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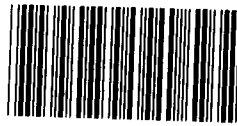
United States General Accounting Office

GAO

Transition Series

December 1992

# Environmental Protection Issues



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**Comptroller General  
of the United States**

December 1992


The Speaker of the House of Representatives  
The Majority Leader of the Senate

In response to your request, this transition series report discusses the major environmental policy, management, and program issues facing the Congress and the new administration. These issues include the challenges of (1) meeting environmental requirements with limited resources, (2) developing information to support regulatory programs and measure environmental results, (3) establishing accountability for correcting program weaknesses, and (4) strengthening global environmental protection efforts.

As part of our high-risk series on program areas vulnerable to waste, fraud, abuse, and mismanagement, we are issuing a related report, Superfund Program Management (GAO/HR-93-10, Dec. 1992).

The GAO products upon which this transition series report is based are listed at the end of the report.

We are also sending copies of this report to the President-elect, the Republican leadership of the Congress, the appropriate congressional committees, and the Administrator-designate of the Environmental Protection Agency.



Charles A. Bowsler

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# Environmental Protection Issues

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As a result of the legislation enacted over the last 20 years, American industry and government are currently spending about \$115 billion a year to meet environmental goals. The amount is expected to increase to \$160 billion a year by the end of the decade. State and local governments, which will have to bear a particularly large share of this increase, face over \$80 billion in investment costs for wastewater alone, and the federal government will have to spend about \$200 billion simply to clean up contaminated Department of Defense and Department of Energy installations.

Under current economic conditions, meeting these financing challenges will be an important concern of all levels of government. In the next few years, the Congress and the new administration will have to deal with these difficult issues as a number of major environmental statutes—including those that govern pesticides, toxic chemicals, hazardous and solid waste disposal, surface water pollution, drinking water safety, and the cleanup of abandoned hazardous waste sites—are scheduled for reauthorization. In addition, the Congress may again consider proposals to elevate the Environmental Protection Agency (EPA) to a Cabinet department, a

move we have endorsed but which, we cautioned, would have to be accompanied by improvements in the agency's management. In the international arena, the Congress and the administration will have to consider how to implement the environmental agreements reached during the United Nations Conference on Environment and Development and weigh the environmental implications of the North American Free Trade Agreement.

In our 1988 transition report, we discussed problems in overall environmental program management; improvements needed in the management of hazardous waste programs; and the need for EPA to create a new policy for reducing urban smog, focus greater attention on environmental assessments for pesticides, and develop a comprehensive approach to controlling surface water pollution. While EPA has made some progress in each of these areas, our work over the last 4 years suggests that dealing with the root causes of these problems will require changes in policies and agencywide management practices.

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# Meeting Environmental Requirements With Limited Resources

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Given high public expectations for environmental protection, one of the most important issues the Congress and the administration will have to contend with is the limited resources available to meet environmental requirements. Currently, the United States—both government and industry—spends about \$115 billion a year to meet environmental goals. This investment is expected to rise to about \$160 billion over the next decade. Altogether, the nation has invested about \$1 trillion in environmental protection over the last 20 years. Despite the current economic downturn, opinion polls show that Americans support continued and even additional spending on environmental protection. Nevertheless, the federal budget deficit limits the federal government's ability to respond. State and local governments are also confronting fiscal crises, and industry's capacity to invest further is similarly constrained.

Resource limitations have particularly strained EPA. The Congress has substantially increased the agency's responsibilities for regulating hazardous waste, drinking water, and water and air pollution, among other things. However, the agency's fiscal year 1992 operating budget, in constant dollars,



was roughly the same as it was in fiscal year 1979.

With the widening gulf between EPA's responsibilities and the resources available to carry them out, EPA has often been unable to meet statutory mandates and to implement plans for addressing pollution, as the following example illustrates. The agency believes that most of the nation's remaining water quality problems stem from nonpoint, or diffuse, sources of water pollution resulting from agricultural and urban runoff. EPA has developed an ambitious plan to deal with nonpoint pollution. However, for lack of resources, the agency has hardly acted on key elements of the plan, including the development of monitoring techniques to help states determine the extent of their nonpoint source pollution problems and the effectiveness of corrective actions.

Recognizing that the federal budget deficit and the Omnibus Budget Reconciliation Act make increased funding for EPA unlikely, we have recommended a number of broad management improvements to make the agency's programs more cost-effective. EPA has begun to act on a number of these recommendations. But ensuring that these

improvements—inherently long-term in nature—are made will require the sustained attention of both the Congress and the new administration.

