



Wellhead



Protection *for safe drinking water in Indiana*

Effective Wellhead Protection Through Education

*Barbara C. Cooper,
Water Quality Education
Specialist*

*Jane R. Frankenberger,
Extension Agricultural
Engineer*

*Fred Whitford,
Coordinator, Purdue
Pesticide Programs*

Inside

Why Is Wellhead Protection Education Important	1
How Do You Generate Interest in Wellhead Protection?	2
Who Is Your Audience and What Do They Need to Know?	2
What Are Some Educational Methods That Work?	5
Who Can Help?	6
What's Next?	7
References	8

Wellhead protection is designed to protect the ground water that is used for a community's drinking water supply by protecting the land nearest the public water supply wells from potential hazards. Because many facilities and human activities may contaminate ground water, the community needs to be informed and educated about how they can protect the water supply. Public support is essential for such a program because the public will be asked to change some of their attitudes and practices. But public support depends on public awareness and involvement. Generating awareness and involvement can best be achieved through an effective public education and outreach program. The writers and planners of Indiana's Wellhead Protection Rule (327 IAC 8.1-4) realized the importance of education and have made it a required element in every community wellhead protection plan.

This publication describes some ways that the wellhead protection planning team can promote wellhead protection education in their communities. Education is only one part of wellhead protection planning. For information on other aspects of wellhead protection planning, see the *Useful Publications* section of this publication.

Why Is Wellhead Protection Education Important?

Wellhead protection education has three main goals. The first is to increase public awareness of the threats of ground water contamination. Many people are unaware of the many ways that ground water can become contaminated, and therefore do not necessarily relate human activities that take place on the land's surface to a potential for ground water contamination. In most areas, local land use activities can greatly influence the quality of ground water. Informing and educating the public about the source of their water supply and its vulnerability to contamination is one important aspect of wellhead protection planning.

Wellhead Protection Planning Overview

- Local planning team
- Delineation of the wellhead protection area
- Identification of potential sources of contamination
- Management of the wellhead protection area
- Contingency plan
- Public participation, education, and outreach

The second goal of wellhead protection education is to encourage individual ground water protection. People are more likely to change behaviors that can harm the water supply when they are told how their individual actions can make a difference and just what they can do to prevent a costly clean up of their water supply.

The third goal of wellhead protection education is to increase support for wellhead protection initiatives in the community. Wellhead protection can include both non-regulatory and regulatory strategies. If regulatory measures are part of the wellhead protection management plan, education can raise support for implementing such measures.

How Do You Generate Interest in Wellhead Protection?

People will be most interested in ground water problems or concerns that are local. A “teachable moment” is always desirable for generating interest in wellhead protection. A teachable moment might come when contamination threatens, as the City of Valparaiso found out. Valparaiso is the first Indiana community to have a completed and approved wellhead protection plan. One driving force behind their rapid progress was salt contamination of one of the public water supply wells. Road salt had been stored near one of the well fields, and over many years of being dissolved by rain and washed into the ground, the contamination finally reached the supply wells. They had to fix the problem, and while they were addressing it, they generated community interest and involvement needed to expedite the wellhead protection planning process for all their well fields. Because the community had to deal with the existing contamination problem, they became aware of the vulnerability of the water supply and the other potential contaminants near their well fields.

By using topics of local concern, you can generate interest in wellhead protection. An imminent contamination threat isn’t required, because each area has its own wellhead protection concerns. Industrialized areas with hazardous chemical users may be a concern to some communities. Abandoned manufacturing facilities or gasoline stations may be the major concern in your area. Perhaps the passage of a major highway or railway near your well is the major concern for your community. Sandy soils can be a concern because of high infiltration rates that can lead to contamination from pesticides, fertilizers, and septic systems. If there is no major threat to the ground water in your community, count yourself lucky. But realize that you can borrow someone else’s problem to make a point and use it to educate the community about preventative measures.

Who Is Your Audience and What Do They Need to Know?

Education should be targeted to everyone living and working within the designated protected area. The local media - newspaper, radio, and television - can assist in this outreach effort, but they will need some initial education to be made aware of the scope and importance of the community’s wellhead protection efforts. Your overall audience will include local residents, farmers, public officials, emergency response personnel, and businesses. In addition, people traveling through wellhead protection areas are required to be informed through signage on major thoroughfares.



Sign produced by Penn Products to identify wellhead protection areas.

