



# Ground-Water Protection Update

## WELLHEAD PROTECTION

### PROGRAM ADVANCES NATIONWIDE



#### Across the Nation

A major EPA/State partnership to protect the nation's ground-water supplies will take a significant stride forward in the coming months as States develop their Wellhead Protection (WHP) Programs and submit them to EPA. Wellhead protection is essential for preventing contamination of vital drinking water supplies. Without such specific protection programs, there is a greatly increased potential for pollutants to enter and to contaminate drinking water supplies derived from ground water.

#### Safe Drinking Water Act

Wellhead protection is a central component of the amendments to the 1986 Safe Drinking Water Act (SDWA). The Act calls for States to develop WHP Programs and to submit them to EPA Regional Administrators for approval by June 19, 1989. The Act requires States to make every reasonable effort to implement the program within two years after submitting it to EPA. "There are no EPA sanctions if States miss this deadline," notes Marian Mlay, Director of EPA's Office of Ground-Water Protection (OGWP). "However, this is an important program for protecting public health. Both EPA and the States have shown serious intentions to make it work."

#### States Play the Central Role

The SDWA designates States to play a central role in the implementation of WHP. This recognizes the diverse hydrogeologic conditions and sources of contamination that exist, as well as State/local primacy in land use and water allocation law. Although each State program must contain specified elements outlined in the SDWA, EPA officials anticipate that the States will implement these elements using a diverse array of WHP Pro-

#### National Wellhead Protection Conference

December 6-8, 1988  
New Orleans  
Clarion Hotel

The upcoming conference will offer ground-water managers the chance to forge new alliances and strengthen existing partnerships. It will feature many timely presentations on important technical and management issues.

grams. "We're looking forward to States and localities developing some good, creative responses that reflect the States' unique problems and various institutional designs and constraints," believes Ms. Mlay. "A number of States have already made significant progress in developing their wellhead programs."

#### EPA Focus on

#### Technical Assistance

EPA Headquarters and the Regions have provided States with technical assistance and assisted in accelerating information transfer and exchange among States and localities. Also, OGWP has already developed and is continuing to develop Technical Assistance Documents on the management and hydrogeologic aspects of the program. In a related effort, EPA is working with a number of States to learn how they are developing local contingency plans for replacing water supplies that become contaminated despite operative WHP Programs. This work will serve as a basis for developing guidance for use by other States.

#### Training Programs

The Agency recently conducted several Regional training sessions to help explain the concepts involved in the program. Because of the interest shown to date, OGWP is now planning additional training sessions to provide "hands on" experience in the methods used to delineate Wellhead Protection Areas (WHPAs). The Agency is also developing training sessions on the use of data management systems and on the utilization and effectiveness of various protection methods in Wellhead Protection Areas.

Rebecca Hanmer, Acting Assistant Administrator, Office of Water, comments that, "Wellhead protection is central to everything we need to do to protect ground water. It will help us make sense out of what we are doing in this country to prioritize our protection activities. In fact, wellhead protection will tell us if we are spending our resources in the right places and on the right activities."

## STATE SHOWCASES

### NEBRASKA



#### Something New for Nebraska

With a focus on examining ground-water threats from non-point sources of pollution, such as nitrates and pesticides, Nebraska recently initiated its Special Protection Area (SPA) program. Department of Environmental Control (DEC) staff have taken to the field to complete domestic and irrigation well samplings in three Nebraska communities showing evidence of nitrate contamination.

#### Ready for Action

What will the State do if its ground-water studies reveal that serious action is necessary? Under a 1986 Nebraska law, the State has the authority to designate a problem site as a SPA. If a serious problem exists, the appropriate Natural Resources District (NRD) will step in and develop an action plan to address the problem. The action plan requires farmers to reduce the amount of commercial nitrogen fertilizer that is used and also includes management plans and educational training for farmers. Thanks to the DEC and Nebraska Association of Resources Districts, the State's 24 NRDs can look forward to a manual that will serve as a blueprint for developing their action plans.

