

KEEPING DRINKING WATER SAFE

Source Water Protection Becoming a Top Priority for Townships

Many people don't realize the number of factors that can affect drinking water safety, from stormwater runoff to the use of lawn-care products. Township supervisors are trying to change that with comprehensive source water and well-head protection programs that educate the public, prevent groundwater pollution, and offer tips for managing activities that could compromise this critical resource.

BY ANDREA BENNETT / U.S. EPA REGION 3

Drinking water is not just what comes out of your tap. It also is the creek that feeds your township's reservoir, the groundwater that supplies the well used by a local daycare center, and the lake that forms the core of a popular recreation area. It is a valuable resource, but just how healthy is your local drinking water supply?

That's an important question, because whether it comes from the headwaters of a rural stream, an underground aquifer, or an urban river, drinking water can be contaminated by what happens on the land around it.

Septic systems, waste treatment, farming, stormwater runoff, industry, mining, and home lawn care are just a few examples of land use activities that can lead to water pollution. The contaminants can take many forms, including microbes (*viruses and bacteria*), salts, metals, solvents, pesticides, oil, gasoline, and radioactive materials.

More than a decade ago, the U.S. Environmental Protection Agency recognized the impact this contamination could have on drinking water supplies and amended the nation's Safe Drinking Water Act to protect them. In addition to updating the standards and regulations that address water treatment and safety at the tap, the act required each state to develop an EPA-approved program to assess all of its public drinking water sources. These assessments defined the land area that contributes water to each public system, determined its susceptibility to contamination, and identified the most likely causes.

Every state now has an approved source water assessment program and has reviewed most public water systems. The results can help communities protect their drinking water by developing ways to control, reduce, or prevent contamination, and that's exactly what townships across Pennsylvania are doing.

South Middleton Township, Cumberland County

South Middleton Township in Cumberland County has taken a multitiered approach to protecting its groundwater. For starters, the township created a 90-acre park around one of three municipal wells to make sure the land, known as a wellhead protection area, would not be developed.

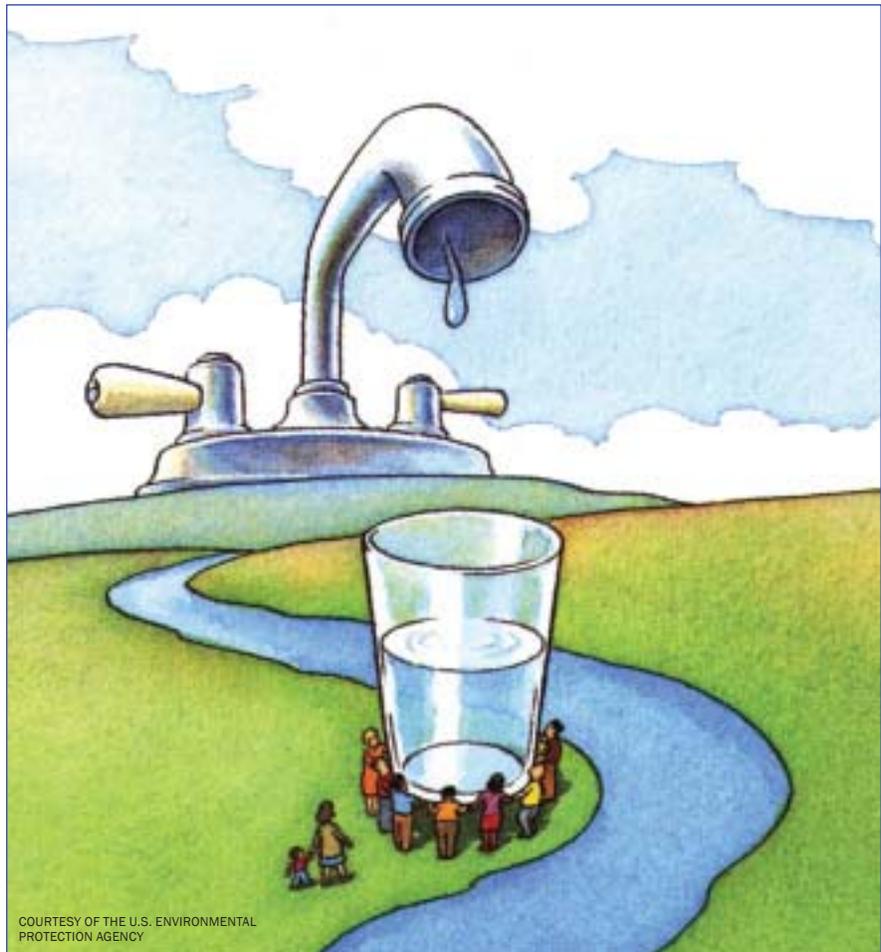
The township also adopted a wellhead protection ordinance and a well driller's ordinance to protect the water supply and educate the public. A grant for more than \$4,000 from the League of Women Voters' Water Resources Education Network allowed the township to post "Water Supply Area" signs, conduct tours of its water treatment plant, and start a program to teach kids about source water protection. Another grant from the state Department of Environmental Protection helped fund a revision of the wellhead protection ordinance.