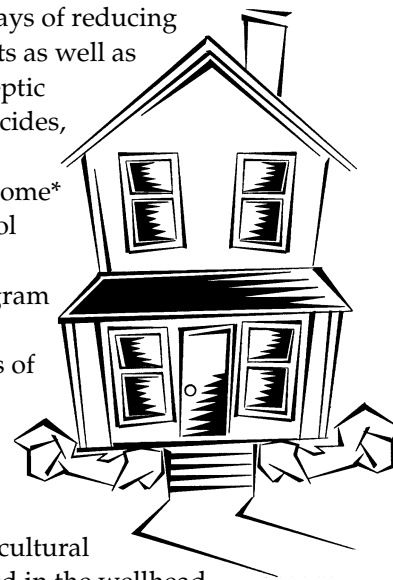
General Public



All audiences need to become familiar with the local water supply, the extent and location of the wellhead protection area, and the nature of potential contaminants within that area. General education articles which could be published in the local newspaper might include information on the nature of ground water, the name and location of your local aquifer, and how it is recharged, and local wellhead protection planning efforts. When you provide this information to the community, some people will want to know more, such as, "What does it mean that this is the wellhead protection area?" and, "What can I do to protect this area?" This gives you the opportunity to provide information on actions each person can take to protect water quality. These actions are often called *best management practices* and are part of an overall pollution prevention philosophy adopted by many communities.

Residents of the Wellhead Protection Area

Local residents need to know that many routine activities can affect water quality. Information on home and farm best management practices should be made available to those residing in the wellhead protection area. These best management practices include ways of reducing and rethinking the use of hazardous products as well as general information on how to maintain a septic system, how to dispose of oil, solvents, pesticides, and general household hazardous waste properly, and how to conserve water. The Home*A*Syst program is a pollution prevention tool that people can use to ensure the safety and health of their home environment. This program helps identify potential risks and suggests actions to reduce those risks through a series of assessment worksheets. (See WQ-25 under *Useful Publications*.)



Agricultural Producers

If the wellhead protection area includes agricultural land, one or more farmers should be involved in the wellhead protection planning process. Those farmers involved can help educate other farmers about wellhead protection and why it is important. Farmers regularly safely manage many substances that could contaminate ground water, including manure, fertilizer, pesticides, and fuel. They should, however, be reminded of existing regulations, educated about the contamination potential of materials they use on their farms, and asked to use best management practices. Purdue Extension can play an important role in reaching out to farmers in the wellhead protection area. The Purdue Extension publication known as Farm*A*Syst provides an assessment system and guidelines for best management practices for farmers. (See WQ-22 under *Useful Publications*.)

Public Officials

Public officials should be actively involved in the wellhead protection planning process. As community leaders, public officials can facilitate the overall

process of community wellhead protection planning. They can introduce leaders from different segments of the community to one another and encourage cooperation. A public official on the wellhead protection planning team sets an example for the rest of the community. Public officials also need to be aware of the boundaries of the wellhead protection area and the land use and management options available for this environmentally sensitive area. Purdue Extension has publications dealing with land use and management options for wellhead protection areas. (See WQ-37 and WQ-38 under *Useful Publications*)

Emergency Response Personnel

Emergency response personnel must be included in any education program, because they will be the first responders to any spill, accident, or leak. They need to be informed of the extent and boundaries of the wellhead protection area and whom to notify in case of an emergency that might affect the water supply. This process is included in contingency planning. The Indiana Department of Environmental Management (IDEM) has developed a one-page fact sheet describing the contingency planning process. (See *Useful Publications*)



Business

Owners and operators of facilities that use or store hazardous materials are required to be notified that they are in a wellhead protection area. They should be encouraged to use best management practices to prevent ground water contamination. The U.S. Environmental Protection Agency (EPA) and local, state, and sectional trade associations provide information about recommended best management practices for many industries. There is an EPA publication on developing best management practices that business owners may find useful as well. (See *Useful Publications*)

The Media

Local media can be a good vehicle to get wellhead protection on local agendas and start a public discussion about what wellhead protection means and doesn't mean, and how a community could be affected. You should begin by identifying reporters and editors at local newspapers, radio and television who regularly cover the issues you want to raise. These people will form the core of a mailing list for meetings, calendar events and news releases. They also can be invited to briefing meetings that will help them better understand wellhead protection. Make sure they know who the citizens committee is and how members may be contacted.

News releases and letters to the editor also are good ways to publicize your objectives and activities. These don't need to be comprehensive or complicated. News releases can focus on just the highlights and contact information, while editorials can concentrate on one aspect of an issue. The point is to communicate the existence of a wellhead protection group and offer ways for residents to get involved or learn more.



