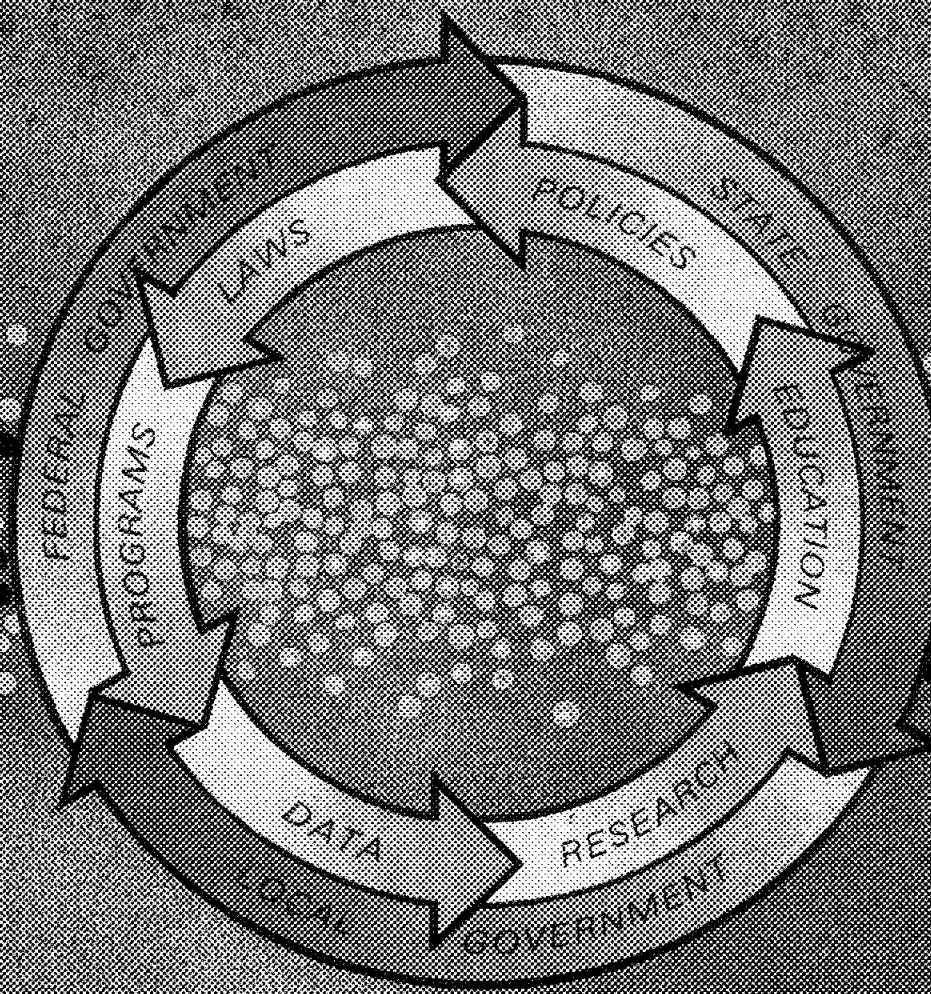




Protecting The Nation's Ground Water: EPA's Strategy For The 1990s

The Final Report Of The EPA Ground-Water Task Force



Comprehensive Ground-Water Protection

NOTE TO THE READER:

This Ground-Water Task Force Report is a statement of Agency policy and principles. It does not establish or affect legal rights or obligations. This guidance document does not establish a binding norm and is not finally determinative of the issues addressed. Agency decisions in any particular case will be made by applying the law and regulations to the specific facts of the case.



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

JUN 28 1991

OFFICE OF
THE ADMINISTRATOR

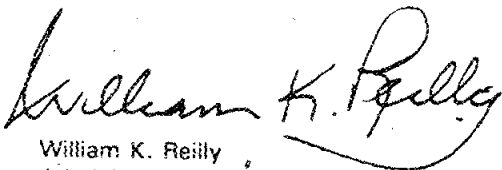
Dear Friends:

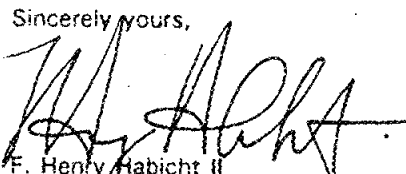
Ground-water resources are of vital importance to this country -- to the health of our citizens, the integrity of many of our ecosystems, and the vigor of our economy. We must make every effort to protect the quality of these resources, which are increasingly threatened by a variety of human activities from industrial by-products, to excessive use of agricultural chemicals, to faulty business operations, and to improper disposal of household wastes.

In 1984, the Environmental Protection Agency (EPA) issued a Ground-Water Protection Strategy which articulated what was known about protecting ground-water resources and set out an appropriate role for the Agency. Over the last several years, EPA and the States have made significant strides under the Agency's 1984 Strategy. Last year, the time was right to take a hard look at the Agency's ground-water protection efforts, and to develop a more integrated approach for moving forward with this issue in the 1990s. We formed an EPA Ground-Water Task Force of senior Agency managers from all offices with ground-water related responsibilities to develop recommendations for providing a more integrated and effective approach to *comprehensive* protection of ground-water resources. Significant input was provided to the Task Force by State and local governments, other Federal agencies, environmentalists, industry, and public interest groups.

The outcome of this review is the report "Protecting the Nation's Ground Water: EPA's Strategy for the 1990s." This report states Agency policy, accompanied by implementation principles that reflect an aggressive approach to protecting the Nation's ground-water resources; they will guide the course of EPA and State efforts over the coming years. The policy puts clear priority on preventing ground-water contamination, recognizes that ground water is a uniquely local resource for which States and local governments must assume primary responsibility, and strives to improve EPA's coordination of ground-water activities under all our statutes and programs. This policy will be reflected in EPA programs and resource allocations as we continue our partnership with State and local governments, private industry and the public in addressing this issue.

