United States Environmental Protection Agency
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EPA

Ground - Water Protection Update

The Ground-Water Protection Provisions of the SDWA Amendments of 1986

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Fifty percent of all Americans drink it. It supplies 80% of the nation's irrigation needs. In rural areas, fully 90% of water needs are supplied by it. Yet it has been taken for granted and abused. The "it" of which I'm writing is, of course, ground-water, one of this nation's most valuable and vital natural resources.

Its value is indisputable. Sadly, its vulnerability is fast becoming indisputable as well. Today we know that all of man's activities on or beneath the earth can contaminate our ground-water treasure. As this reality becomes more and more apparent, policy makers at every level of government have begun to address it. While there have been and continue to be several Congressional proposals developed and debated to address the growing ground-water challenges, the ground-water protection provisions in the Safe Drinking Water Act (SDWA) Amendments of 1986 are the first of such proposals to become law.

The ground-water provisions of the recently passed SDWA Amendments of 1986 introduce two new programs that require innovative approaches to ground-water resource assessment and protection. The first, the Wellhead Protection Program (WHPP) defines a Federal framework for the protection of ground water, while continuing to recognize the unique needs of Regional, State and local governments. The second, the Sole Source Aquifer (SSA) Demonstration Program, will fund certain special projects aimed at teaching us more about ground-water protection in particularly sensitive and valuable settings.

These new ground-water provisions represent a significant strengthening of Federal, State and local governments in their roles as protectors of the ground-water resource. The success of our efforts will depend largely on our ability to adhere to four guiding principles. We must:

- Implement the program in such a way that State creativity and flexibility in program design and implementation is maximized;
- Recognize and appropriately address the diversity of hydrogeologic settings and sources of contamination;
- Take into account the concerns of the Congress, the States and local governments regarding Federal involvement in land use and water allocation; and,
- Administer these programs consistently with each other and with State ground-water protection strategies and plans.

What exactly do these programs entail? This question is best answered by describing in more detail the WHP program and the SSA program.

Wellhead Protection Program

The purpose of the Wellhead Protection Program is to protect drinking water wells that supply public drinking water systems from contaminants that flow into the well from the surface and sub-surface. It is intended to be a State developed and administered program with individual States determining the extent of the area around the wellhead to be protected. EPA is required to issue technical guidance to aid States in making this determination.

The statute requires States to submit program applications within three years of enactment of the SDWA Amendments. The law sets forth seven elements for inclusion in a wellhead protection program. If a State does not

submit a program, there are no penalties. The State simply will not qualify for Federal assistance in protecting the wellhead area. EPA has no authority under the statute to undertake a program in lieu of the States.

The decision to approve or disapprove a State wellhead protection program rests with the EPA Administrator. The Administrator may disapprove all or a portion of the program if he considers it inadequate to protect public water systems. If all or part of the State's program is disapproved, the Administrator must send the Governor a written explanation of the reasons for disapproval. States may modify and resubmit a program if it is disapproved.

EPA approval of a State's wellhead protection program is a prerequisite to consideration of providing a grant for its implementation. The law permits no less than 50% nor more than 90% cost-sharing from EPA to cover the costs of carrying out the State wellhead protection program. Funding will, of course, depend on the availability of yearly appropriations.

Sole Source Aquifer Demonstration Program

The second of the new ground-water protection provisions in the SDWA Amendments of 1986 is the Sole Source Aquifer Demonstration Program. Since 1974, EPA has had the authority to designate aquifers as the sole or principal drinking water source for an area and thereby provide for the review of all Federally assisted projects that might contaminate the aquifer. The purpose of the new SSA Demonstration Program is to demonstrate special protective measures for critical aquifer protection areas within a designated sole source aquifer. This program attempts to test innovative programs for controlling ground-water contamination, including ways of managing land use and development.

