

DRINKING WATER PROTECTION

A Citizen's Guide to Getting Involved



Safe Water Depends on Us.
Learn What You Can Do.

WHERE DOES YOUR DRINKING WATER COME FROM?



SOURCE WATER

Source water—water that, after treatment, provides drinking water to your tap—can be from:

- large rivers,
- small streams,
- reservoirs,
- springs, or
- wells.

DRINKING WATER

- Drinking water is typically supplied by a water utility that collects, treats, and distributes treated drinking water to its customers.
- Drinking water systems are considered public systems if they serve more than 25 individuals.
- In more remote areas, private drinking water can be managed by individual landowners, who typically use groundwater from wells or springs.

VULNERABILITY AND PREVENTION

Source water is susceptible to contamination from a variety of activities and land uses. Efforts to protect source water that is used for drinking water occur at the federal, state, local, and individual levels.

This toolkit describes source water protection efforts at the federal and state levels and provides citizens with recommendations for ways to participate in protecting their drinking water.

TYPES OF CONTAMINATION THREATS TO DRINKING WATER SUPPLIES

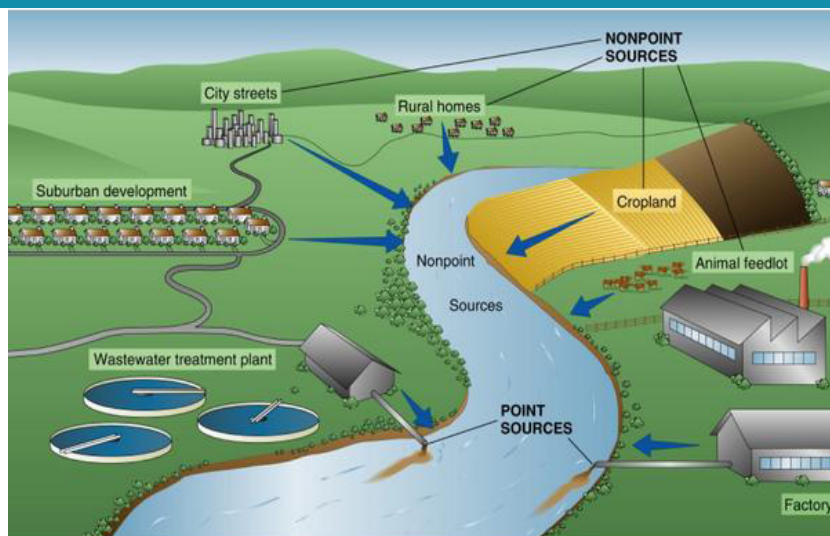
NONPOINT SOURCES

Nonpoint sources are usually diffuse. It is sometimes difficult to determine the cause of pollution from these sources. **Nonpoint sources are generally from:**

- runoff;
- precipitation;
- seepage; or
- stream alteration.

Examples include:

- biological contamination from animal waste;
- fertilizer;
- herbicides or insecticides from excess application;
- oil, grease, or chemicals from energy production;
- acid mine drainage; or
- sedimentation from poorly managed construction sites.



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POINT SOURCES

Point source pollution refers to anything that comes from a discrete pipe, ditch, channel, or concentrated animal feeding operation.

These sources require National Pollutant Discharge Elimination System (NPDES) permits issued by the West Virginia Department of Environmental Protection (WVDEP). These discharges are regulated so as not to cause violations of water quality standards, but they could still potentially contaminate local water supplies during an accident or if site management is not conducted properly.

SOURCE WATER PROTECTION HISTORY AND DEVELOPMENT

Federal laws, such as the Safe Drinking Water Act (SDWA), were enacted to protect source water from contamination and regulate drinking water standards.

SDWA amendments in 1996 required states to create Source Water Protection Programs to carry out assessments for drinking water sources.

Source Water Assessment Reports (SWARs) define "the ability of the water supply, identify sources of potential contamination, and determine susceptibility, or likelihood, of contamination.

In West Virginia, the initial SWARs were completed by the West Virginia Bureau for Public Health (WVBPH), mostly in the early 2000s. Some public drinking water utilities developed Source Water Protection Plans (SWPPs) voluntarily after the SWARs were released.

In January 2014, a chemical leak from an aboveground storage tank contaminated the drinking water for approximately 300,000 citizens in Charleston, West Virginia and in parts of nine counties.

The legislature responded by enacting Senate Bill (SB) 373, which requires most public water utilities to create SWPPs or update no later than July 1, 2016.



West Virginia Rivers Coalition has launched a Drinking Water Community Engagement project to strengthen public participation in local source water planning efforts throughout the state.