Protecting our ground-water resources is one of the most complex environmental issues we face in the 1990s. With over 50 percent of the population relying on ground water as their primary source of drinking water, and the recent EPA Science Advisory Board report which ranks the contamination of drinking water as one of the higher risks to human health, we cannot delay protecting this resource. This Task Force Report reflects the accomplishments and experience of the States and EPA over the last few years. Under this new and integrated cross-program framework for action, we can all work together to ensure that this vital resource is available for use by the present and future generations.


William K. Reilly
Administrator

Sincerely yours,

F. Henry Habicht II
Deputy Administrator



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Executive Summary

Background

A number of Federal statutes provide EPA with the authority to prevent and control sources of ground-water contamination, as well as to clean up existing contamination. During the early 1980s, EPA recognized that these authorities to protect ground water were fragmented among many different statutes and were largely undefined. As a result, in 1984 the Agency adopted a Ground-Water Protection Strategy to articulate both the problem and EPA's role in a national ground-water protection program. Under this Strategy, the Agency has focused its efforts on four major objectives:

- Building State capacity;
- Addressing sources of contamination;
- Establishing ground-water policy direction and program consistency; and
- Coordinating EPA programs

While this strategy was effective in creating momentum for States to develop and implement ground-water programs, the passage of time and growing body of experience indicated that gaps remained in protection efforts across the country. It became clear that there was a need to assess our progress and adjust our approach to take into account recent changes in statutory authorities and our increased knowledge of the issue by promoting *comprehensive* protection on the State and local level.¹

In July 1989, EPA Administrator William Reilly established a Ground-Water Task Force, chaired by Deputy Administrator F. Henry Habicht II, to review the Agency's ground-water protection program and to develop concrete principles and objectives to ensure effective and consistent decision-making in all Agency decisions affecting the resource. The Task Force included membership from all Headquarters offices with ground-water protection responsibilities and selected

Regional representation. Several work groups were created to develop recommendations on issues of special interest. In addition, a substantial outreach effort succeeded in obtaining input on two key issues - Agency principles and the character of the Federal/State relationship - from major Federal, State, local, public interest, industry and agricultural leadership groups and the Governors and agency officials of all States.

The outcomes of this effort are policy and implementation principles that are intended to set forth an aggressive approach to protecting the nation's ground-water resources and direct the course of the Agency's efforts over the coming years. It will be reflected in EPA policies, programs, and resource allocations, which will guide EPA, States and local governments, and other parties with whom we work in carrying out the Agency's ground-water responsibilities. This approach is characterized by:

¹ Under Federal statutes and EPA policy, Indian Tribes may be recognized as States for the purpose of operating national environmental programs. Throughout this report, references to States also refer to Tribal governments as well as the U.S. Territories.

- **Clear Statement of Policy:**

This document sets forth a clear statement of Agency policy, which will serve as a decision-making framework for all Agency programs relating to the ground-water resource.

- **Focus on Comprehensive Resource Management:**

This policy builds on current State activities by providing financial incentives for filling in gaps in protection efforts and building comprehensive protection programs on the State level. Under this resource-based approach to protection, States are to take into account the total impact of all sources of contamination as well as the unique hydrogeologic features of their resource. A critical first step in developing and implementing protection programs and setting priorities is to ensure that currently used and reasonably expected sources of drinking water do not present adverse health risks.



Ron Heller

- **Emphasis on Prevention of Ground-Water Contamination:** Under this policy, the Agency will place an increased emphasis on prevention of ground-water contamination and strive to achieve a greater balance between prevention and remediation activities.

- **Clear Federal and State Roles:** EPA's policy clearly articulates the principles defining the EPA/State relationship in ground-water protection and provides for developing the framework on the State level for integrating Federal and State actions relating to the resource.

- **Adequacy of State Programs:** The Agency's new policy describes EPA's intention to refine over the next year the definition of the elements of a State Ground-Water Protection Program, and how each of the elements must be addressed to develop a program that is "adequate" to comprehensively protect a State's resource. It also describes how EPA will work to provide greater flexibility to a State in implementing Agency programs when that State has achieved an "adequate" ground-water protection program which affords comprehensive protection of the resource.

- **EPA Oversight:** In keeping with the recognition that States will develop and implement their own unique but adequate programs, EPA oversight in the Agency's ground-water related programs will shift from a program-specific basis to a cross-program, resource-based approach to be further defined over the coming year.

- **Coordinated Funding:** In contrast with Agency tradition, EPA will shift from a traditional grants mode into one characterized by coordinated management of current ground-water related grants and the incentive of increased funding for States showing progress with comprehensive protection of the resource.

Documents to Guide the Agency's Future Agenda

A. EPA's Ground-Water Protection Principles — This document establishes that the "overall goal of EPA's Ground-Water Policy is to prevent adverse effects to human health and the environment, and to protect



the environmental integrity of the nation's ground-water resources." It also states that, "... in determining appropriate prevention and protection strategies, EPA will also consider the use, value, and vulnerability of the resource, as well as social and economic values." Additionally, the document establishes principles related to prevention, remediation, and Federal, State and local responsibilities.