To be eligible for the demonstration program, a jurisdiction must meet the criteria for a critical aquifer protection area (CAPA) within the designated sole source aquifer. The statute provides three specific approaches to defining a CAPA. To establish the boundaries of the CAPA, EPA must issue a formal rule including criteria on aquifer vulnerability; population using ground water; the economic, social and environmental benefits of ground-water protection; and the economic, social and environmental costs of ground-water degradation.

A key criterion for eligibility for a demonstration grant is that the applicant have jurisdiction over the CAPA. States, municipal or local governments, other political subdivisions and designated planning entities are eligible to apply for the demonstration program. All applicants other than the Governor must submit the demonstration program application jointly with the Governor.

The centerpiece of the demonstration program is the comprehensive management plan designed to maintain the quality of the ground water in order to protect human health, the environment and the ground-water resources. The plan is to identify those activities that have an adverse impact on public health and ground water, ways to prevent or mitigate those impacts, and the legal and institutional framework for carrying out the plan. Mandatory and optional components of the plan are outlined in the law.

Approvable applications must meet the criteria for CAPAs and the proposed demonstration program must be consistent with the objectives of the comprehensive management plan. Once an application is approved, the Administrator may enter into a cooperative agreement with the applicant to establish the program. Some type of competition will be needed to determine the most innovative and useful demonstrations to support. It is important to note that the decision to provide Federal financial assistance is separate from the decision to approve a CAPA. EPA may provide a 50 percent matching grant to cover the costs of implementing the comprehensive management plan.

Conclusion

Both the Wellhead Protection Program and the Sole Source Aquifer Demonstration Program are designed to protect ground-water sources while allowing States the flexibility to tailor these programs to specific conditions and geologic settings. At the same time, these new programs must be implemented within the overall context of Federal and State ground-water protection strategies. The challenge facing EPA is to integrate these programs into the existing institutional framework and to provide clear, concise guidance to the States where appropriate.

The Ground-Water Protection Update reflects the Office of Ground-Water Protection's (OGWP) developmental activities in implementing the SDWA Amendments of 1986 and the Ground-Water Protection Strategy, as well as other key events related to ground-water. If you have any questions or comments on the information contained in the Update, please contact OGWP. We hope you find the information useful.

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HEADQUARTERS UPDATE

Technical Information Publication on Septic Systems and Ground-Water Contamination

The Office of Ground-Water Protection (OGWP) has developed two publications that describe how proper management of septic systems can help prevent ground-water contamination. The primary docu-

ment is "Septic Systems and Ground-Water Protection: A Program Manager's Guide and Reference Book" and the overview document is "Septic Systems and Ground-Water Contamination: An Executive's Guide."

These two documents were produced in response to a growing concern that septic systems are one of the major sources of ground-water contamination, and that this contamination can be a health hazard. The OGWP believes that strengthening State and local management programs for onsite waste disposal is the best way to prevent future contamination. Thus, OGWP convened a panel of experts from State and local governments and other organizations to define the most important management considerations for septic tank use and maintenance. It is the judgment of this panel of experts that attention should be paid to the following:

- Requiring site and soil evaluations
- Adopting comprehensive regulations
- Instituting educational programs
- Promoting water conservation and waste reduction
- Assuring proper operation and maintenance
- Controlling septage disposal
- Controlling cleaning solvents and hazardous chemicals
- Managing commercial, industrial, and large flow systems
- Strengthening compliance efforts

The Guide and Reference Book and the Executive's Guide provide "real world" examples of how these considerations should be used in various situations and suggestions for applying the regulations to proper management practices.

Both documents are available from the Government Printing Office: The Executive's Guide is GPO No. 055-000-00257-6, the Guide and Refer-ence Book is GPO NO. 055-000-00256-8. Lee Braem in OGWP can be contacted at (202) 475-8507 for more information.