ALPHABET SOUP OF DRINKING WATER PROTECTION

BMP: Best Management Practice

CCR: Consumer Confidence Report

MCL: Maximum Contaminant Level

PSSC: Potential Source of Significant Contamination

SDWA: Safe Drinking Water Act

SWAR: Source Water Assessment Report

SWPA: Source Water Protection Area

SWPP: Source Water Protection Plan

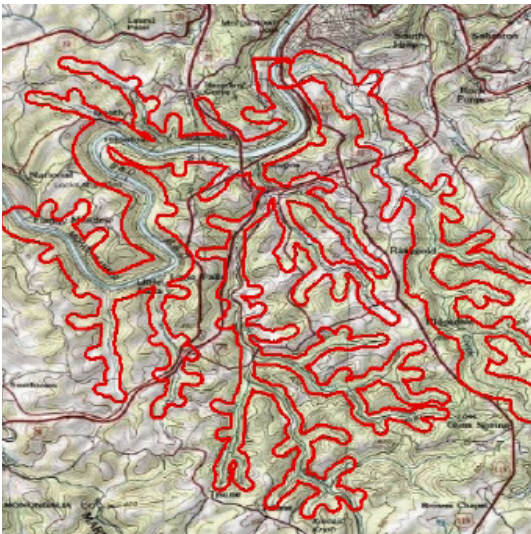
WVBPH: West Virginia Bureau for Public Health

WVDEP: West Virginia Department of Environmental Protection

ZCC: Zone of Critical Concern

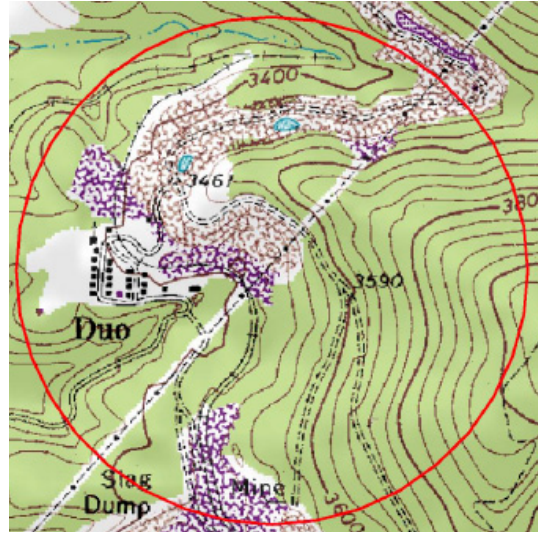
SWARs define source water protection areas to focus protection activities, and these areas differ based on whether intakes draw water from surface water or groundwater.

Surface Water



For surface water drawn from rivers and streams, protection activities focus on the Zone of Critical Concern (ZCC). This is the area that is within a five-hour travel time for a contaminant to flow downstream and reach a drinking water intake.

Groundwater



For groundwater drawn from wells or springs, protection activities focus on the Source Water Protection Area (SWPA). This is a set radius around a well or spring, or a complex area defined by the WVBPH that depends on local geologic and topographic conditions.

While these areas help to focus protection efforts, it is important to also look beyond these areas for potentially important sources of pollution that can contaminate source water.

WEST VIRGINIA SOURCE WATER PROTECTION PLAN REQUIREMENTS

West Virginia law outlines specific requirements for inclusion in the SWPPs. The requirements, described in detail in this document, include:

- Management Plans to minimize the risk of contamination,
- inventories of Potential Sources of Significant Contamination (PSSCs),
- Contingency Plans in the event of contamination,
- Communication Plans in the event of contamination,
- specific engineering details, and
- feasibility studies for the installation of a real time early warning monitoring system.

The updated SWPPs are to be submitted to the WVBPH by **July 1, 2016**. After the plans have been submitted, the WVBPH will hold public hearings on the SWPPs. SWPPs must then be updated every 3 years.

GET INFORMED ABOUT SOURCE WATER PROTECTION PLANNING

READ THE CCR

The SDWA requires public drinking water providers to provide Consumer Confidence Reports (CCRs) each year. The CCR describes the source water for the system, the levels of contaminants in the source water and finished drinking water, the EPA maximum contaminant level (MCL) in finished drinking water, and information about bacteria contamination. The CCR should be readily available to consumers. It is often mailed to customers, but it may also be found on the water utility's website or obtained by request.

READ THE SWAR AND SWPP

Learn about source water protection efforts that have already been completed. The SWAR defines the SWPA or ZCC, and it provides information about source water susceptibility to contamination. Existing SWARs can be found online at: <https://www.wvdhhr.org/oehs/eed/swap/search.cfm>.