B. The Federal/State Relationship in Ground-Water Protection — This document contains an initial section

that outlines the broadly applicable principles of the Federal/State relationship, e.g., the role of the States and EPA, and the importance of resource-based prevention efforts. This document also includes a second section that describes EPA's new approach for promoting comprehensive protection of the resource and provides a list of the program elements commonly found in "mature" State ground-water protection programs that provide comprehensive protection of the resource. This document serves as an initial

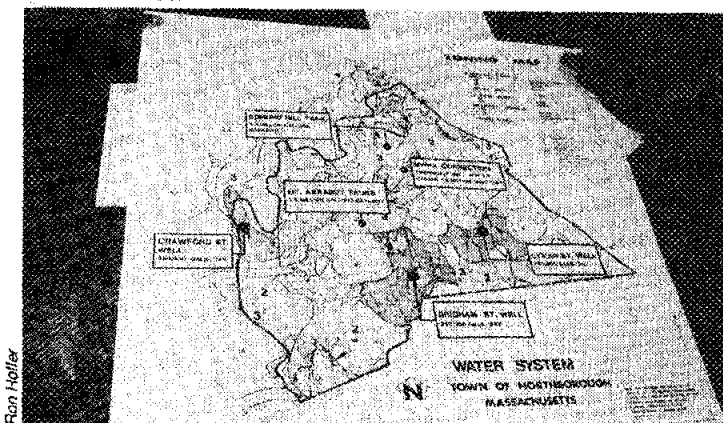
framework for future work in this area. In 1991, EPA will hold workshops around the country to provide the Agency with State input on both further refining the elements and their descriptions and on defining an "adequate" State program. In 1992, EPA will work with each State to complete a profile of its ground-water protection programs based on the final elements and criteria for adequacy. These profiles will identify gaps in State programs and will serve as the basis for grant agreements for the States' FY 1993 program efforts.

C. EPA's Approach to Implementation — This section describes the specific roles and responsibilities of EPA program offices, both in Headquarters and the Regional Offices, in implementing the Ground-Water Protection Principles and ensuring the development and implementation of State ground-water programs, which will provide comprehensive protection (Parts A and B of the report). It also describes the initial implementation actions the Agency will take over the next few years.

D. Agency Policy on EPA's Use of Quality Standards in Ground-Water Prevention and Remediation Activities — This policy statement describes how EPA will use maximum contaminant levels (MCLs) under the Safe Drinking Water Act and water quality standards (WQSs) under the Clean Water Act as "reference points" in carrying out ground-water programs. It also describes how these reference points will be applied differently in prevention and remediation activities.

E. Ground-Water Data Management — This document discusses the status of EPA's ground-water data availability, accessibility, and utilization. It discusses how data collected by EPA and others are used in ground-water planning and decision-making at the Federal, State, and local levels. Several specific recommendations for improvement developed by the Task Force follow. Also, an extensive computer and data system modernization effort now being undertaken by EPA's Office of Information Resources Management, should result in a substantial improvement in the availability and utility of ground-water data over the coming years. In FY 1991 the Agency is moving ahead with this initiative as well as recommendations relating to data consistency, quality and automation, accessibility, and data utilization.

F. Office of Research and Development (ORD) Ground-Water Research Plan — This document describes the research EPA plans to undertake over the coming years in response to the needs of Agency programs. It discusses research activities needed to provide the scientific knowledge base for successfully preventing and remediating ground-water contamination. In FY 1991 and beyond, ORD will conduct new research and technology transfer relating to three key areas of the Agency's ground-water protection efforts: the Wellhead Protection Program; State information systems for preventing ground-water contamination from pesticides; and, subsurface cleanup and mobilization processes.



Ron Hoffer

Part A

EPA's Ground-Water Protection Principles

The overall goal of EPA's Ground-Water Policy is to prevent adverse effects to human health and the environment and to protect the environmental integrity of the nation's ground-water resources; in determining appropriate prevention and protection strategies, EPA will also consider the use, value, and vulnerability of the resource, as well as social and economic values.

- In all events, EPA will execute this goal and the principles below in accordance with Federal law.
- Adverse effects mean those risks that are significant to the affected population and determined to be unreasonable where appropriate under relevant statute.
- EPA's fundamental premise is that the attainment of this goal is necessary to achieve the sustainability of the resource and closely hydrologically connected surface water systems, not just for the near term but for the future as well.
- In addition, because ground-water cleanup is extremely costly, and usually difficult and in some cases impossible to achieve and demonstrate, EPA's goal is to emphasize prevention of pollution where appropriate.

In order to achieve this goal, the Agency's principles are:

WITH RESPECT TO PREVENTION:

- ◆ Ground water should be protected to ensure that the nation's currently used and reasonably expected drinking water supplies, both public and private, do not present adverse health risks and are preserved for present and future generations.
- ◆ Ground water should also be protected to ensure that ground water that is closely hydrologically connected to surface waters does not interfere with the attainment of surface water quality standards, which is necessary to protect the integrity of associated ecosystems.
- ◆ Ground-water protection can be achieved through a variety of means including: pollution prevention programs; source controls; siting controls; the designation of wellhead protection areas and future public water supply areas; and the protection of aquifer recharge areas. Efforts to protect ground water must also consider the use, value, and vulnerability of the resource, as well as social and economic values.

-
- Ground water is a uniquely local resource due to the ease with which small sources can affect it, and the impact that use and hydrologic characteristics (e.g. vulnerability) can have on its quality. As such, ground-water programs will require an appropriate blend of several protection methods.