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**Risk-Based  
Priorities Could  
Better Allocate  
Resources**

Establishing priorities among programs on the basis of the risk to public health and the environment is one of the keys to improved environmental management. Setting priorities in this way will be difficult, however, as long as public policy and, in particular, the budget allocation process are dominated by public perceptions of risk rather than by scientific and expert judgment. Currently, many environmental problems that EPA experts and others judge to be of relatively low risk, such as contamination from hazardous waste sites, receive extensive public attention and federal resources, while problems judged to be of greater risk, such as global warming and radon and other types of indoor air pollution, receive less attention and fewer resources. To correct this imbalance, we have recommended that the Congress and EPA work together to find opportunities to shift resources according to the level of risk involved.

Recognizing that risk assessments alone are not sufficient for setting environmental policy and that public opinion contributes heavily to the Congress's agenda, we have pointed out that the public must also be kept better informed about environmental risks. We have therefore recommended that EPA direct some of the agency's educational activities specifically toward informing the public about the relative seriousness of the nation's environmental problems.

The federal government will also have to set priorities for the cleanup of federal facilities. Years of neglect at Department of Defense and Department of Energy installations have left a legacy of contamination that these agencies now estimate may cost close to \$200 billion to correct. These estimates do not take into account the full federal cleanup liability. The total will also include other agencies' cleanup costs, such as the Department of the Interior's, which have not yet been estimated. Although these cleanups will increasingly be competing for limited federal funds, EPA has not yet developed a system for assessing the health and environmental risks posed by federal sites relative to one another and to other environmental problems and for setting priorities accordingly.

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**Nonregulatory  
Alternatives  
Could Reduce  
Compliance Costs**

To help industry achieve greater cost efficiencies in complying with environmental standards, we have advocated making greater use of nonregulatory alternatives. The current regulatory structure of command-and-control, which requires polluters to meet defined health or technology-based standards, has succeeded in dealing with large stationary sources of pollution. However, this structure has proved to be less effective and very costly for controlling smaller and more diffuse sources.

Market-based incentives—which include taxes on pollution, trading in pollutant emission “rights,” and public disclosure of polluters’ emissions—all give polluters a financial reason to reduce pollution without specifying how they should do so. Pollution prevention, which eliminates or reduces pollution at its source rather than try to contain or treat it after it has been generated, has already been successfully adopted by some companies, which have also realized cost savings as a result.

With the Clean Water Act, the Resource Conservation and Recovery Act, and the Safe Drinking Water Act, among others, scheduled for reauthorization, the

administration and the Congress will have numerous opportunities to supplement traditional regulation with these nonregulatory alternatives. We have therefore called for EPA to work with the Congress to identify opportunities for revising legislation.

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**Alternative  
Approaches  
Needed to Ensure  
State and Local  
Capacity to  
Respond**

Finally, we are concerned about the ability of state and local governments to bear the growing financial burden associated with meeting environmental objectives. In environmental programs, as in other areas, the federal government has been shifting to state and local governments the responsibility for implementing and financing major programs. Long-term federal construction grants for wastewater treatment plants, for example, have been replaced with short-term grants to capitalize state revolving loan funds. These funds are expected to meet only about one-third of local communities' financing needs for wastewater treatment, which are estimated to exceed \$80 billion nationwide. We therefore believe there is a need for alternative financing, technology, and managerial approaches to meeting the environmental requirements of states and localities.

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## Developing Necessary Scientific and Monitoring Information

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Although EPA's regulatory programs depend heavily on scientific information on the health and environmental effects of chemicals and pollutants, these data often do not exist or, when they are available, are of poor quality or difficult to access and use. Moreover, despite the fact that environmental programs are designed to clean up or prevent unacceptable levels of pollution, EPA has not collected the information necessary to judge the success of its programs.

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### Data Collection and Management Need Improvement

In order to assess environmental risks and address those that are most likely to cause the greatest harm, EPA needs to have better data on acute and chronic health effects. We have therefore recommended that the agency develop a research agenda clearly focused on improving its risk assessment capabilities. EPA also needs better data on whether a particular substance is harmful to human health and the environment in order to take appropriate regulatory actions and to identify new and emerging problems. The Toxic Substances Control Act gives EPA specific legislative authority to obtain this information from chemical manufacturers. But in the 16 years since the law's passage, EPA has been reluctant to require these data.

As a result, EPA has identified for testing less than 1 percent of more than 70,000 chemicals and has complete test data for only 22 chemicals.