The township hopes that its efforts to protect a valuable resource, which earned it an EPA Source Water Protection Award in 2003, will encourage other communities to do the same.

"It was important for South Middleton Township to purchase and protect the land around the public well sites," former supervisor Terry Rickert says. "When faced with the possibility of 200-plus homes surrounding this well, the board felt it was necessary to purchase the property, preserve open space, provide suitable recreational opportunities for our residents, and, above all, protect the quality and quantity of water from this source."

Former supervisor Duff Manweiler agrees. "Under Terry's direction, the board embraced the concept of wellhead protection to preserve this precious resource," he says. "South Middleton Township officials continue those efforts to this day, and, hopefully, will carry this idea and goal into the future. This is a legacy we need to leave to future generations."

Township manager Barbara Wilson confirms that source water protection remains a primary concern for the township. "When projects come up that are in the wellhead protection area, the developers have to do geologic stud-



Townships across Pennsylvania have made source water protection a priority in their communities. From establishing wellhead protection areas to educating the public about proper use and disposal of hazardous household products, municipalities are helping control, reduce, and prevent contamination of public water systems.

ies," she says. "We have those reports reviewed by our expert, who makes sure they are in compliance with our ordinance. We are following through with those initial goals to this day."

Warwick Township, Lancaster County

South Middleton Township is not alone in its efforts. Warwick Township in Lancaster County worked with its neighbor, the Borough of Lititz, to develop the Lititz Area Wellhead Protection Program. The goal of this joint effort is to ensure that rapid growth does not threaten the public water supply through increased demand and potential contamination. Education efforts start with the township's Web site, which explains the vulnerability of groundwater in a karst, or limestone/carbonate area, provides information

on potential threats, and describes what residents can do to protect the water they drink. (See www.warwicktownship.org for more details. Click on "Municipal Authority" and then "Wellhead Protection Information.")

Much of this area's public water comes from seven wells, all of which are susceptible to contamination. Two wellhead protection areas were designed to mitigate that threat by:

- helping to prevent the contamination of sinkholes;
- managing and preventing spills and leaks from underground storage tanks;
- providing best practices for the use of swimming pools;
- working with farmers to protect groundwater;
- offering tips on how to reduce the use of hazardous household products,

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fertilizers, and pesticides and dispose of them properly; and

- explaining how to install and use ground-source heat pump systems.

Township manager and municipal authority administrator Dan Zimmerman says the wellhead protection program is not a static, set-in-stone strategy.

“Wellhead protection is an ongoing process,” he says. “We need to continually modify our program and be flexible in addressing new challenges. To accomplish that, we need to work closely with our citizens. For example, our outreach program with the agricultural community ensures that we have a viable agricultural industry while still protecting water quality. It’s important that our wellhead protection program strategies match current and future stresses.” ➤

SOURCE WATER PROTECTION

What does it mean?

Source water protection is action taken to prevent the pollution of drinking water sources, including groundwater, lakes, rivers, and streams. Township supervisors can play a major role in source water protection, including wellhead protection, which is necessary to ensure drinking water safety today, tomorrow, and for years to come.

To learn more about Pennsylvania’s source water protection program, log onto the state Department of Environmental Protection’s Web site at www.depweb.state.pa.us. Under “Water,” choose “Source Water and Groundwater.” Townships may also call the Bureau of Watershed Management at (717) 787-5267.

For general information on the U.S. Environmental Protection Agency’s source water protection program, log onto <http://cfpub.epa.gov/safewater/sourcewater> or call the EPA’s Safe Drinking Water Hotline toll-free at (800) 426-4791.

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Getting into the act

Every state and municipality across the country faces similar challenges when it comes to protecting the water supply. And while effective systems are in place for treating drinking water, significant investment will be required to install, upgrade, or replace infrastructure to keep those supplies safe and available for 240 million customers nationwide.

In recognition of that fact, the EPA has launched a Sustainable Infrastructure Initiative, which encourages utilities to charge users for the full costs of service, adopt practices to better manage their assets, use water more efficiently, and manage water resources with a “watershed approach” — that is, considering how water flows through a region when making infrastructure and growth decisions.

The EPA encourages townships to get into the act, too. Source water and wellhead protection activities provide a framework for municipalities to identify drinking water sources, develop and prioritize ways to manage potential or existing pollution, and then implement a protection strategy.

What would work for your township? It depends on the particular situation, community interest, and past, present, and future water needs. For instance, maybe a drought has impacted your township. Perhaps much of the watershed that supplies your drinking water is in another jurisdiction or is vulnerable to a particular kind of contamination. Sometimes a community is experiencing growth and economic development, but in the wrong places. Source water and wellhead protection planning allows a township to outline ways to address these and other concerns.

Communities are also discovering that source water and wellhead protection programs can result in financial benefits. According to the EPA publication *Benefits and Costs of Prevention: Case Studies of Community Wellhead Protection, Vol. 1*, taking steps to prevent pollution may be 30 to 40 times less costly than managing it after the fact through remediation. As British scholar Thomas Fuller said in 1732, “We never know the worth of water ’til the well is dry.” ♦

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