#### Efforts Continue

Committed to this program, the State has budgeted about \$30,000 to \$50,000 for completing each SPA study. In coming years, wells in other communities will be sampled, based on a priority list established by the DEC. Factors such as affected population, existing ground-water quality, availability of alternative water supplies, and hydrogeological characteristics will be considered when determining future study areas. The SPA program is a new tool that will aid the State's continued effort to protect its valuable ground-water resources.

### NEW JERSEY



#### A Comprehensive Approach

New Jersey officials recognize that complex problems require innovative, comprehensive solutions. As a result, the New Jersey Department of Environmental Protection is developing a new program

targeted at establishing interim protection areas around community drinking water wells. The New Jersey Geologic Survey is evaluating several criteria, including the geology and the amount of water withdrawn, to determine wellhead area size.

#### Local and State Implementation

After designating interim wellhead areas, the State will use existing regulatory authorities to restrict potentially hazardous activities. For example, underground storage tanks may require secondary containment in interim wellhead areas. The State will work with local government officials (e.g., local planning boards) to encourage local restrictions on hazardous activities within these areas. Individuals wishing to locate potentially hazardous activities within them will be responsible for showing that their activity does not threaten ground water.

#### Public Input

New Jersey officials will seek public input in 1989 as they begin to construct the framework for their interim WHP Program. By 1990, regulations to implement the program should be in place. Over time, as site-specific hydrogeological studies are conducted, the interim WHP areas will be modified to reflect more accurately local conditions.

## LOCAL SPOTLIGHTS

### DADE COUNTY, FLORIDA



#### A County with Foresight

Florida's Dade County, with one of the first and most innovative WHP Programs in place, now also has a vision of a new wellfield. If things go as planned, the new wellfield will be able to supply 140 million gallons per day. This will not only meet the county's current water demands, but it is expected to also provide an excess supply for contingency purposes until the year 2010. Their current planning effort, the West Wellfield Planning Project, will ensure that this vision becomes a reality. Their project, including new wells and excess capacity for contingency purposes, represents two milestones toward a comprehensive WHP Program.

#### A Range of Options

Because of the rapid growth and sensitive environment found in the Miami metro-

politan area, officials are facing a number of tough choices in identifying a final potential wellfield area. Urban water supply needs may compete with agricultural operations and the management of the Everglades National Park. Consideration has even been given to the use of the brackish artesian aquifer that lies below the surficial Biscayne Aquifer. Because of costs and technical problems, however, the county anticipates relying on the Biscayne Aquifer.

#### The Final Tasks

Planning officials are targeting early 1990 for meeting Environmental Impact Statement and other requirements. In the meanwhile, the county is gearing up to protect the preliminary site through source controls and other WHP requirements. By designating the site as an "interim protection area", Dade County planners hope to ensure that a clean ground-water supply will be ready and usable when their vision becomes a reality.

### BIG SIOUX AQUIFER, SOUTH DAKOTA



#### Meeting the Challenge

A shallow aquifer covering more than 1,500 square miles and threats from nitrates, pesticides, and petroleum are providing a pressing challenge to the local governments of eleven counties in eastern South Dakota. The challenge, to protect the Big Sioux Aquifer through strong, uniform land-use controls, is being met head on by local officials

#### Involving the Public

Brookings County will kick off the new year with public meetings to discuss the proposed model ordinances covering both wellhead areas and the entire shallow aquifer. The foundation for the proposed ordinance will be a 1986 ground-water protection ordinance developed jointly by the city of Brookings and Brookings County, South Dakota. Feedlots and waste storage areas are among the facilities that may be prohibited near wellheads as a result of the ordinance.

#### Working Together

Once developed, the Brookings County model will be modified for use in the ten additional counties. Local agencies, such as the East Dakota Water Development District, are lending a hand by (continued)

encouraging use of the model ordinance. Technical assistance from EPA Region VIII for the initial pilot project and detailed hydrogeologic maps from the South Dakota Geological Survey are providing the counties of eastern South Dakota the support they need to meet their ground-water challenges.

#### **RATHDRUM PRAIRIE/ SPOKANE VALLEY AQUIFER, IDAHO AND WASHINGTON**



##### **Interstate Alliance for Water**

Planning officials in the Idaho and Washington counties and municipalities overlaying the Rathdrum-Spokane Aquifer have straddled political boundaries to protect their common resource. Their spirit of cooperation has enabled them to aggressively implement new WHP techniques.