University of Oklahoma Symposium

In March,1987 OGWP will sponsor a symposium on "Agricultural Sources of Ground-Water Pollution." The symposium will focus on specific case studies of ground-water contamination by agricultural chemicals, and State programs that have been developed for managing the agricultural sector to protect ground-water quality. This is the fifth in a series of symposia on public policy issues facing State and local decision makers as they develop and implement ground-water protection programs. The series is being conducted by a consortium of universities consisting of the University of Oklahoma, Oklahoma State University, and Rice University. For more information on the agenda and symposium, contact Saul Rosoff in OGWP at (202) 382-7077.

Ground-Water Data Management Requirements Analysis

Currently, ground-water data needed by environmental managers at EPA, the Regions or the States, for the most part, do not exist. Where the ground-water data exist, they are quite often incomplete, and incompatible with other systems, and, therefore, not readily accessible to the managers for decision making on ground-water issues.

As part of the implementation of EPA's Ground-Water Monitoring Strategy, the Office of Ground-Water Protection (OGWP) and the Office of Information and Resources Management are conducting a ground-water data management requirements analysis. The purpose of this analysis is to determine:

- Who needs ground-water data?
- What ground-water data do they believe they need?
- How do they expect to use this data?
- What agencies have data that can be used for these purposes?
- How accessible is the data and how can it be made more accessible?

This ground-water data management requirements analysis was initiated in February 1986, and is expected to be completed by the end of this calendar year. The study will define the needs of EPA headquarters, the Regions and the States concerning ground-water data and recommend an approach to address these needs. A Policy Committee of office directors at EPA, State representatives and senior EPA regional managers, has been established to provide overall study direction. The Committee met twice early in the study and most recently in August to review its progress. The study includes background review of data requirements and sources, interviews with data users and generators, evaluation of current data management practices, and a detailed requirements analysis and implementation plan. To date, information on ground-water data needs has been collected from over 30 EPA headquarters staff, six EPA regions, 18 States and various Federal agencies. At the present time, this information is in the process of being evaluated to determine the requirements necessary to meet these needs.

As a result of this analysis, a report will be prepared showing the relationship between the ground-water information needs and the decision makers involved in ground-water protection. In addition, options will be prepared for Agency consideration to determine the approach that should be followed in managing ground-water data. After the Agency has selected an approach, a plan or strategy will be developed for its implementation. For more information on this data management requirements analysis, contact Caryle Miller in OGWP at (202) 382-7097.

EPA Agricultural Chemicals In Ground-Water Strategy

In EPA's Ground-Water Protection Strategy, issued in 1984, the use of pesticides and fertilizers was recognized as a potentially significant source of ground-water contamination that needed additional national attention. Shortly after the

Strategy was released, the Office of Ground-Water Protection (OGWP) began collaborating with EPA's Office of Pesticides and Toxic Substances (OPTS) to see how the Agency's authorities and existing activities under the Federal Insecticide, Fungicide and Rodenticide Act (FIFRA) and Toxic Substances Control Act (TSCA) could be better used to address the problem of agricultural chemicals in ground water.

As a result of these initial efforts, the issues and potential solutions as well as the variety of statutory authorities that could be used became better understood. Last fall, the Agency selected the problem of agricultural chemicals in ground water for a major strategy development initiative. Led by OPTS, the effort includes all EPA offices and has top management support and involvement.

The strategy will address:

- Sources of contamination and the statutory and program authorities available to prevent and respond to contamination incidents
- Environmental fate and health effects assessment tools
- Policy regarding registration and re-registration of pesticides found to have leaching potential
- Roles of EPA, States, and other Federal agencies in addressing various aspects of the problem
- Research needs in environmental fate assessment and cleanup technologies.

In June, the OPTS held a workshop in Coolfont, West Virginia, with key representatives of Federal and State agencies, environmental organizations, and the agricultural chemical industry to obtain their views and insights on the development of EPA's Agricultural Chemicals in Ground-Water Strategy. The Agency is now in the process of evaluating the ideas and suggestions that emerged at the conference, and is refining options for addressing the problem with regulatory and non-regulatory actions. These options will be presented to the Administrator this fall and a draft strategy will be widely circulated for public review by the end of the year.