PUBLIC INPUT

When writing its SWPP, each utility must solicit public input from drinking water customers and members of the community. Also, utilities are required to engage the public during plan preparation. However, certain information must be kept confidential by law.

ELEMENTS OF SWPP

DRAINS TO WATERWAYS

MANAGEMENT PLAN

The Management Plan provides specific actions that can be taken to minimize the risk of a water contamination event. These actions include a range of activities, such as:

- installing fencing around a well head,
- creating informational documents about source water protection for customers,
- buying property to protect forested landscapes within the ZCC, and
- maintaining communication with PSSCs.

Some of these actions can only be taken by the water utility, but some can be taken by local governments, businesses, or the general public.

GET INVOLVED!

PARTICIPATE IN PROTECTION STRATEGIES

Examples that are relatively easy for citizens to get involved with include:

- managing household chemicals,
- participating in take-back programs that properly dispose of medication,
- properly maintaining septic systems, and
- watching and reporting activities that may impact drinking water.

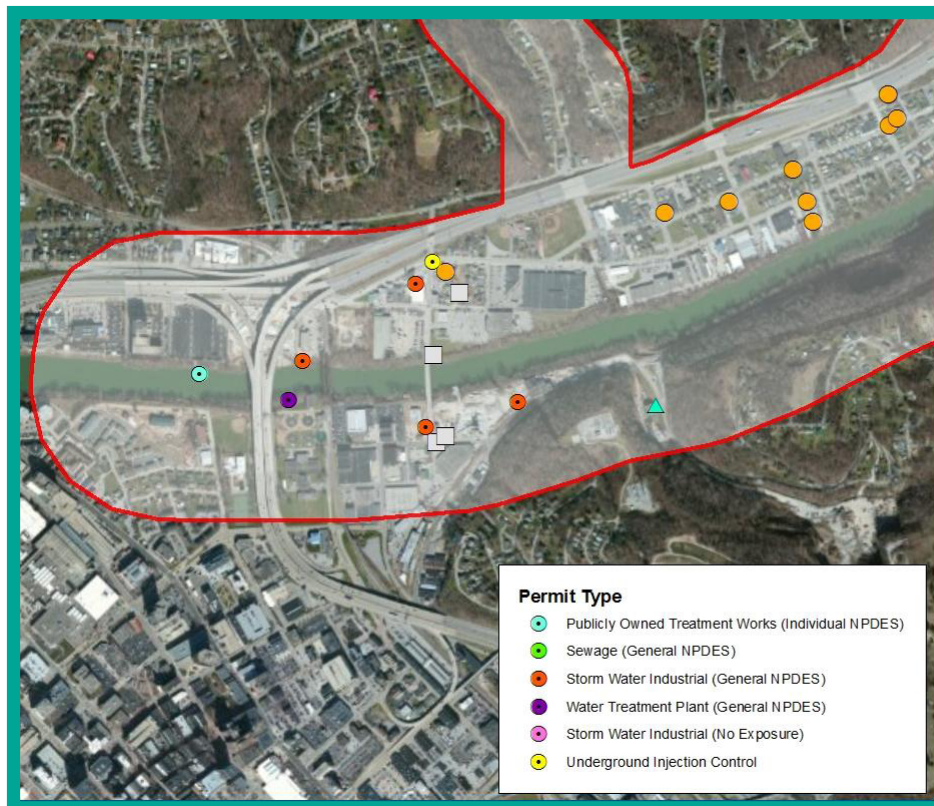
PLACE A CONSERVATION EASEMENT ON YOUR PROPERTY

If you own property, a conservation easement can be placed on it that stipulates the land will always be protected, no matter who the owner is. For more information about conservation easements, contact the West Virginia Land Trust: www.wvlandtrust.org.

SUPPORT ORDINANCES OR REGULATIONS THAT PROTECT SOURCE WATER

Rules and regulations can also help protect drinking water by requiring Best Management Practices (BMPs) or limiting certain types of development within the source water protection areas.

POTENTIAL SOURCES OF SIGNIFICANT CONTAMINATION



This map shows an example of several types of PSSCs. The gray area circled in red shows the ZCC for this area.

Most of the information used to identify PSSCs is located in publicly accessible databases. Information on permitted discharges, coal mines, and underground storage tanks, can all be obtained from WVBPH or the WVDEP. Public utilities that collect this information can share it with those involved in the SWPP process and the general public.

However, some information is confidential and is not available to citizens. Information about the exact location of aboveground storage tanks and the chemicals they contain cannot be made public. Information about where, how much, and how often hazardous materials are shipped via rail is also proprietary information.