Even data that EPA has available are often inadequate and poorly managed. For example, EPA has three data bases for regulating disinfectants, yet EPA officials believe that as much as 60 percent of the data on disinfectant product claims are inaccurate or incomplete. Likewise, EPA maintains nine separate data base management systems to track information about pesticides awaiting reregistration, including the results of health and environmental studies. Yet, in the summer of 1991, when a trainload of metam sodium spilled into the Sacramento River, EPA was unaware of information in its files indicating that metam sodium can cause birth defects. As a result, the agency could not warn pregnant women and workers in the area of the spill of the pesticide's hazards.

Moreover, EPA has traditionally enforced environmental laws by identifying violations and taking enforcement actions separately for each environmental medium—air, water, land—and regulated substance. EPA's information systems have been designed

largely to accommodate these compartmentalized approaches. Nevertheless, some of the agency's highest priorities—pollution prevention, management for minimizing risk across multiple environmental threats, and coordinated enforcement—depend on using data in a much more integrated way.

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**Environmental  
Indicators Could  
Measure Program  
Success**

Although environmental programs are designed to clean up or prevent unacceptable levels of pollution, EPA has not collected the information necessary to judge the success of its programs. While EPA has developed some measures of environmental outcomes—meeting national air quality standards, for example—the agency has generally relied on activity-based indicators, such as numbers of permits issued or enforcement actions taken, to track its progress. EPA has historically relied on activity-based measures because of the inherent technical difficulties of establishing linkages between program activities and environmental improvements and conditions. Although EPA has had a national environmental monitoring program, which is designed to measure the success of the agency's activities, the program has been cut back over the years as a result of leadership



changes and decreased funding. Because EPA has traditionally considered itself to be primarily a regulatory agency, it has focused its attention and resources almost exclusively on setting standards and issuing permits rather than on developing the information necessary to measure environmental results.

EPA has made some effort to refocus its management information system on results and has begun to develop environmental indicators to use in this system. However, considerable work remains to be done. One improvement that EPA could make is to establish a central unit for collecting, analyzing, and disseminating environmental data. We have therefore suggested that the Congress consider establishing, as part of a Cabinet department for the environment, a bureau or center for environmental statistics.

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# Ensuring Accountability for Correcting Program Weaknesses

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After reporting for many years on weaknesses that affected the efficiency and effectiveness of virtually all of EPA's programs, we have continued to see the same basic problems, despite recommending numerous corrective actions. The result is persistent inefficiency, as programs continue to incur costs without necessarily achieving the anticipated results.

For example, in a 1990 report on the drinking water program, we found that (1) drinking water problems were going undetected, (2) many of those that were detected were not being reported to EPA, and (3) enforcement was often neither timely nor effective in bringing water systems back into compliance. To correct these problems, we recommended that the agency ensure that regions and states improve compliance with drinking water regulations. EPA responded to our findings and recommendations with written guidance to regions and states. However, without substantially improved oversight by headquarters to ensure that this guidance is followed, it is not clear that the problem will be adequately addressed.

Likewise, although problems with Superfund contractor cost control persisted for years, EPA managers did not pay sufficient attention

to contract management or follow through on promised reforms. EPA is heavily dependent on contractors, spending more than \$1 billion in fiscal year 1991, most of it in the Superfund program. Because of its vulnerability to fraud, waste, and abuse, we identified Superfund as one of our high-risk areas in the federal government. As we highlight in a report on the high-risk Superfund program, Superfund's largest contractors work under cost-reimbursable contracts that promise to pay all of a contractor's allowable costs. This requires the agency to have in place effective controls to ensure that such costs are proper. We found, however, that EPA does not adequately review contractors' spending plans before approving them, check bills for reasonableness before paying them, or verify charges later by timely audits of contractors' records. While EPA has not addressed all of our concerns, it has begun several initiatives to improve contract oversight, including the development of independent cost estimates against which it can compare contractors' spending proposals.

In other areas, as well, EPA has frequently taken the first step toward corrective action but seldom followed through to ensure that its directives are carried out. For example, in

our 1988 transition report, we reported that EPA was developing an integrated financial management system and recommended that the agency provide sustained leadership and a high priority for its effort. However, 3 years later, the EPA Inspector General's office found that the system had still not been implemented because EPA had not devoted adequate resources or management attention. A lack of follow-through has also characterized attempts made by EPA to improve its enforcement programs. Following numerous GAO and EPA Inspector General reviews pointing out that EPA's regional offices and the states were not assessing penalties against violators at least as great as the amount by which the companies benefit by not being in compliance, EPA responded by reminding its regions, in a memorandum, to adhere to agency policies and to document the reasons for any penalty reductions. In a subsequent review, however, we found that little had changed; two-thirds of the closed cases we examined did not document penalty calculations, making it difficult to determine whether agency policies were followed.