##### **Protecting the Aquifer**

Faced with increasing urban sprawl, the Panhandle Health District in Idaho and the Spokane County Water Quality Management Office in Washington are assessing non-point sources of ground-water pollution and developing control programs. With a common goal of protecting the aquifer, planners have developed aquifer sensitive overlay zones, a critical materials handling ordinance in Spokane County, sanitary sewer construction programs, and sewage management agreements.

##### **Looking to the Future**

Planning staff have a full calendar for the next three years as they undertake a study of innovative WHP techniques. Related activities on the horizon include creation of an aquifer-wide computerized data base, storm water management and critical materials handling programs in northern Idaho, and active public participation.

#### **DAYTON, OHIO**



##### **A Vote for Wellhead Protection**

Three cheers for the city of Dayton, Ohio for unanimously passing a model WHP Program in 1988. Joining hands in this one-and-one-half-year effort were concerned citizens, the Chamber of Commerce, and interest groups such as the Sierra Club

##### **Key Elements**

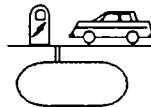
Dayton decided that a three-pronged approach consisting of a zoning ordinance, notification requirements, and a WHP fund would result in an effective, manageable program. Their approach is ingenious in that it integrates all three elements -- the notification requirements lead to zoning of regulated substances and targeting of funds to priority problems.

##### **Innovation Throughout**

How do you develop an effective program that also ensures compliance? The city responded to this difficult question by using built-in economic incentives to promote compliance. For example, the city will allow an industry to purchase property within a Wellhead Protection Area (WHPA) from an existing industry and use regulated substances on that property as long as that use is equivalent to or less intensive than the first company's use of regulated substances. Industries that hope to sell property, therefore, have the incentive to notify the city of all their activities to ensure that their property should be available to similar industries. The city's willingness to be innovative should result in increased participation by notifiers.

#### **MONITORING HEADQUARTERS**

##### **UNDERGROUND STORAGE TANK UPDATE**



##### **Tank replacement takes off**

The signs are visible in many communities that EPA's Office of Underground Storage Tanks (OUST) has maintained a busy schedule through the last several months. Owners and operators of many gasoline service stations are replacing their old, leaky underground storage tanks (USTs) with newer, corrosion resistant ones. Programs developed by OUST are making such replacements necessary. Among the Office's recent achievements are the following:

- Requirements for State UST program approval;
- Technical standards for tanks containing either petroleum or regulated hazardous substances;
- Guidance for the technical requirements,

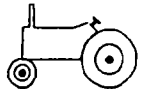
- Guidance on financing State UST programs; and
- Guidance on developing State programs for financial responsibility.

The guidance on technical standards is now available in the form of a handbook titled "Musts for USTs."

##### **Polluters Will Pay**

One of the Office's current priorities is to develop regulatory programs to ensure that owners or operators of USTs have the financial resources to pay for any damages that may result if their tanks leak. OUST has already issued final specifications for making owners and operators of petroleum-containing USTs financially responsible for cleaning up releases and paying damage claims. The Office also is considering developing similar requirements for USTs used to store chemical products. For further information, call EPA's RCRA/Superfund Information Hotline 1 (800) 424-9346.

#### **AGRICULTURAL CHEMICALS IN GROUND WATER**



##### **Proposed Pesticide Strategy**

In February 1988, EPA proposed a strategy for managing pesticide use to protect ground-water resources and to prevent unreasonable risks to the public health or the environment. EPA's strategy envisions State management plans as a key component in protecting ground-water supplies from unacceptable contamination. The strategy also calls for using drinking water standards, maximum contaminant levels (MCLs), as the key reference points for determining unacceptable contamination. Federal and State agency coordination is also an integral part of the proposed strategy. EPA will establish certain basic protection measures that will be applicable across the country, and the States will take the lead in tailoring management programs for local needs.

