



Drinking Water Quality in Indian Country: Protecting Your Sources

One of the most basic needs of any community is safe and clean drinking water. Over 500,000 people rely on the quality of drinking water provided by approximately 743 community water systems owned by Tribes. Many Tribes have seen treatment costs increase over the past decade, and contaminant threats continue to increase as old infrastructures, such as septic tanks, underground gas tanks, and wastewater facilities, deteriorate. In 1998, seven percent of public water systems serving tribal populations violated health-based contaminant-related federal drinking water standards.

WHAT ARE THE THREATS TO DRINKING WATER?

Sometimes the source of drinking water contamination is something commonly used and is not noticed because it may take years to reach the water supply. For example, the Shoshone-Bannock Tribes of the Fort Hall Reservation in Idaho discovered high levels of a potentially carcinogenic pesticide, ethylene dibromide, in



their ground water source during routine monitoring. This contamination was the result of standard farm use of pesticides. The contamination was so extensive that the Tribe must bring in safe drinking water from outside the large contaminated area, which required construction of a multi-million dollar water pipeline system.

?? DID YOU KNOW ??

Nationwide, more than 80 percent of drinking water systems report having at least one potential source of contamination within two miles of their water intake or well.

Only 3,300 out of 55,000 water suppliers use protection measures to lower the risk of source water contamination.

WHAT ARE SOME SOLUTIONS?

Instead of remediation, added chemical treatment, and investment in new technologies after a contamination event, *protecting the source* from contamination can be much more cost effective. If harmful pathogens and chemicals are kept out of the river, lakes, or aquifers that tribes use as drinking water then the risk to human health is lowered significantly. This first barrier - **source water protection** - is not the only barrier to safeguard human health against waterborne contaminant threats. Yet it is an important first step that can save money and decrease risks to human health.

On average, 30,000 new leaks from underground gasoline storage tanks are reported each year.

ASSESSING THE SOURCE

A tribal water supply operator should **assess the sources of drinking water** and identify the potential problems to help determine what actions are needed to prevent contamination of the drinking water sources.

ASSESSMENT STEPS

MAP the Source Water Protection Area

INVENTORY Potential Contaminant Sources

ANALYZE and Determine the Susceptibility of the Water Supply to Contamination

INFORM the Public

Step 1: Map the Source Water Protection Area

For each ground water well or surface water intake that supplies drinking water, the source water protection area is the land area that could contribute pollutants to the drinking water supply.

For water systems that use a well, the source water protection area is the land that lies over the part of the aquifer that supplies water to the well. The *EPA Handbook of Ground Water and Wellhead Protection* (EPA/625/R-94/001) outlines several appropriate and affordable methods to identify this area for different situations.

For a community that relies on a river, lake or reservoir, the source water protection area is the watershed upstream of the drinking water intake. A watershed is the land area where rain or snow falls and flows over or through the ground to eventually enter the stream or lake. *State Methods for Delineating Source Water Protection Areas for*

Surface Water Supplied Sources of Drinking Water (EPA 816-R-97-008) provides information on surface water delineation techniques.

Step 2: Inventory Potential Contaminant Sources. Within the source water protection area, an inventory of all potential threats should be conducted. A contaminant source inventory should look for all potential sources of the regulated substances listed in the Safe Drinking Water Act and other substances of concern to the community. Common potential sources of contamination for Tribes are septic tanks, underground fuel storage tanks, residential or commercial septic systems, farms that apply pesticides and fertilizers, and abandoned wells. EPA Regional Offices have materials to assist with inventories.

Step 3: Determine the Susceptibility of the Water Supply to Contamination. The next step of an assessment is to determine the likelihood that the inventoried contaminants will impact the water supply. This susceptibility determination will help local decision-makers, the water supply operator, and concerned citizens consider priority activities to undertake for protecting the source water. EPA Regional Offices have several examples

CONTAMINANT RISKS

How close are these potential contaminant sources to your water supply?

Gas stations	Abandoned wells
Septic tanks	Field crops
Sewer lines	Chemical Storage
Animal feeding operations	

Attentive management practices can often be an alternative to banning activity in source water protection areas.

of susceptibility determination approaches to assist Tribes.

Step 4: Inform the Public

The results of the assessments can help communities better understand the potential threats to their water supplies and identify priority needs for protecting their source water from contamination. The most important aspect of an assessment is that it provides the basic information needed by a community to plan activities that will lower the risk of contamination.

AFTER THE ASSESSMENT

Consider Source Water Protection. Source water protection is preventing the pollution of the waters that serve as sources of drinking water. There are a wide array of activities that tribes have undertaken to prevent contamination of their drinking water supplies. Some examples include:

Oneida Indian Tribe Abandoned Well Ordinance. The Oneida Tribe decided that an ordinance prohibiting abandoned wells within critical areas was important to prevent contamination of the ground water resource. With this ordinance in place, the tribe's drinking water source is less vulnerable to contamination by substances that might drain into the abandoned well holes. Regulatory approaches, such as prohibiting or restricting land uses that may release contaminants in critical source water areas are sometimes the best solution.

Hoopa Tribe Public Outreach Campaign. The Hoopa Tribe sponsored advertisements and radio programs about drinking water issues and the need to prevent source water contamination. They also distributed fliers to inform the community about their water

INFORMING THE PUBLIC

EFFECTIVE WAYS TO PROVIDE ASSESSMENT INFORMATION TO THE PUBLIC:

- * Post on community bulletin boards
- * Write a newspaper article
- * Use local radio programs
- * Announce it at tribal meetings
- * Include information in the water bill
- * Work with schools to educate children

Source water protection relies on individual responsibility. If people don't know, they don't have the opportunity to act!

supply and encouraged citizens and businesses to recycle used oil, limit their use of pesticides, and participate in watershed cleanup activities.

Shoalwater Bay Indian Tribe Assessment and Monitoring Program. This community is dealing with a serious health concern that they have not been able to attribute to any given cause. The community water supplier is conducting an assessment and ground water monitoring in an effort to make sure that the drinking water is not at risk of contamination, and to increase public trust in the drinking water supply.

Nez Perce Tribe Wellhead Protection Program. The Nez Perce Tribe is developing a wellhead protection program in response to concerns over increasing levels of nitrates in the deep aquifer on the Reservation. They hope to develop a collaborative management approach with community members to address activities that may be sources of contamination.

Resources For Tribes

What Resources are Available for Tribes?

The U.S. Environmental Protection Agency (EPA) is firmly committed to protecting drinking water sources in Indian country, and will provide technical and financial assistance to tribes interested in conducting source water assessment and protection activities.

EPA Source Water Assessment Financial Assistance. Since 1998, EPA has set aside funds specifically for source water assessment and protection activities in Indian country. Some EPA regional offices have used this funding to support technical circuit riders to assist tribes, while other regional offices provide grants directly to interested tribes. As of 2000, funding continues to be available.

EPA Clean Water Act Section 106 Grants. CWA 106 Funds can be used for both water pollution control and ground water protection activities in Indian country, including source water protection.

Rural Water Association Technical Assistance. As part of a cooperative agreement with the EPA, the National Rural Water Association continues to offer technical assistance to tribes to implement wellhead or watershed protection strategies.

For More Information

To learn more about source water assessment and protection opportunities, contact the EPA regional offices. Also, more information is available on the U.S. EPA Office of Ground Water and Drinking Water webpage:
<http://www.epa.gov/safewater/protect/>

Or contact the EPA Safe Drinking Water Hotline: 1-800-426-4791.

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