WITH RESPECT TO REMEDIATION:

- ◆ Ground-water remediation activities must be prioritized to limit the risk of adverse effects to human health first and then to restore currently used and reasonably expected sources of drinking water and ground water closely hydrologically connected to surface waters, whenever such restorations are practicable and attainable.
- Given the costs and technical limitations associated with ground-water cleanup, a framework should be established that ensures the environmental and public health benefit of each dollar spent is maximized. Thus, in making remediation decisions, must take a realistic approach to restoration based upon actual and reasonably expected uses of the resource as well as social and economic values.
- In an ideal world of unlimited funds, prioritization would be unnecessary. However, because resources do not permit all contamination to be addressed at once, the need for prioritization must be recognized.
- Moreover, given the expense and technical difficulties associated with ground-water remediation, EPA is emphasizing early detection and monitoring so that it can address the appropriate steps to control and remediate the risk of adverse effects to human health and the environment.

WITH RESPECT TO FEDERAL, STATE, AND LOCAL RESPONSIBILITIES:

- ◆ The primary responsibility for coordinating and implementing ground-water protection programs has always been and should continue to be vested with the States. An effective ground-water protection program should link Federal, State, and local activities into a coherent and coordinated plan of action.
- ◆ EPA should continue to improve coordination of ground-water protection efforts within the Agency and with other Federal agencies with ground-water responsibilities.

- Since ground water in any given area may be subject to contamination from a wide variety of point and non-point source activities, coherence and coordination in any plan of action are vitally important. EPA must ensure that the ground-water protection programs it implements under the Clean Water Act (CWA), the Resource Conservation and Recovery Act (RCRA), the Safe Drinking Water Act (SDWA), the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), and the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA), and the research programs that it funds under these Acts, are directed toward achieving the principles outlined above. In the design and timing of regulatory initiatives, EPA will address the highest risks. In addition, the authority of each State to allocate water within its jurisdiction should not be abrogated.
- Given the uniquely local nature of ground-water pollution and use, the States and localities must have primary responsibility for assessing and prioritizing risks to the resource and for implementing programs to protect the resource within each state so that it is available for various uses. However, where specific Federal responsibilities are provided for under the law, the requirements of the law must prevail.
- Not only must Federal, State, and local activities be linked to form a coherent plan of action; but air, water, and land practices, to the extent practicable, must also be examined in an integrated fashion to ensure protection of the ground-water resource.

Part B

The Federal/State Relationship In Ground-Water Protection

Background

Since the adoption of the Agency's 1984 Ground-Water Protection Strategy, EPA has been providing technical and financial assistance under the Clean Water Act to build State capacity to protect ground water in a comprehensive manner. Further, EPA has been implementing several source-specific statutes that protect and cleanup ground water.

Over the last few years, States have made significant strides in developing and implementing ground-water protection strategies. Yet, both the States and EPA recognize that much remains to be done to ensure *comprehensive* protection of the nation's ground-water resource. State ground-water programs vary considerably from one State to another and are often a patchwork of Federal, State and local source control efforts, focusing on individual sources of contamination rather than the resource as a whole. Source control programs tend to focus on sources that present significant risks on a national basis, but may not represent the most important threats at the local level to either drinking water supplies (and, therefore,

human health) or ground-water recharge to aquatic ecosystems. Many nonpoint and small, dispersed sources remain unaddressed and commercial, residential, and industrial development often occurs with no recognition of long-term impacts on the quality of ground water.

As a result of the work of the recent Agency Task Force, beginning in FY 1992, EPA will take a more strategic approach to actively assisting States in comprehensively protecting their ground-water resources. The Task Force identified the need for EPA to step up its efforts to coordinate more fully Agency programs and authorities at the EPA Regional and Headquarters levels, to help States build comprehensive, integrated programs that protect the ground-water resource, to provide a framework for coordinating multiple Federal programs and activities at the State and local level, and to make optimum use of EPA grant authorities to promote Federal and State program coordination.

The purpose of this report is to set in motion a more fully coordinated EPA effort based on existing Agency authorities. EPA recognizes that, because of the timing of this document,

the Regions and States have already completed much of the planning and negotiations for ground-water activities to be carried out in FY 1992. To the maximum extent possible, however, EPA will work with the States to promote aggressive implementation in FY 1992 through vehicles such as Regional grant amendments and technical assistance.

This document consists of three main sections: the first section describes the broadly applicable principles of the Federal/State relationship; the second describes EPA's support of a new comprehensive approach which relies on State Ground-Water Protection Programs; and the third section lists possible elements of such State programs, which are based in large part on discussions held with members of the Administrator's State/EPA Operations Committee.

Principles Defining the Federal/State Relationship

In preparing this report, the Agency used "EPA's Ground-Water Protection Principles" as a starting point for defining the Federal/State relationship in ground-water protection (see Part A). The Agency

believes, however, that there are additional broadly-applicable principles of this relationship that need to be set forth as well. They include:

- **State Role is Critical:**

The Agency believes that while EPA will continue its role in controlling major sources of contamination, the States should retain the primary responsibility for the management and protection of the ground-water resource and in addressing diffuse sources of pollution. Such management may require decisions about ground-water allocation and land use which are appropriately the province of State and local government. EPA should support States in developing ground-water protection programs that adequately protect the resource as well as the framework for State/EPA relations.