People Passing Through the Area

People traveling through the wellhead protection area must be informed of the boundaries of the area through posting of signs on major thoroughfares. The signs provide a continual reminder to residents of the wellhead protection area. Wellhead protection area notification signs can be purchased from the Indiana Department of Corrections. (See *Information Contacts*.)

What Are Some Educational Methods that Work?

The general rule for effective education is to present the information in as many different ways as you can, as often as you can. Developing your education program to include differing delivery mechanisms, targeted at your various audiences is the most effective way to reach the most people. The following methods are often effective:



- **Meetings for the public** — Consider enlisting the services of professionals or volunteers to give talks and presentations about water quality issues. By recruiting several knowledgeable speakers, each individual will need to volunteer less time, and different aspects of wellhead protection can be addressed.
- **Articles written for the newspaper or delivered by radio** — Many people will read about wellhead protection efforts in the newspaper. It is important to get the assistance of the local print and radio media to provide information to the public. Because wellhead protection is an important community issue, the media should be more than willing to assist.
- **Videos** — The city of Lafayette is one community that has developed a video about ground water and wellhead protection. Their video was produced by the local cable provider as a public service. The local education committee plans to show the video to eighth grade classes to teach them about ground water and how to protect it. By showing the video for a number of years, many future adults of the community will be educated.
- **Public service announcements** — Broadcasting public service announcements on radio and television can be especially effective at getting people to attend meetings or informing them of wellhead protection activities.
- **Information booth at county fair** — Every summer, the Reo Cooperative Water Supply has a booth at their county fair where they distribute information about the wellhead protection area and ways everyone can protect the community water supply.
- **Water fair** — A water fair featuring water related activities for school children can benefit both the children and their parents. Youth can be excellent teachers, especially when they get enthusiastic about something and tell their parents and grandparents all about what they have learned.
- **Letters and maps to residents and businesses in the wellhead protection area** — A letter with a map showing the location of the wellhead protection area could be used to inform the public of the importance of this area and to generate interest in the wellhead protection planning process itself.
- **Fliers or bill inserts** — Providing fliers or bill inserts describing proper disposal of household hazardous waste, used motor oil, and pesticides is

another way to inform and educate the public. Some examples of bill inserts describing best management practices are available through Purdue Extension (See *Useful Publications*)

- **Poster contest** — Some communities have had a wellhead protection poster contest for school children. This is a good way to get children to focus on wellhead protection, and the resulting posters can be used in educational efforts targeting others.
- **Tours of the local water treatment plant or wellhead protection area** — Providing tours for chambers of commerce, school groups, and local service groups may be a very good idea in your community. Many people have no idea where their water comes from or what steps are taken to test and treat it. An understanding of the processes involved can certainly make people more conscious of the need to protect their water supply.

All of these methods have been used successfully in some communities. Your team can choose among them or try doing something different in your community. Remember, however, using a combination of several methods is always more effective than using any one method alone. The general rule for effective wellhead protection education is to present information in as many different ways as you can, as often as you can. Don't be afraid to try an approach that is new or unique.

Who Can Help?

In-depth education can be added through coordination with industry, government, and universities. Network with interested organizations and individuals. Ask organizations to aid in the education efforts by sponsoring workshops or helping with some aspect of disseminating information.

Many resources are available to assist with your education efforts. Don't overlook local teachers as a resource. Indiana Project Indiana Project WET (Water Education for Teachers) can provide learning activities related to ground water through approximately 90 trained facilitators. The Purdue Extension educator from your local county or someone from your local Soil Water Conservation District or Solid Waste District may be willing to provide some educational assistance, advice, and activities. (See *Information Contacts*.)



Some industries have representatives who may be able to speak at a wellhead protection planning team meeting about the management practices they employ to protect the drinking water. Volunteers may be willing to organize a guest speaker or a water-related workshop through their local organizations. Ask. The worst that can happen is that someone will say no. Even if they can't help with your education efforts, by asking, you have alerted them to the issue. They may recommend someone else who can help, and another person will be made aware of wellhead protection education efforts in your community. Whoever you choose, make sure they understand who the audience is and what message you would like delivered.

What's Next?

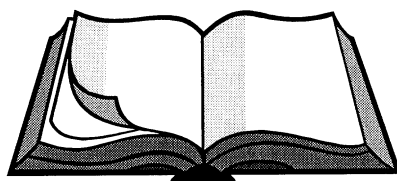
Once you have completed all the parts of your wellhead protection plan, the last step is to submit the completed plan to IDEM. The application can be found at IDEM's Web site. (See *Information Contacts*.) Check through the steps shown on the application to make sure you have done everything. Make sure you keep a copy of everything for your records.