PSSCs are facilities or sites that use, produce, or store contaminants that, if managed improperly, could find their way into source water and threaten public health.

Inventories of PSSCs were compiled in the SWARs in the early 2000s, and they may have been updated in the SWPPs completed since then. The new SWPP must update this inventory again.

The WVBPH is providing utilities with lists of PSSCs within the SWPA or ZCC based on databases and the previous SWARs; however, it is up to each utility to review, revise, and prioritize sites on this list.

TABLE OF RANKINGS OF PSSCs

WVBPH recently provided recommendations for determining which PSSCs present the highest risk to drinking water. The new inventory provides a numeric coding for 178 types of facilities or land uses. These scores combine the probability of occurrence and the likely severity of a contamination event. Scores are provided for groundwater and surface water separately.

For example, railroad tracks and yards, highway transportation, and chemical threats are high risks to both groundwater and surface water. Leaking underground storage tanks are higher risk to groundwater, and permitted discharges are a higher risk to surface water.

These scores can be used directly by a utility to prioritize PSSCs; or utilities, with public input, could adjust these scores based on local conditions and priorities.

POTENTIAL THREATS WITH HIGHER RANKING

- Railroad tracks and yards;
- highways;
- combined sewer overflows;
- chemical spills;
- aboveground storage tanks;
- chemical manufacturing facilities;
- illegal or clandestine dumps;
- sewer lines;
- industrial pipelines; and
- landfills.

For more information, visit the WVBPH Source Water Assessment and Wellhead Protection Program page at: <http://www.wvdhhr.org/oehs/eed/swap/>

GET INVOLVED!

ACCESSING THE DATA

Most of the databases used to create the PSSC list within the ZCC or SWPA are publicly accessible through the West Virginia Water Resources Management Plan Mapping Tool located at <http://tagis.dep.wv.gov/WVWaterPlan/>

OTHER WAYS TO FIND PSSCs

The WVDEP databases will provide information on permitted facilities and activities, but other PSSCs can be found by:

- assessment of updated aerial imagery;
- field review or windshield survey of the SWPA or ZCC; and
- communication with community members.

GET INVOLVED!

Share any information you may have on PSSCs that may not be recognized by the utility during public meetings or directly to the utility. Provide feedback on the threat categories.

CONTINGENCY PLAN

The Contingency Plan refers to actions that would be necessary to respond to a contamination event. This plan provides detailed steps to take during a water contamination event. It defines roles for all involved and identifies who would serve in those roles.

Contingency Plans should be developed with input and collaboration with local emergency response personnel, local health departments, and elected officials. During a water emergency, all of these entities—along with the public water utility—will play a role in keeping the public informed and safe.

COMMUNICATIONS PLAN

The Communication Plan is linked with the Contingency Plan. It provides contact information for people who would be called during a water contamination event. In addition, it can include pre-written public statements to make it easier for the utility to

efficiently communicate with the public in an emergency.

As with the Contingency Plan, collaboration with local emergency response personnel, local health departments, and elected officials is important.

ENGINEERING DETAILS

West Virginia law requires specific information related to engineering and operation of the drinking water plant:

- ability to isolate or divert contaminated waters;
- ability to switch to an alternative intake;
- ability to close its water intake;
- certain operational information;
- available storage capacity;
- unaccounted for water; and
- options to provide service if the primary intake is detrimentally affected.

EARLY WARNING MONITORING

An early warning monitoring system is an automated system that would detect a change in raw water quality before it reaches the drinking water intake. These

systems continuously detect key contaminants that indicate that there is a change in water quality that requires a follow-up investigation to identify the cause.

GET INVOLVED!

- Get informed about your source water and source water protection efforts by reading the CCR and the SWAR for your drinking water utility.
- Participate in source water protection efforts by reviewing SWPPs and providing input.
- Take actions to protect your source water, such as properly managing household chemicals and reporting any activities that may be detrimental to source water.
- If your property is within a SWPA, place a conservation easement on your property to minimize development into the future.
- Support ordinances or regulations that protect source water.
- Review publicly accessible data or aerial imagery for PSSCs, and share information with your water utility.
- Get involved with your local emergency planning committee.
- Report a spill or accidental discharge to the WVDEP at 1-800-642-3074.

ABOUT

This toolkit is a project of the West Virginia Rivers Coalition (WV Rivers) to provide citizens with information on how to get involved in protecting their drinking water. WV Rivers is a statewide organization dedicated to conserving and restoring West Virginia's exceptional rivers and streams that feed our public drinking water supplies.

www.wvrivers.org

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SAFE WATER
FOR WEST VIRGINIA