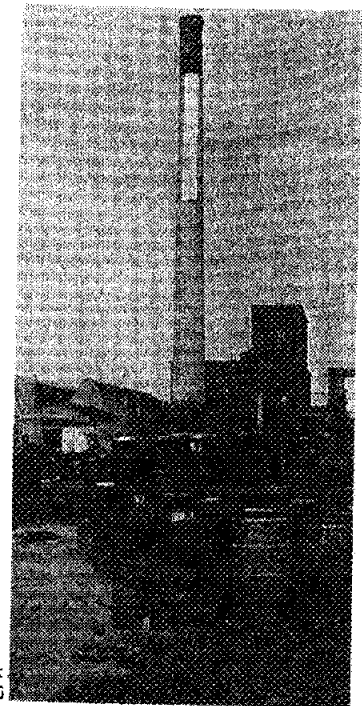
- **Resource-Based Efforts:** States and EPA should emphasize a resource-based approach to protection, in addition to the current source control programs. Under this approach, the total impact of all sources of contamination, as well as the unique hydrogeologic features of the resource, should be taken into account in developing and implementing protection

programs. Further, in addition to protecting current drinking water supplies, States should designate ground waters for protection that are reasonably expected to be drinking water supplies, taking into account such factors as: remoteness, quality, cost of protection, future growth and population patterns, and the availability and cost of alternative water supplies.

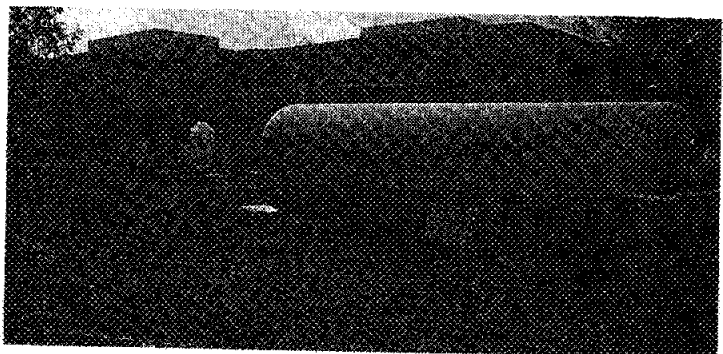
- **Emphasis on Prevention and Sustainability:** In general, the Federal/State relationship should be structured so that ground-water protection efforts are enhanced and coordinated.

- **Scientific and Economic Research:** EPA should continue to conduct scientific and economic research on various aspects of ground-water protection, and provide standard setting information to the States.

This includes developing maximum contaminant levels/maximum contaminant level goals which relate to health concerns, water quality criteria which relate to ecological concerns, risk assessment information, fate and transport data, and information on the economic



EPA



EPA

values and tradeoffs involved in protection activities.

- **Federal Consistency:**

EPA should strive for consistency among Federal agencies and programs with ground-water protection responsibilities. For example, the Agency intends to work with the U.S. Department of Agriculture (USDA) to develop a joint strategy for addressing issues affecting the agriculture community through the ongoing USDA/EPA Work Group on Water Quality. Further, mechanisms should be established or better utilized for coordinating with Department of Interior (DOI), Department of Energy (DOE), National Oceanic and Atmospheric Administration (NOAA), Department of Defense (DOD), and other Federal agencies with ground-water responsibilities.

- **The Roles of Federal and State Government in Regulating Specific Sources of Contamination Should be Based on the Following Factors:**

1. In general, State and local governments should play the prominent *regulatory* role. This is especially appropriate when: a) the activities of concern are numerous (e.g., 23 million

septic tanks) or highly localized (e.g., vary in impact and number from State to State) and nationally present a low to medium risk potential; b) when land-use management is a principal protection approach; and, c) when technologies currently exist or are easily developed to address the problem. Further, State and local governments should play the primary role in the *implementation* of Federally-mandated ground-water protection regulations.

2. EPA should take a prominent *regulatory* role as currently authorized by law when: a) there is a need to establish regulatory consistency (e.g., to limit adverse impacts on interstate commerce); b) when the scope of the effort requires national resources (e.g., research, regulations addressing technically complex environmental problems); c) when State-by-State efforts would create unwarranted and inefficient duplication (e.g., bans, research); and, d) when national security is involved (e.g., the disposal of radioactive waste).

- **Differential Protection:** In implementing EPA programs, the Agency should continue its policy of taking into account the use, value,

and vulnerability of the resource as well as other social and economic values in decisions affecting ground water. This is necessary to achieve EPA's overall ground-water policy goal of preventing adverse effects to human health and the environment and protecting the environmental integrity of the nation's ground-water resources.

- **Voluntary Approaches:**

EPA should encourage States to pursue voluntary, nonregulatory approaches to protecting the resource. For example, the Agency is currently working with USDA under the President's Water Quality Initiative to involve States in fostering effective prevention approaches with the agriculture sector.

State Ground-Water Programs That Provide Comprehensive Protection:

EPA intends to promote the development and implementation of State Ground-Water Protection Programs (SGWPP) designed to provide comprehensive protection of the resource and the framework to coordinate programs and activities under Federal, State and local statutes and

ordinances. A core premise is recognition of the primary State role in designing and implementing programs to protect the resource consistent with distinctive local needs and conditions. This generally means that EPA will provide broad national guidance and use financial incentives to promote action. The Agency recognizes that protecting the ground water is a unique and complex environmental issue that requires a new, non-traditional approach. Clearly, a nationally prescriptive program is not appropriate; risk taking and innovation are to be rewarded.

- **Over the next six months, the Agency will hold, in each Region, roundtable discussions.** State Directors of Environmental Agencies as well as State ground-water program directors will meet with EPA to reach agreement on the elements of a State program, which would provide comprehensive protection; a definition of the range of "adequate" State programs; and an EPA review process.
- **Over the next year, EPA will continue ongoing work with the States to profile and assess current State ground-water protection activities to obtain a**

baseline of information and help States identify gaps in their current ground-water protection programs. This two-stage profile process includes developing an objective description of current State activities and then working with the State in conducting a self-assessment of its activities to identify areas in need of further work. A State's current efforts will be compared with the elements of, and adequacy criteria for, a comprehensive program developed, in part, through the roundtables process described above. This baseline information will be used by the EPA Regional offices in supporting State efforts to develop and implement programs that provide comprehensive ground-water protection. Regional priorities, milestones, and commitments for the Agency's ground-water related programs will be set in a way that are consistent with individual State's needs and circumstances.

