



# Drinking Water Quality in Indian Country: Protecting Your Sources

## WHAT IS SOURCE WATER PROTECTION?

Source water protection is preventing the pollution of the waters that serve as sources of drinking water. One of the most basic needs of any community is safe and clean drinking water. Nearly 700,000 people rely on safe drinking water provided by 750 community water systems, which are owned by tribes. Many tribes have seen treatment costs increase over the past 20 years and contaminant threats continue to increase as old infrastructures, such as septic tanks, underground gas tanks, and wastewater facilities, deteriorate. In June 2007, ten percent of tribal community water systems violated health-based contaminant-related drinking water standards.

## WHAT ARE THE THREATS?

Sometimes the source of drinking water contamination is something commonly used and not noticed because it may take years to reach the water supply. For example, the Shoshone-Bannock Tribes of 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 resulted even

though applicators followed the manufacturer's recommended use of the pesticide. It was so extensive that the Tribe had to abandon the existing production wells and construct new wells outside the contamination area. Also, a multi-million dollar water delivery system had to be constructed to provide safe water to homes located in the contamination zone that rely on affected individual wells. Other threats are discussed in this fact sheet.

## WHAT ARE SOME SOLUTIONS?

Instead of fixes such as added chemical treatment, and investment in new technologies after a contamination event, protecting a water source from contamination can be much more cost effective. If harmful pathogens (i.e., viruses and bacteria) and chemicals are kept out of rivers, lakes, or underground water supplies (aquifers) that tribes use for drinking water, the risk to the human population is lowered significantly. The first barrier, *source water protection*, is not the only barrier to waterborne contamination threats, but it is an important first step that can save money and reduce risks to human health.

## ASSESSING THE SOURCE

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



*In 2004, there were 1,074 leaks from underground gasoline storage tanks in Indian Country.*

### ?? DID YOU KNOW ??

- **As of November 2007, nearly two-thirds of all tribal community water systems had completed source water assessments.**

sources. *Protecting Drinking Water: A Workbook for Tribes* (Tribal Workbook) provides step-by-step instructions on how to develop a workplan and complete a source water assessment. It supplies worksheets and tables for copying and is available on line for downloading in a compressed WordPerfect file at: [www.water-ed.org/doc.asp?=1061](http://www.water-ed.org/doc.asp?=1061) or contact your EPA regional office. The Tribal Workbook offers both a simplified approach and a detailed approach to completing assessments. EPA Regions are familiar with the Tribal Workbook and use it in conducting training and tribal assessments.

### ASSESSMENT STEPS

**MAP** the Source Water Area

**INVENTORY** Potential Contamination Sources

**ANALYZE** and Determine the Susceptibility of the Water Supply to Contamination

**INFORM** the Public

#### **Step 1: Map the Source Water Area**

The source water area is the land area that could contribute pollutants to the drinking water supply. For each tribal public water supply, a map of the “zone of influence” is made. For water systems that use a well, the source water area is the land that lies over the part of the aquifer and the sub-surface that supplies water to the well. For a community that relies on a river, lake, or reservoir, the source water 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.

**Step 2: Inventory Potential Contaminant Sources** For each source water area, the tribe or responsible agency conducts an inventory of all potential contaminant threats and identifies potential sources of regulated contaminants listed in the Safe Drinking Water Act and other

substances of concern to the tribe. Common potential sources of contamination and other substances of concern for tribes are cesspools, underground fuel storage tanks, residential or commercial septic systems, farms that apply pesticides and fertilizers, roads and other paved surfaces, and abandoned wells. EPA Regions have materials to assist with inventories.

#### **Step 3: Determine the Susceptibility of the Water Supply to Contamination**

The next step is to determine the likelihood that the inventoried contaminants and their contamination sources will impact the water supply. This helps tribal decision makers, the water supply operator, managers of potential contaminant sources (e.g, gas station owners), and concerned tribal citizens consider priority activities to undertake for protecting the source water area. The Tribal Workbook provides several susceptibility (or risk) determination methods for tribes. EPA Regions have examples of susceptibility determination approaches to assist tribes.

### CONTAMINANT RISKS

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

<b>Gas stations</b>	<b>Abandoned wells</b>
<b>Septic tanks</b>	<b>Field Crops</b>
<b>Sewer lines</b>	<b>Chemical storage</b>
<b>Animal Feeding Operations</b>	

Management practices can be an alternative to banning activities in source water protection areas.