To their credit, EPA's Administrator and Deputy Administrator have attempted to improve management accountability using

the annual process for assessing and reporting on material weaknesses, which is required by the Federal Managers' Financial Integrity Act (FMFIA). To oversee FMFIA, EPA created a Senior Council on Management Controls to focus high-level management attention on problems and solutions. The Council has been extremely valuable and should become a permanent mechanism for highlighting important management problems. Still needed, however, is a long-term commitment by senior managers to review the results of their corrective actions to make sure that they have been successful.

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# Strengthening Global Environmental Protection Efforts

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Resolving today's environmental problems—including global climate change, depletion of the stratospheric ozone layer, and deforestation, among others—will require an unprecedented level of international cooperation. At the United Nations Conference on Environment and Development in Rio de Janeiro in June 1992, participating nations drew up an action program for environmentally sustainable development as well as conventions to address climate change and threats to biological diversity. But while reaching these agreements is, in itself, a noteworthy accomplishment, their effectiveness in correcting problems ultimately depends on how well the agreements are implemented. Moreover, because the costs of compliance are high, uneven implementation may place the countries that carry out the agreements at a competitive disadvantage with those that do not.

Since 1972, the number of international environmental agreements in which the United States participates, or in which it has a significant interest, has grown from fewer than 50 to about 170. Yet little is known about how well environmental agreements are being implemented. In a review of eight major international agreements, we found

that the reports that parties are supposed to provide on their compliance with agreements are often late, incomplete, or not submitted at all, and the secretariats responsible for overseeing the agreements lack the authority or resources to monitor implementation independently. In addition, many parties, particularly developing countries, lack the technical and financial capability to comply.

To strengthen international environmental agreements, we have suggested that the U.S. government could support efforts to improve information on implementation. Such information could be used to bring pressure on parties to live up to their commitments and could increase public support for meeting obligations. In addition, information on implementation could be used to target assistance to countries in need. The prospect of assistance could provide an additional incentive for such countries to report the status of their implementation efforts. In the development and ratification of treaties and in its foreign assistance and support of international institutions, the U.S. government could establish goals for improving the availability of information on implementation, increasing public access to the information, and improving the ability of

developing countries to both participate in and carry out environmental agreements.

The environment has also become a critical element in trade agreements and will have to be addressed directly in future negotiations. As the United States and its trading partners seek to phase out tariffs and traditional barriers to free trade, incompatible environmental standards can themselves be perceived as trade barriers and can stand in the way of trade liberalization. This, in turn, generates concern about the potential for trade agreements to encourage the adoption of “lowest common denominator” environmental standards that would be weaker than existing U.S. standards.

Moreover, existing trade agreements do not fully address environmental issues. The General Agreement on Tariffs and Trade (GATT)—the major international trade agreement—was developed long before countries had many environmental laws and international environmental agreements. And when the North American Free Trade Agreement (NAFTA) was created, the administration promised to deal with environmental issues in a separate process, outside of the agreement itself. However, in a review of U.S. and Mexican pesticide



standards, we found that plans by the two countries to reconcile differences in standards would not address all differences. In addition, there is an absence of enforcement and monitoring capabilities on the part of the Mexican government. The U.S. government will therefore have to recognize the potential for conflicts and search for new ways to reconcile them.

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## Related GAO Products

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Superfund Program Management  
(GAO/HR-93-10, Dec. 1992).

International Environment: Strengthening  
the Implementation of Environmental  
Agreements (GAO/RCED-92-188, Aug 24, 1992).

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

Drinking Water: Widening Gap Between  
Needs and Available Resources Threatens  
Vital EPA Program (GAO/RCED-92-184, July 6,  
1992).

Pesticides: Comparison of U.S. and Mexican  
Pesticide Standards and Enforcement  
(GAO/RCED-92-140, June 17, 1992).

Environmental Enforcement: EPA Needs a  
Better Strategy to Manage Its Cross-Media  
Information (GAO/IMTEC-92-14, Apr. 2, 1992).

Water Pollution: State Revolving Loan Funds  
Insufficient to Meet Wastewater Treatment  
Needs (GAO/RCED-92-35, Jan. 29, 1992).

Pesticides: EPA's Information Systems  
Provide Inadequate Support for

Reregistration (GAO/T-IMTEC-92-3, Oct. 30, 1991).

Water Pollution: Greater EPA Leadership Needed to Reduce Nonpoint Source Pollution (GAO/RCED-91-10, Oct. 15, 1991).

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

Environmental Enforcement: Penalties May Not Recover Economic Benefits Gained by Violators (GAO/RCED-91-166, June 17, 1991).