- **As States move toward designing and achieving a comprehensive approach to protection of the resource, EPA will review and concur in ground-water quality protection programs submitted by the States.** The review will focus on

"adequacy" instead of "consistency" -- the threshold question will not be whether a State's program is consistent with EPA criteria, but whether a program falls within a range deemed "adequate" to protect a State's ground-water resource. The Agency, in collaboration with the States, will define a range of ways to achieve "adequacy" rather than one prescriptive definition.

- **EPA's review of State programs will be flexible and take into account the unique characteristics of each State, as well as the different stages of development of each State program.** The process will be interactive and iterative, with the States and EPA working together. It will focus on assessing programs to identify gaps and providing EPA technical and financial assistance to States to address the gaps.
- **The purpose of the process of determining adequacy is not to judge or evaluate a State program in a "pass/fail" manner, or determine that a State's program is "inadequate" if it does not meet the criteria EPA has developed in conjunction with the States.** Rather, it is meant to be a process in which EPA works with States to help them fill

in gaps in State ground-water protection programs. The intent being to bring these programs to a point where the States are fully capable of comprehensively protecting the ground-water resource, given an individual State's particular needs and circumstances. When EPA can determine that a State has reached this point, EPA will seek to defer to State standards, priorities, and programs to the extent authorized under Federal statutes.

- EPA's non-concurrence of a State's Ground-Water Protection Program will not imply inadequacy of specific source management programs and efforts within the State either being conducted or approved by EPA or other Federal agencies. However, non-concurrence of a State's Program could result from a State not taking responsibility for an expected role in the implementation of specific source management programs or efforts.
- Using current ground-water related grants, EPA will support the development and implementation of State Ground-Water Protection Programs designed for comprehensive protection of the resource. While all States will initially be

eligible for funds, the Agency, working with the States, will define a range of program characteristics that will be used to assess State progress toward achieving an "adequate" comprehensive program. Exemplary State programs will receive an increasing share of the grants, while States showing little or no progress will receive reduced grant amounts. Further, for States with an "adequate" program, the Agency oversight process will focus less on defining and overseeing individual State actions and more on the overall effect of the program in comprehensively protecting ground water. States that elect not to participate in the process will not be able to avail themselves of certain EPA financial and oversight benefits.

- To the extent authorized by EPA statute and consistent with Agency program implementation objectives, EPA will defer to State policies, priorities, and standards once a State has developed an "adequate" program. For States that develop adequate State ground-water protection programs, EPA's policy will be to look to or "defer to" State policies, priorities, and standards. Under this policy of deference, EPA will study

and identify ways in which the Agency can defer to State decisions in implementing Agency programs. Implementation of this policy for States with an adequate ground-water protection program will take several forms.

- First, EPA will identify ways to provide States with greater flexibility to target enforcement and permitting activities consistent with the States' own policies and priorities.
- Second, EPA will establish policies for reducing routine Agency oversight of State programs affecting ground water.
- Third, in its development of regulations and guidance, EPA will explore ways in which it can provide for deference to State ground-water standards, regulations, or policies. To the extent authorized by EPA statutes and consistent with Agency program implementation objectives, EPA will provide for consideration of or deference to State standards, regulations, and policies. EPA statutes generally provide that Federally promulgated

standards or regulations serve as minimum levels of protection. These statutes, however, generally reserve to the States the authority to adopt more stringent standards or regulations. Therefore, States already have a significant role in establishing applicable standards for EPA programs. The Comprehensive Environmental Response, Compensation and Liability Act (CERCLA) is an excellent example of a statute that provides an important role for States in decision-making.²

— Finally, where State regulations, standards or policies would provide for less stringent protection than EPA regulations, standards or policies, there may be statutory or regulatory prohibitions to deferring to the State. EPA, however, is committed to exploring opportunities for providing for deference to State regulations, standards or policies as authorized by EPA statutes and consistent with Agency program implementation objectives.

Common Elements of "Mature" Ground-Water Protection Programs

As part of its role in promoting development of State programs that will provide comprehensive ground-water protection, the Agency, in collaboration with the States, will determine over the next year the key elements of a State program.

Because of each State's unique hydrogeological characteristics and conditions, the character of a program that provides comprehensive ground-water

² With some limitations, CERCLA provides significant opportunities for EPA to adopt State requirements as part of CERCLA cleanup actions. Whether or not CERCLA cleanups would be based on provisions of a State ground-water protection program depends first on whether the plan includes "ARARs." As defined in section 121(d)(2) of CERCLA, ARARs are "applicable or relevant and appropriate requirements" of other Federal or State environmental laws. For a State law requirement to be ARAR, it must be promulgated (i.e., of general applicability and legally enforceable, see section 300.400(g)(4) (1990) of the National Contingency Plan), substantive rather than administrative (see 55 Fed. Reg. 8756-57, March 8, 1990), identified in a timely manner, and *more stringent* than the Federal standard (section 300.400(g)(4) (1990)). Where a State requirement is not directly applicable, EPA has discretion to find the requirement to be ARAR because it is "relevant and appropriate" to circumstances at the site. Where State standards include substantive requirements that are ARARs, the CERCLA remedy would be required to meet or waive them. ARARs may be waived in six limited circumstances, such as where it is impracticable to attain them, or for State standards, where the standard has not been consistently applied (see CERCLA section 121(d)(4)). Under CERCLA, where State plans, policies or guidelines do not qualify as ARARs, EPA may nevertheless treat them as provisions "to be considered" ("TBCs") with respect to the cleanup plan. TBCs would be evaluated and justified on a site-specific basis. The recently revised NCP, in implementing CERCLA's cleanup program, demonstrates EPA's commitment to providing a significant role for States in decision-making.