#### **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 to plan activities that will lower the risk of contamination. This information

can be shared in ways that maintain the security of sensitive information.

## **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, in part, on individual responsibility. Information is critical to individual responsibility.**

## **AFTER THE ASSESSMENT**

### ***Consider Source Water Protection***

While source water protection is not the only barrier to safeguard against waterborne contaminant threats, it is an important first step that can save money and decrease risks to human health. Tribes have undertaken a wide array of activities to prevent contamination of drinking water supplies. Some examples include:

### ***Oneida Tribe of Indians of Wisconsin Well Abandonment Ordinance***

The Oneida Tribe developed an ordinance requiring the proper abandonment, or upgrading, of all unused wells within the reservation boundaries. The Tribe believes that the proper abandonment of wells protects public health, safety, and welfare by assuring that wells that may serve as pathways for contamination are properly abandoned. With this ordinance in place, the Tribe's drinking water source is less vulnerable to contamination by substances that could drain into improperly abandoned wells. Regulatory approaches, such as 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 radio programs and public service announcements about drinking water issues and the need to prevent source water contamination. They distributed fliers to inform the community about its water supply, posted "No Dumping" signs in the watershed, published articles promoting source water protection, and encouraged citizens and businesses to recycle used oil, limit their use of pesticides, and participate in watershed cleanup activities.

### ***Sauk-Suiattle Tribe Source Water Protection Actions***

The Sauk-Suiattle Reservation was established on 15 acres in 1984. Overdevelopment on the shallow aquifer supplying the public water supply is an ongoing threat. The Sauk-Suiattle Tribe developed corrective actions as identified in its Source Water Protection Plan (Plan). The Tribe received a Rural Development grant from U.S. Department of Agriculture and is working with the Indian Health Service to drill a deeper well into a confined aquifer. It is replacing, upgrading and separating failing septic systems. The Plan was effective in gaining cooperation with landowners in the absence of regulatory authority, as in reducing the number of cars from 100 to 10 in a private junkyard above the aquifer. The Tribe is also reducing threats from gravel mining, forestry practices, and pesticides in the source water area.

### ***La Posta Band of Mission Indians***

The La Posta Environmental Protection Agency (EPA) completed source water assessments on seven supply wells. Quarterly newsletters included updates on a source water assessment plan (SWAP), which inform the tribal community about progress on each assessment step along the way. La Posta EPA talked to elementary students at schools about how ground water becomes contaminated (directly and indirectly), and prevention. La Posta also held workshops for the community to inform the public of SWAP efforts and ways to make sure a water supply meets federal and local standards. La Posta EPA also held Earth Day, an event at which the public was educated on preventing pollution, and direct and indirect groundwater contamination.

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## **RESOURCES FOR TRIBES**

**Final Guidance on Awards of Grants to Indian Tribes under Section 106 of the Clean Water Act** is intended to help tribes implement effective water quality programs using Section 106 funds. Ground water programs are eligible for these funds. The Guidance lists steps for collecting information to make effective decisions for water quality programs. <http://www.epa.gov/OWM.html/cwfinance/pollutioncontrol.htm>

A draft **Ground Water Monitoring Abstracts for Tribes** is a bibliography a tribe can use for collecting ground water information under Section 106. It is available through EPA Regional Source Water Coordinators.

The **Source Water Collaborative**, a group of 19 national organizations, works to advance source water protection at all levels by promoting land stewardship and smart decisions. [www.ProtectDrinkingWater.org](http://www.ProtectDrinkingWater.org)

The **Trust for Public Land** has three publications on source water protection available for download or purchase from its website, [www.tpl.org](http://www.tpl.org). *Protecting the Source* explores using land conservation ideas for drinking water protection. *Path to Protection* presents ten strategies for source water protection with case studies. *Source Protection Handbook* identifies source water protection tools to.

**Protecting Drinking Water: A Workbook for Tribes** is used by tribes for source water protection and may be downloaded from the **Water Education Foundation** at: [www.water-ed.org/doc.asp?=1061](http://www.water-ed.org/doc.asp?=1061) or contact your EPA regional office.

### **For More Information**

For more about tribal source water protection in your region, contact your EPA Regional Office. Information is also available at <http://www.epa.gov/safewater/tribal.html> Or contact the EPA Safe Drinking Water Hotline: 1-800-426-4791.

## **Tribal Source Water Contacts**

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