For information about the strategy, contact Bob Barles, OPTS, (202) 382-2892. Copies of the background document on pesticides in ground water, which contains the findings of the initial pesticides review effort, can be obtained by writing to OGWP at U.S. EPA, 401 M Street, S.W., Washington, D.C. 20460.

National Survey of Pesticides In Drinking Water Wells

The presence of pesticides in drinking water can pose serious threats to public health. While there are indications that pesticide contamination of drinking water wells does exist, the degree and types of well contamination are not fully known. Some analyses of pesticides in ground water have been completed, but they were limited to a small number of pesticides and specific geographic areas. EPA currently is planning a two-year nationwide survey of pesticides in drinking water wells to assess the severity of pesticide contamination, estimate the potential population at risk and understand the relationship between pesticide use and hydrogeology in preventing contamination.

The Office of Pesticide Programs (OPP) and the Office of Drinking Water (ODW) are jointly sponsoring this survey. The initial planning stages for this project are nearly complete. Additional work is still needed in refining the research design and in coordinating the activities of the various survey participants. The survey design includes four major steps:

- Determine a representative sample of drinking water wells: A complex, three-stage statistical design will be used to identify and select representative community and private drinking water wells for sampling.
- Develop analytic methods for measuring type and amount of potential pesticide contamination: Water samples will be analyzed for the presence of over 70 pesticide analytes, chosen based upon their leaching potential, occurrence, production volume and other considerations. Six multiresidue methods for detecting and quantifying the presence of pesticides are currently under development.
- Establish health advisories for pesticide concentration levels that may pose a health problem: Advisories for 60 priority pesticides will be developed from information collected on physiochemical properties, uses, chemical fate, health effects, treatment and existing criteria and guidelines.
- Develop a data collection questionnaire to analyze additional factors affecting pesticide contamination: The questionnaire is being designed to collect information on the location of wells, use and construction characteristics, pesticide use in relation to wells, available water samples and hydrogeologic, demographic, economic and crop characteristics.

These four components of the survey are at various stages of development and will be tested in a pilot survey later this year. A full-scale survey will be conducted approximately six to nine months following the pilot survey of 50-100 wells from a total of three to five states.

It is anticipated that the data generated through this survey will help EPA's regulatory program to target pesticides of concern and to develop further regulatory initiatives. If certain pesticides are shown to pose potential hazards through leaching into ground water, further regulatory actions under FIFRA may result including labelling changes, use restrictions or registration suspension or cancellation. New maximum contaminant levels and monitoring requirements for pesticides under the SDWA may also be established as a result of this survey.

For more information on the National Survey of Pesticides in Drinking Water Wells, contact Jerry Kotas, ODW, at (202) 382-7176.

EPA's Underground Storage Tank Survey

On June 24, 1986, the EPA released a new study on leaking underground storage tanks. The study, a sample survey of underground motor fuel storage tanks, is one of several studies used by EPA's Office of Underground Storage Tanks (OUST) to develop a regulatory program for underground tanks authorized by Congress in the 1984 Amendments to the Resource Conservation and Recovery Act. This new study, along with other sources of information, will give EPA important data on problems associated with underground tanks in the United States.

The survey, "Underground Motor Fuel Storage Tanks: A National Survey," was conducted with a national probability sample of 890 establishments with 2,400 tanks on the premises. A random subsample of 218 establishments was selected for physical tank testing, and at those 218 sites, 433 tank systems and piping were tested for leaks with a carefully selected analytical method. Major findings of the survey include:

- An estimated 35 percent of the tank systems failed the tightness test. This conclusion must be interpreted with caution, however, as the tests involved elevated operating pressures. Failing the tightness test does not necessarily mean the tank is actually leaking. The Agency currently estimates that anywhere from 10-25 percent of all tanks may be leaking.