resource protection will not be identical in all States. EPA will provide States with great flexibility in addressing the elements of a comprehensive program. A list of elements commonly found in "mature" ground-water programs is provided below, including a narrative description of each element. Using this universe of potential elements, EPA, in collaboration with the States, will develop over the coming year, a final set of elements and adequacy criteria for each element of a State program that provides comprehensive protection for the ground-water resource.

SETTING GOALS AND DOCUMENTING PROGRESS

- **Ground-Water Protection Goal which Accounts for Present and Future Uses of the Resource.** The ground-water protection goal is in harmony with the national ground-water protection goal and the goal is established in State statute. The ground-water protection goal accounts for present and reasonably expected future ground-water uses.
- **Yearly Action Plan for Achieving the Goal, which Includes a Mechanism for Evaluating Progress Toward**

the Goal and Provides for Periodic Review. The State has an action plan that describes how the State will achieve its comprehensive protection goal. The action plan outlines outcomes that are needed to assure that the resource protection goal is achieved; a process for reaching those outcomes; short- and long-term timetables, milestones, and measures of progress; and parties responsible for achieving desired outcomes. Usually, the plan reflects the diverse authorities available to the State to achieve its goal, including land-use authorities, public health authorities, and enforcement authorities.

CHARACTERIZING THE RESOURCE AND SETTING PRIORITIES FOR ACTIONS

- **Comprehensive Assessment of Aquifer Systems for Ground-Water Protection Purposes.** The State has an ongoing, effective program that provides basic information on the occurrence, movement, and quality of ground-water resources within its borders. This program utilizes and integrates the information available from State geological surveys, as well as ongoing Federal assessment and mapping programs, such



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as those available from the USGS and Soil Conservation Service.

- **Procedure for Inventorying and Ranking Potential Sources of Contamination that May Cause an Adverse Effect on Human Health or Ecological Systems.** The State has a program for identifying the existence, location, and relative magnitude/risk of anthropogenic and natural threats to ground-water quality. The program is capable of: (1) identifying specific categories of activities which pose threats to the quality of the resource, (2) locating geographic areas where such threats/sources are concentrated, and (3)

identifying specific source locations, facilities, plumes, etc., deemed to pose a threat to public health and or the environment.

- **Process Used for Setting Priorities for Actions Taken to Protect or Remediate the Resource, Such as a Use Designation/Classification Scheme that Considers Use, Value, Vulnerability, Yield, and Current Quality, Including Wellhead Protection and Cost Benefit Analysis.** The State balances the timing, ordering, and extent of protection activity development and implementation based on a scheme that reflects the risk to ground-water quality, human health, and ecosystem maintenance. Prioritization schemes reflect resource characterization and source inventory efforts. The State is encouraged to adopt prioritization schemes that consider such factors as resource use and potential use for drinking water and other purposes, resource sensitivity to contamination, and the tradeoffs in cost and/or effectiveness between protection and remediation options. Prioritization schemes incorporate priorities established in Federal environmental statutes.

DEVELOPING AND IMPLEMENTING PREVENTION AND CONTROL PROGRAMS

- **A Coordinated Pollution Prevention and Source Reduction Program Aimed at Reducing and Eliminating the Amount of Pollution that Could Affect Ground Water.**

A program to reduce and eliminate the amount of pollution that could potentially affect ground water with techniques, such as wellhead and recharge area protection programs, siting criteria, improved management practices and technology standards, etc.

- **Enforceable Quality Standards that are Health Based for Drinking Water Supplies and Ecologically Based in Areas Where Ground Water is Closely Hydrologically Connected to Surface Water.** Legally defensible and enforceable quality standards that could be based on MCLs (or EPA Health Advisory levels) for drinking water and on surface water quality criteria established under the Clean Water Act for ground water closely hydrologically

connected to surface water are a part of a comprehensive program. In applying standards, States should distinguish between prevention and remediation activities -- EPA's policy on the use of quality standards in ground-water prevention and remediation activities is one approach to which the States can refer. (Note: It is the State's prerogative to determine whether to establish its own standards or to use EPA's for actions under State law.)

- **Regulatory and Non-regulatory Authorities to Control Sources of Contamination Under State or Local Jurisdiction; e.g., Permitting, Siting, and Zoning Authorities.** The State has authorities necessary to manage the contaminant sources characterized in Element Two. The State has received or is making progress toward receiving delegation of EPA's contaminant control programs. Regulatory and nonregulatory authorities are sufficient to control additional sources of contamination under State or local jurisdiction. These

authorities include, but are not limited to, permitting authorities; controls on activities such as transport regulations and facility design standards; and land-use regulations (e.g., zoning) that limit where, when, how, and if certain activities may occur. Implementation and enforcement authorities are vested in local governments where appropriate.

- **Remediation Program which Dovetails With RCRA and Superfund and Sets Priorities for Action**

According to Risk. The State has or is developing a remediation program that adequately addresses those potential polluting activities and sites not already covered by EPA's remediation programs (e.g., hazardous waste treatment, storage, and disposal facilities -- including solid waste management units at such facilities) and sites not on the National Priorities List.