Wellhead protection education is a continual process, not a one shot deal. Progress that is made in educating the public today will help protect your drinking water for a long time. Every meeting and news release about wellhead protection is a part of community education. Some of the things you do this year can be repeated in a few years and will reach a new audience, or the same audience in a different way. Finally, when you accomplish something, celebrate your success. Remember that each accomplishment adds up.

Useful Publications

The following Purdue Extension publications provide information about other aspects of the wellhead protection process.

- WQ-22, "Indiana Farmstead Assessment for Drinking Water Protection"
 - WQ-24, "Wellhead Protection in Indiana"
 - WQ-25, "Home*A*Syst, An Environmental Risk-Assessment Guide for the Home"
 - WQ-28, "Forming the Wellhead Protection Planning Team"
 - WQ-29, "A Short Cut to Wellhead Protection Delineation for Some Systems"
 - WQ-30, "Choosing a Consultant to Delineate the Wellhead Protection Area"
- WQ-31, "Inventorying Potential Sources of Drinking Water Contamination"
- WQ-32, "Indiana Farm Assessment: Basic Questions"
- PPP-35, "Pesticides and Drinking Water"
- PPP-42, "Pesticides and Environmental Site Assessments"
- WQ-36, "Helpful Hints for Wellhead Protection"
- WQ-37, "Land Use Strategies for Wellhead Protection"
- WQ-38, "Management Options for Wellhead Protection"



You may find the following two brochures to be useful in your outreach efforts:

- "Wellhead Protection: What Every Farmer Should Know"
- "Protecting Your Drinking Water: What Every Citizen Should Know About Wellhead Protection"

All the above are available through your county Purdue Extension office or by calling 1-888-EXT-INFO.

Contingency Planning for Wellhead Protection, IDEM's Fact Sheet on Wellhead Protection is available by calling or writing IDEM's Drinking Water Branch (See *Information Contacts*.)

Wellhead Protection: A Guide for Small Communities, EPA/625/R-93/002.

This EPA publication gives a detailed description of the entire wellhead protection process and is available free from the USEPA publication office (1-800-490-9198).

A Guidance Manual for Developing Best Management Practices (BMP). EPA833B93004 is available through the National Service Center for Environmental Publications, P.O. Box 42419, Cincinnati, OH 45242-2419. (1-800-490-9198)

Information Contacts

- The Purdue Extension office in your county can provide you with information and resources on water quality protection. Look in the phone book under county government, or call 1-888-EXT-INFO.
- “Safe Water for the Future” is a Purdue Extension program that provides resources including this and other publications on wellhead protection and watershed protection. Call 765-496-6331 or visit our Web site at <<http://www.ecn.purdue.edu/safewater>>.
- Signs for posting around the wellhead protection area are available through Penn Products, Indiana Department of Corrections, 6015 Guion Road, Indianapolis, IN 46250, (1-800-PENN-2550).
- Indiana Department of Environmental Management, Ground Water Section, can provide information on Indiana’s Wellhead Protection Rule and compliance. Call the Groundwater Section at 317-308-3321 or 800-451-6027, ext. 308-3321. Information is also available on the Web at <<http://www.ai.org/idem/owm/dwb>>.
- Indiana Water and Wastewater Association provides training and on-site assistance to water supply operators. They can be reached at 1-888-937-4992 or on the Web at <<http://www.iwwa.com>>.
- The Indiana “Rural” Water Association also provides education and assistance to water supply operators. They can be reached at 812-988-6631 or Fax 812-988-6961.
- The EPA Safe Drinking Water Hotline (800-426-4791) is available to help state and local officials and the public answer questions about drinking water. The hotline also has information about the National Rural Water Association’s program to assist small communities develop local drinking water protection plans.
- The Web site for the U.S. Environmental Protection Agency has many educational activities about ground water and water quality. This information can be accessed from <<http://www.epa.gov/safewater>>.
- The U.S. Geological Survey has ground water education materials online at <<http://ga.water.usgs.gov/edu/index.html>>.

References

Wellhead Protection: A Guide for Small Communities, a USEPA Seminar Publication, EPA/625/R-93/002.

W.K. Kellogg Foundation, *Precious GEMS: Groundwater Education Strategies That Work*, One Michigan Avenue, Battle Creek, Michigan, 49017-4058, 1993.

