requests by permittees for variances from these requirements.

ALTERNATIVE FINANCING AND PREVENTION STRATEGIES

Our report makes several recommendations to address the problems I just discussed. We recommended, for example, that EPA accelerate the development and revision of national effluent guidelines and criteria documents by focusing on the most harmful toxic pollutants being discharged to the nation's receiving waters. We also recommended that the agency issue guidance directing states to conduct more ambient monitoring for toxic pollutants as part of the biennial water quality inventory reporting process and to assess the quality of a minimum percentage of their surface water-miles during each biennial review cycle.

Although these recommended actions would help to achieve water quality goals mandated by the Clean Water Act, they would add significantly to the financial burden EPA and states are already experiencing in controlling toxic water pollution. However, to deal with the existing resource dilemma, at least 30 states use alternative financing mechanisms (AFMs), such as fees and taxes paid by dischargers, to generate additional revenues for water quality programs and activities.

There are considerable variations among states, however, on the types and number of AFMs used, the total amount of revenues generated, and the use of the generated revenues. According to a 1989 study by the National Governors' Association, AFMs accounted for between 2 percent and 94 percent of the responding states'

total water quality program budgets in 1988. The study also found that 12 of the 48 states and territories did not use AFMs.

We found similar variations in the use of AFMs among states. In Pennsylvania, for example, we found that 67 percent of all fees collected annually from AFMs go back into the state's general revenue fund rather than to fund water pollution control activities. On the other hand, in New Jersey, all revenues generated by AFMs are used to support the specific environmental program that generated the funds. One New Jersey official estimated that 61 percent (or about \$31 million) of the state's Water Resources Division's operating budget came from AFMs in 1990.

Despite the growing support for AFMs as a means of supplementing traditional funding sources for water programs nationwide, these tools still have a long way to go before they can significantly close the gap between funding needs and available resources. One of the primary reasons states do not rely more on AFMs is their reluctance to impose additional pollution control costs on industries. Georgia officials, for example, explained that AFMs have received little support from the state legislature because legislators fear that the added cost of pollution control will discourage industrial development, or cause existing industries to move to states that currently do not use such mechanisms. Industrial flight, in turn, would damage the state's economy.

Pollution Prevention as an Alternative to Controlling Toxic Water Pollution

While increased funding will greatly improve efforts to control toxic water pollution, EPA and state officials have come to realize that the existing command-and-control approach can go only so far in dealing with pollution problems. In fact, EPA has predicted that continued use of this approach to reduce water

pollution is expected to cost about \$58 billion annually by the year 2000.

Moreover, there are limits to how effectively these programs can address toxic water pollution. For instance, some toxic pollution problems can be remedied only at enormous expense, and some hazardous chemicals cannot be effectively removed from surface waters at any price. Furthermore, many pollutants come from a variety of largely unregulated activities such as dry cleaning, paint stripping, and degreasing operations. These and other small sources are so numerous that it is difficult to control them through the command-and-control approach.

Recognizing the limitations of implementing the command-and-control approach, EPA and some states and companies have begun integrating prevention practices into their existing pollution control programs. Nevertheless, a number of institutional, technical, financial, and political barriers are hindering greater reliance on prevention strategies. Resource constraints, for instance, inhibit industries' efforts to change their manufacturing or treatment processes and EPA's and states' efforts to provide technical assistance. For example, according to EPA and state officials in Region IV, some small companies have expressed concern that they do not have the financial resources necessary to hire competent and experienced experts to help determine or change their manufacturing processes to utilize prevention opportunities. With most of EPA's and states' resources dedicated to mandated programs, officials said that few of their resources are available to provide assistance to these companies.

Political barriers include reluctance among state and local governments to encourage or require industries to adopt prevention strategies for fear that such actions might lead them to relocate elsewhere. For this reason, some state legislatures have resisted

passage of prevention-oriented laws, or have been reluctant to provide funds to implement or support prevention activities.

In recent years, EPA has undertaken several activities to help deal with these barriers. A major action was the creation of the Office of Pollution Prevention in 1988, which is responsible for overseeing all of EPA's prevention efforts and for developing EPA's national strategy for implementing prevention practices. Other EPA prevention activities include providing grants to states to address pollution on a multimedia basis, establishing a municipal water pollution prevention program, and establishing cooperative workgroups with states and private sector representatives to exchange information and ideas about pollution prevention practices.