- **Monitoring, Data Collection, and Data Analysis Activities to Determine the**

Extent of Contamination, Update Control Strategies and Assess Any Needed Changes in Order to Achieve the State's own Ground-Water Protection Goal. The State's information management activities include the collection, laboratory analysis, storage, retrieval, and analysis of ground-water data. The State has a program to ensure that the data collected within the State are consistent, of known and reliable quality, and are efficiently stored for retrieval



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and use. This data are readily accessible to State and local agencies for use in analysis and decision making such as ground-water protection planning, enforcement, trend analysis, permitting and other activities.

- **Compliance and Enforcement Authorities Given to the Appropriate State and Local Officials Through Legislative or Administrative Processes.** Compliance monitoring and enforcement authorities are adequately delegated to the appropriate State and local officials.

- **Water Well Program, Including Private Drinking Water Wells, Covering Areas Such as Well Testing, Driller Certification, Well Construction, and Plugging Abandoned Wells.** The State has standards for water well construction, testing, and driller certification to ensure that wells are drilled and finished in a manner that is protective of public health. These standards include both public and private drinking water wells. Additionally, the State provides well closure standards to ensure that abandoned wells will not act as conduits into drinking water aquifers for contaminants.

- **Statement of How Federal, State, and Local Resources will be used to Adequately Fund the Program.** The State adequately funds and staffs the Program. There is a good match between available revenues and proposed expenditures.

- **Public Participation Activities to Involve the Public in the Development and Implementation of the Program.** The public is involved in the development, review, and implementation of the Program.

DEFINING ROLES WITHIN THE STATE, AND THE RELATIONSHIP TO FEDERAL PROGRAMS

- **Delineation of State Agencies' Responsibilities in the Ground-Water Program Covering Areas Such as Planning, Implementation, Enforcement, and Coordination.** The State delineates

the responsibilities of State agencies in planning, implementing, enforcing, and coordinating the Program. The designation of a lead agency, or formally established institutional structure, with responsibility for coordinating program implementation is recommended. The State addresses these issues with respect to interstate and regional organizations, if applicable.

- **Statement Indicating How the State Will or Does Provide Local Governments With Authorities to Address Local Ground-Water Protection Issues.** The State provides local governments with the authorities to address local ground-water protection issues. The State encourages local agency involvement in all aspects of ground-water protection, including technical assistance, training, and financial assistance.



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- **Statement of the State's Role Under Ground-Water Related EPA Statutes Including RCRA, CERCLA, SDWA, CWA, and FIFRA --** e.g. EPA-approved programs such as RCRA authorization should be listed and integrated as part of the State's overall ground-water protection program yet continue operating as free-standing programs. The State carries out its responsibilities in delegated and authorized Federal programs. For any program for which the State has not been delegated implementation authority, the State is striving to get such delegation.

- **Mechanisms for Dealing with Other Federal Agencies that Affect State Ground-Water Programs Including MOUs and Other Formal Agreements.** The State's Program provides for coordination with other Federal Agencies that affect State ground-water programs (e.g., USDA, DOI, DOD).

- **Statement Indicating How the State Intends to Integrate Water Quantity and Quality Management.** The State addresses methods that it will use to minimize the impacts of ground-water withdrawals on ground-water quality. The approach includes coordination

between the State agencies responsible for quantity management and quality management.

- **Coordination of Ground-Water Programs with other Relevant Natural Resource Protection Programs, Including Surface Water Management.** The State has a mechanism for coordinating and integrating the planning and implementation of all State, local, and Federal activities affecting ground water. The mechanism might include commissions or task forces that use inter-departmental staff from all State and Federal regulatory agencies, including staff from agencies not usually associated with ground-water protection, such as community development and public works.

Part D

Agency Policy on EPA's Use of Quality Standards in Ground-Water Prevention and Remediation Activities

The purpose of this policy statement is to describe the approach the Agency will use in making specific decisions with quality standards when carrying out EPA's ground-water related statutory responsibilities.

When EPA is carrying out its programs, the Agency will use maximum contaminant levels (MCLs) under the Safe Drinking Water Act, as "reference points" for water resource protection efforts when the ground water in question is a potential source of drinking water. Water quality standards, under the Clean Water Act, will be used as reference points when ground water is closely hydrologically connected to surface water ecological systems. Where MCLs are not available, EPA Health Advisory numbers or other approved health-based levels are recommended as the point of reference. If such numbers are not available, reference points may be derived from the health-effects literature where appropriate. In certain cases, maximum contaminant level goals (MCLGs) under the Safe Drinking Water Act, or background levels may be used in order to comply with Federal statutory requirements. Reference points are to be applied differently for prevention and cleanup purposes.

- **Prevention:** Best technologies and management practices should be relied on to protect ground water to the maximum extent practicable. Detection of a percentage of the reference point at an appropriate monitoring location would then be used to trigger consideration of additional action (e.g., additional monitoring; restricting, limiting use or banning the use of a pesticide). Reaching the MCL or other appropriate reference point would be considered a failure of prevention.

- **Cleanup:** Remediation will generally attempt to achieve a total lifetime cancer risk level in the range of 10^{-4} to 10^{-6} and exposures to non-carcinogens below appropriate reference doses. More stringent measures may be selected based on such factors as the cumulative effect of multiple contaminants, exposure from other pathways, and unusual population sensitivities. Less stringent measures than the reference point may be selected where authorized by

law, based on such factors as technological practicality, ←
adverse environmental impacts of remediation measures, cost and low ←
likelihood of potential use. ↗