Disinfectants: Concerns Over the Integrity of EPA's Data Bases (GAO/RCED-90-232, Sept. 21, 1990).

Toxic Substances: EPA's Chemical Testing Program Has Made Little Progress (GAO/RCED-90-112, Apr. 25, 1990).

Creation of a Department of Environmental Protection (GAO/T-RCED-90-25, Feb. 7, 1990).

Environmental Protection Agency Issues (GAO/OCG-89-20TR, Nov. 1988).

Environmental Protection Agency: Protecting Human Health and the

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**Related GAO Products**

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**Environment Through Improved  
Management** (GAO/RCED-88-101, Aug 16, 1988).

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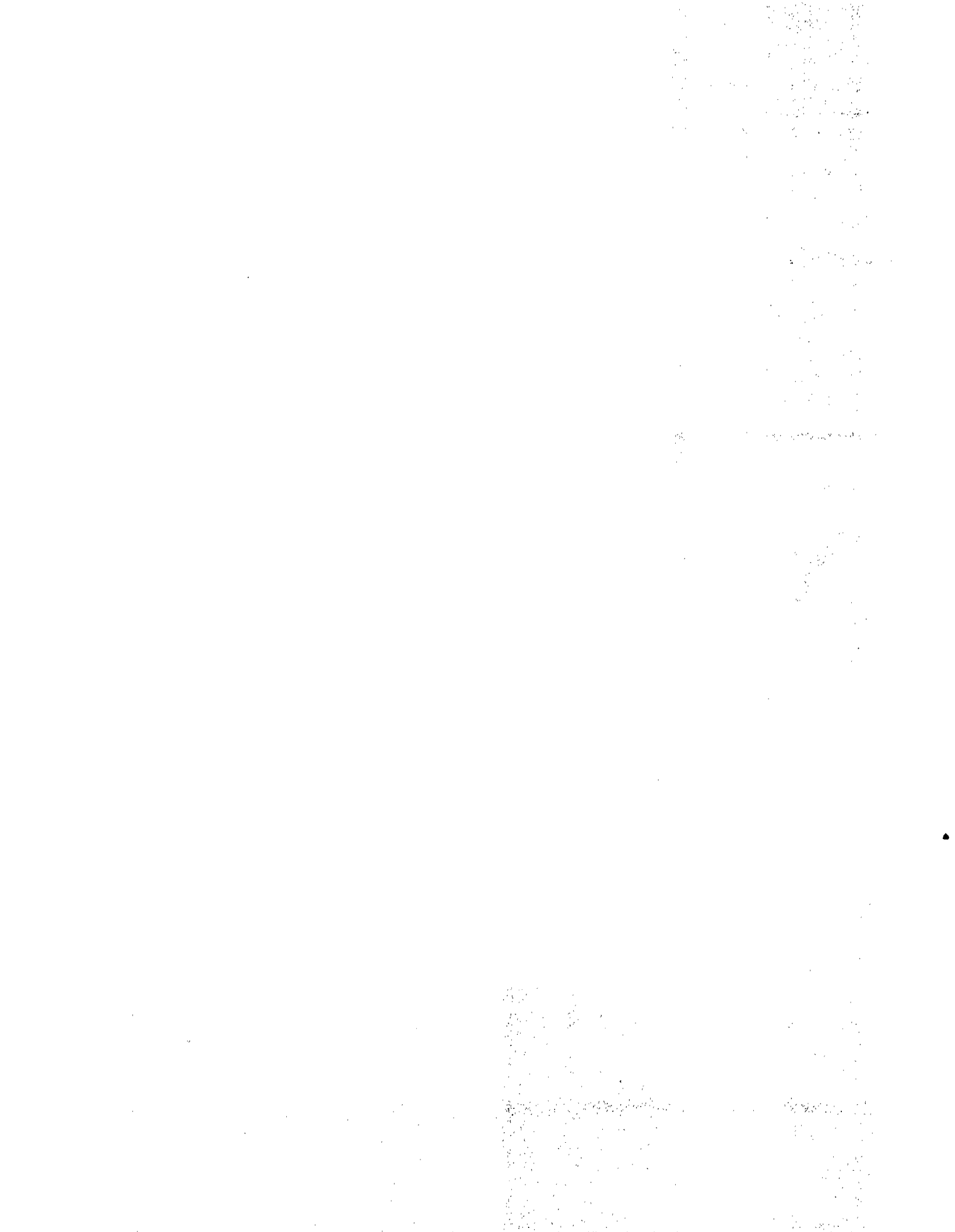
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