- The average rate for leaking tanks, adjusted for typical operating conditions, was 0.31 gallons per hour. Half the leaks were 0.25 gallons per hour or less.

- In the statistical analysis of this survey, EPA could not identify any single variable (such as type of material or fuel type) that strongly correlated with test failure.

- Fourteen percent of the establishments have one or more abandoned tanks on site.

- Twenty-one percent of the tanks are installed partially or completely below the water table (the depth below which the ground is saturated with water).

By early next year, OUST plans to propose rules on new and already installed petroleum and chemical tanks that will include provisions on leak detection, tank design and construction, installation, compatibility, repair and closing of tanks. These rules will deal only with products like petroleum, gasoline and chemicals, not with wastes. (Final rules for hazardous waste tanks will be issued by EPA soon). The recently completed survey will serve as an important source of data for development of rules for petroleum and chemical tanks. For more information on the survey or EPA's underground storage tank program, contact Helga Butler (OUST) at (202) 382-4799.

REGIONAL/STATE UPDATE

Cooperative Ground-Water Management Effort Initiated

In May, the Cape Cod Aquifer Management Project was initiated in Region I. This project is designed to coordinate ground-water management efforts among the various Federal, State and local environmental agencies in the Region. The focus of the project is to improve coordination of information exchange, pooling of technical expertise and determination of institutional roles and responsibilities. This will be achieved through clearly identifying the extent of the resource to be protected (i.e., the zone of contribution to the public water supply well) and ensuring proper management and regulation of all sources of contamination impacting the well. For more information, write Robert Mendoza, Office of Ground-Water Protection, U.S. EPA Region I, Boston, Massachusetts, 02203.

Two-Day Data Management Workshop Held

As a result of concerns in Region III states over handling of ground-water data, a two-day data management workshop was held in Philadelphia in February. This workshop provided explanations and demonstrations of existing data systems as well as informal discussions on issues of concern. Participants included personnel from EPA's Washington Information Center who demonstrated STORET capabilities; EPA Headquarters who discussed the Agency's evolving data management policy; EPA Region III who demonstrated a PC application; and several USGS districts that demonstrated their PR1ME computer system, utilizing the ground-water site inventory data gathered in West Virginia, the Survey's State Water Users Data System (SWUDS) and the geographic information system known as ARC/INFO.

This workshop was a success in providing a constructive forum for States, EPA and the USGS to exchange ideas on data handling, future data needs and near-term policy decisions. Participants expressed an interest in conducting similar workshops on a periodic basis as policy evolves in this area. For more information on this workshop, write Thomas Merski or Ben Lacy, Office of Ground Water, U.S. EPA Region III, Philadelphia, Pennsylvania 19107.

Region IV Reorganizes

Region IV recently implemented a new organizational structure that both strengthens the Region's ability to protect ground-water resources and provides for better coordination of the many groups involved. This structure was conceived by Jack E. Ravan, Regional Administrator and former Assistant Administrator for Water.

The new Ground-Water Protection Branch includes all the ground-water related programs -- Ground-Water Protection, Underground Injection Control, Underground Storage Tanks, Wellhead Protection and Sole Source Aquifer. Strong links to other programs such as RCRA and Superfund also are built into the reorganization. There has been a high level of interest in the operations of the 42 member Branch. The Regions and Headquarters will conduct assessments of its operations over the next year. Write James Kutzman, Chief of the Ground-Water Protection Branch, U.S. EPA Region IV, Atlanta, Georgia, 30365 for more information on this new Regional organization.

Glacial Sedimentology Seminar Held

The Office of Ground Water in Region V sponsored a two-day seminar on glacial sedimentology, which included theory, applications and case studies relating to ground-water protection. This issue is particularly critical in Region V since 90 percent of the region is glaciated. The complex geology created by the glaciers is the most important factor in protecting the Region's ground water from contamination. Over 100 people attended the seminar including representatives from each State in the Region, other Regions and Canada. The USGS was instrumental in organizing and providing instructors for the seminar. For more information on this seminar, write Jerri-Anne Garl, Office of Ground Water, U.S. EPA Region V, Chicago, Illinois, 60604.