EPA followed up its release of the strategy (Agricultural Chemicals in Ground Water: Proposed Pesticide Strategy) with a meeting of State and local commission representatives last June 7th in Washington. Before the end of 1988, all EPA Regional Offices are scheduled to meet with State agencies to take the next steps in formulating State management plans.

### Regional Offices of Ground-Water Protection

Region	City	Telephone No.
1	Boston	(617) 565-3600
2	New York	(212) 264-5635
3	Philadelphia	(215) 597-2786
4	Atlanta	(404) 347-3866
5	Chicago	(312) 353-1490
6	Dallas	(214) 655-6446
7	Kansas City	(913) 236-2970
8	Denver	(303) 293-1703
9	San Francisco	(415) 974-0831
10	Seattle	(206) 442-1216
EPA	Headquarters	(202) 382-7077

For additional information on Regional and State articles, please call the appropriate Regional Office.

### REGIONAL AND STATE PARTNER- SHIPS



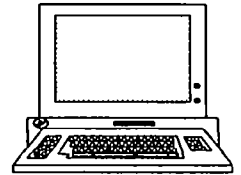
### Combined Resources

How is the Federal effort to protect the nation's underground drinking water supplies implemented? Only through the combined resources of EPA Regions, States, and countless local communities can the use of the nation's fragile ground water be protected against the threat of contamination. This partnership will be strengthened as new efforts, such as Wellhead Protection, take form in the coming months. The side by side working relationships between EPA's Regional offices and States are particularly important in this effort.

to assure EPA understanding of tribal issues in program development and to assist in the development of tribal programs to protect ground water. Policy workshops and surveys of local government activities assist the States and Tribes in developing effective ground-water programs.

Sharing of technical information and maintaining continuous policy dialogue among the interested and affected parties typifies the team work required to ensure the successful protection of the nation's ground-water supplies.

### USER FRIENDLY COMPUTER SOFTWARE



EPA's Office of Ground-Water Protection, in cooperation with the Office of Information Resources Management, is supporting an effort to improve STORET, the main EPA data base containing ground-water and surface water data. The project focuses on increasing the "user-friendliness" of STORET, especially for data retrieval. Improvements will include developing a user-friendly menu structure for STORET and enhancing remote user dial-up communications. OGWP anticipates that the STORET enhancements will be available to all system users by December 1988. In the spring of 1989, STORET users also can look forward to a series of water data system training forums sponsored by OGWP and the Office of Water Regulations and Standards which will provide guidance concerning the use of the STORET enhancements.

### EPA'S Diverse Regional Role

EPA's 10 Regional offices are the Agency's primary points of contact with the various State agencies that are entrusted with the implementation of federal ground-water policies. Regional offices ensure consistent application of these policies and appropriate use of federal funds by working closely with the water resources, health, natural resources, and environmental staffs in State government. Assistance is provided in many forms, such as training seminars for delineation of wellhead protection areas, review of Sole Source Aquifer petitions and regulated projects, assistance in grants application procedures, and development of ground-water protection strategies. Regional personnel work with Indian Tribes

### DECEMBER CONFERENCE

An EPA-sponsored National Conference on Wellhead Protection, to be held in December in New Orleans (see the front page for details) will highlight EPA's leadership role and State programs, bringing together in one forum approaches, start-up ideas, and information on cutting-edge technology. "The December Conference will serve as an excellent forum for the exchange of ideas," predicted Ms. Marian Mlay, Director of EPA's Office of Ground-Water Protection (OGWP). "It will be a chance for States and localities to share strategies, as well as to get a clearer understanding of the importance of wellhead protection."

### OFFICE OF GROUND-WATER PROTECTION PUBLICATIONS (TELEPHONE (202) 382-7779 TO ORDER THESE DOCUMENTS.)

#### RECENTLY ISSUED:

- *Developing a State Wellhead Protection Program: A User's Guide to Assist State Agencies Under the Safe Drinking Water Act*
- *Bibliography of OGWP Publications*

#### AVAILABLE SOON:

- *Guidelines for Developing Contingency Plans for Wellhead Protection Programs*
- *Local Tools for Wellhead Protection*
- *Financing Wellhead Protection on the Local Level*