Nevertheless, the full potential of these efforts is constrained somewhat by the Clean Water Act, which does not promote effective implementation of prevention practices for several reasons. First, it mandates a command-and-control approach, which requires that the bulk of federal, state, and industry resources and attention be devoted to controlling toxic pollution instead of preventing it. Second, it does not give EPA or states the authority to compel facilities to incorporate prevention practices into their operations, although such activities can be included in enforcement settlements to ensure dischargers' compliance with permit requirements. Third, it does not authorize the use of fees or taxes to promote pollution prevention. As a result, EPA has had to rely on states and industries to voluntarily implement prevention strategies in their operations, and many have been reluctant to do so.

Accordingly, EPA regional and headquarters officials, as well as some state officials, told us that an added emphasis on prevention in the Clean Water Act could go a long way toward instituting effective prevention practices at the federal, state,

and industry levels. As discussed in the following section, a broader national effort to encourage greater use of AFMs could also be designed to further promote pollution prevention practices.

Encouraging Greater Use of
Alternative Financing Mechanisms
and Prevention Practices

One alternative to encourage greater use of both AFMs and toxic water pollution prevention practices could be to require, on a nationwide basis, the use of pollutant-based fees or taxes on industrial dischargers. Such a national requirement would (1) help raise revenues to support essential pollution control programs and activities and (2) serve as an incentive for industries to reduce or eliminate their toxic discharges.

As mentioned earlier, at least 30 states use AFMs to generate additional revenue for their water quality programs. Also, EPA is trying to encourage wider use of these mechanisms by publicizing their usefulness in helping to deal with existing funding problems. However, encouragement alone is likely to do little to close the enormous and growing gap between program needs and available resources because some states officials are concerned that the added cost of pollution control could lead industries to relocate to other states. A nationwide requirement whereby all states implement such a mechanism would help to remove this economic disincentive.

Such a fee system was recently authorized under the 1990 amendments to the Clean Air Act as part of a nationwide air permit program. The amendments require dischargers to pay an annual fee or the equivalent for discharging toxic pollutants. The fee, which can increase each year, must be sufficient to cover all reasonable direct and indirect costs required to develop and administer the permit program. EPA must promulgate regulations for implementing

the system and determining reasonable program costs. States will collect the fees.

While we have not evaluated all implications of the fee system authorized by the Clean Air Act Amendments of 1990, we believe that a similar national pollutant-based fee system, if properly designed, could help to generate additional revenue to support EPA's and states' toxic water pollution control efforts. It could also encourage greater use of innovative pollution prevention techniques and eliminate barriers currently hindering greater use of these approaches. Accordingly, our report recommends that the Congress consider requiring EPA to develop a pollutant-based discharger fee system that would generate additional revenue for water pollution programs and serve as an incentive for dischargers to use pollution prevention techniques.

CONCLUSIONS

Mr. Chairman, a number of the difficulties EPA and states encountered when trying to identify impaired waters are indicative of broader problems affecting their overall efforts to control toxic pollution entering the nation's waters. In fact, we found significant problems in each of the key functions EPA and states must perform to deal effectively with toxic water pollution. Moreover, these functions primarily address pollution discharged from point sources. Little attention is focused on controlling toxic pollution caused by nonpoint sources.

Our report made several recommendations to deal with these problems. However, solutions to the nation's toxic water pollution problems are costly and EPA and the states are already hard-pressed to deal with the additional environmental responsibilities they have inherited in recent years. While many states are raising additional funds through alternative financing mechanisms, certain barriers have inhibited these efforts.

At the same time, EPA, states, and industries have all come to recognize that there are limits to how effectively the existing command-and-control regulatory framework can address water pollution problems. Accordingly, they have begun to emphasize prevention as an alternative to correcting these problems. Here too, however, a number of barriers currently hinder greater use of prevention practices.

We believe that a national pollutant-based fee system, similar to the one recently authorized by the Clean Air Act, could go a long way towards overcoming these barriers by helping to raise additional revenue to support water pollution programs and by encouraging industries to reduce or eliminate their toxic discharges.

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Mr. Chairman, this concludes my prepared statement. At this time, I would be pleased to respond to any questions you or other members of the Subcommittee may have.