Landmark Legislation Passed In Washington State

In response to growing concern over Washington State's ground-water resources, the 1985 Legislature passed a bill to assist State and local governments in effectively managing the public's ground water. The bill specifically directs the Department of Ecology to establish a process for identifying and designating ground-water management areas and for developing comprehensive groundwater management programs.

The process developed by the Department of Ecology is designed to be a team effort utilizing resources from interested ground-water user groups and various local and State agencies. The process also allows issues and concerns from all interested parties to be incorporated into the planning process in an effective and efficient manner. This type of coordination should facilitate a wider acceptance of the program and provide a broader authority to implement and enforce the program. The 1986 Clean Water Bill authorizes the Department of Ecology to contribute up to 50 percent in matching funds for the development of the ground-water management programs. Bill Mullen, Office of Ground Water, U.S. EPA-Region IX Seattle, Washington, 98101 may be contacted for more information.

Hawaii to Submit Ground-Water Protection Strategy

The State of Hawaii recently passed legislation requiring the Director of Health to submit to the Legislature a draft ground-water protection strategy and plan by January, 1987. As part of this plan, the Director must develop and implement a program for predicting, monitoring, and preventing ground-water contamination by 1988. An appropriation of $150,000 was provided to support a ground-water planner, who will manage the Section 106 ground-water grant, and three environmental health specialists, who will be responsible for implementing a ground- water monitoring program. James Thompson, Office of Ground Water, U.S. EPA Region IX, San Francisco, California, 94105 may be contacted for additional information.

Arizona Enacts Several Environmental Bills

In Spring 1986, Arizona's 37th Legislature enacted several pieces of environmental and health legislation designed to protect ground water. The most important, the Environmental Quality Act, establishes a Department of Environmental Quality (DEQ) which will have responsibility over many existing environmental programs. The new DEQ must also develop new programs to establish aquifer classifications, aquifer water quality standards, ground-water discharge permits, pesticide regulations including no discharge to ground water, data requirements, registration and cancellation, agricultural Best Management Practices, expanded ground-water monitoring and increased enforcement. For more information on Arizona's new environmental legislation, write James Thompson, Office of Ground Water, U.S. EPA Region IX, San Francisco, California, 94105.

Texas Water Commission Designates Critical Ground-Water Areas

On July 2 of this year, the Texas Water Commission issued a list of 17 areas in the State that have been designated as critical ground-water areas. Delineation of the areas is the first official action of a newly created Ground-Water Conservation Section of the Water Commission.

The listing of the critical ground-water areas is in response to House Bill 2, passed by the 1985 Legislature. The Water Commission has been gathering information on areas considered for inclusion on the list since September. Under the legislation, a critical area means an area that is experiencing or is expected to experience critical ground-water problems. These are areas that are characterized by ground-water overdraft problems due to extensive use of underground water for drinking, irrigation or industrial uses. Many of the areas' problems are complicated because other situations, such as subsidence or contamination, are also present.

The next step for the Commission will be to hold public hearings to receive information, discuss boundaries of the areas and identify problems and potential solutions in the

critical areas. Don Draper, Office of Ground Water, U.S. EPA Region VI, Dallas, Texas, 75270 may be contacted for more information.

Nebraska Establishes Controls Over Nonpoint Sources

The Nebraska Legislature recently enacted a precedent-setting statute which provides for mandatory Best Management Practices on the use of agricultural chemicals in areas of ground-water degradation or special vulnerability (called special protection areas). Under the new law, a farmer who violates a mandatory Best Management Practice in a special protection area can be fined or jailed. The legislation passed with strong support from the rural community, where ground- water protection is a special concern. Write Timothy Amsden, Office of Ground Water, U.S. EPA Region VII, Kansas City, Kansas, 66101 for more infomation.

Super Act Passes in Florida

The Florida Legislature recently passed the State Underground Petroleum Environmental Response Act of 1986, also known as Super Act. Super Act provides protection of ground-water and inland surface waters of the State by enabling Florida's Department of Environmental Resources to quickly restore or replace residential drinking water supplies contaminated by leaking petroleum tanks. A trust fund is established under the Act for cleanup actions. The fund will be derived from taxes imposed on barrels of pollutants produced in the State or imported and on tank registration fees. For more information on the Florida Super Act, write Mike Williams, UST Coordinator, U.S. EPA Region IV, Atlanta, Georgia 30365.

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Recent OGWP Publications

The following is a list of guidance documents, strategies and status reports issued by the Office of Ground-Water Protection. Copies of these documents may be obtained by contacting OGWP, WH 550-G, U.S. EPA, 401 M Street, S.W., Washington D.C., 20460.

1. EPA Ground-Water Protection Strategy (August 1984): presents EPA's strategy for building State institutions, assessing the extent of contamination, issuing guidelines and strengthening EPA management of ground-water resources

2. EPA Journal: Protecting Ground-Water: The Hidden Resource (July/August1984): presents overviews of the impacts of ground-water contamination, the Ground-Water Protection Strategy, the EPA/State partnership and protection efforts

3. Resource Document for the Ground-Water Monitoring Strategy Workshop (March 1985): summarizes Federal and State ground-water monitoring activities and technical ground-water monitoring issues

4. Planning Workshop to Develop Recommendations for a Ground-Water Monitoring Strategy (March 1985): provides background on workshop topics including objectives of a ground-water monitoring strategy, monitoring approaches and roles and responsibilities in monitoring

5. State Ground-Water Program Summaries (March 1985): describes significant State ground-water contamination problems, protection programs and accomplishments

6. Selected State and Territory Ground-Water Classification Systems (May 1985): describes eleven state and territory classification systems to define levels of protection and to maintain designated use and quality of ground water

7. Public Information Brochure on Ground Water (September 1985): prepared jointly with Office of Public Affairs, presents important facts on ground-water resources, contamination sources and protection activities

8. Proceedings of a National Symposium on Institutional Capacity for Ground-Water Pollution Control (September 1985): symposium held in Denver, Colorado, on June 20-21, 1985, provides discussions of policy issues relating to the development of institutional capacity for ground-water pollution control

9. Ground-Water Monitoring Strategy (December 1985): provides an EPA cross-agency analysis on the need for ground-water monitoring data

10. Proceedings of a National Symposium on Institutional Coordination for Ground-Water Pollution Control (January 1986): symposium held on October 21-22, 1985, in Philadelphia, Pennsylvania, provides discussions of key policy issues associated with institutional coordination between levels of government and among agencies within one level of government

11. Ground-Water Data Management With STORET (March 1986): outlines methods for entering and retrieving data from the computerized water quality data base

12. 1985 Ground-Water Status Report (April 1986): summarizes major activities in the OGWP during 1985

13. Pesticides in Ground Water: Background Document (May 1986): describes sources andextent of ground-water contamination by pesticides, status of scientific and technical information on causes and potential human impacts and available authorities to address the issue

14. Proceedings of a National Symposium on Local Government Options for Ground-Water Pollution Control (June 1986): symposium held in Atlanta, Georgia on January 16-17, 1985, provides discussions of key policy issues and options available for addressing problems associated with well field protection, agricultural practices, underground storage tanks, wastewater, urban nonpoint sources and solid and hazardous wastes

15. SDWA Amendments Information Package (June 1986): fact sheet and press release on the new Wellhead Protection Program and SSA Demonstration Program

16. Septic Systems and Ground-Water Protection: A Program Manager's Guide and Reference Book and Septic Systems and Ground-Water Contamination: An Executive's Guide (June 1986): describe proper management of septic systems to assist in preventing ground-water contamination