

Introduction

This resource provides key facts and talking points to educate customers and employees about American Water's efforts to monitor water quality in drinking water sources. Results of a recent survey of Pennsylvania American Water customers and employees suggest that this is an important topic. Nearly 70% of those surveyed (N=212) ranked leading efforts to monitor water quality in drinking water sources among the most important environmental activities we can do.

1 Protecting Our Drinking Water Supplies

Protecting drinking water at its source is an essential part of a multi-barrier approach – along with treatment and distribution – to provide reliable, clean water to our customers. We start by selecting a high-quality supply to meet anticipated long-term needs. We conduct risk assessments to identify and mitigate potential future threats to existing sources of supply. Monitoring is an important component of the assessment process because it provides information about baseline conditions and potential changes in water quality.

2 Identifying Potential Sources of Contamination

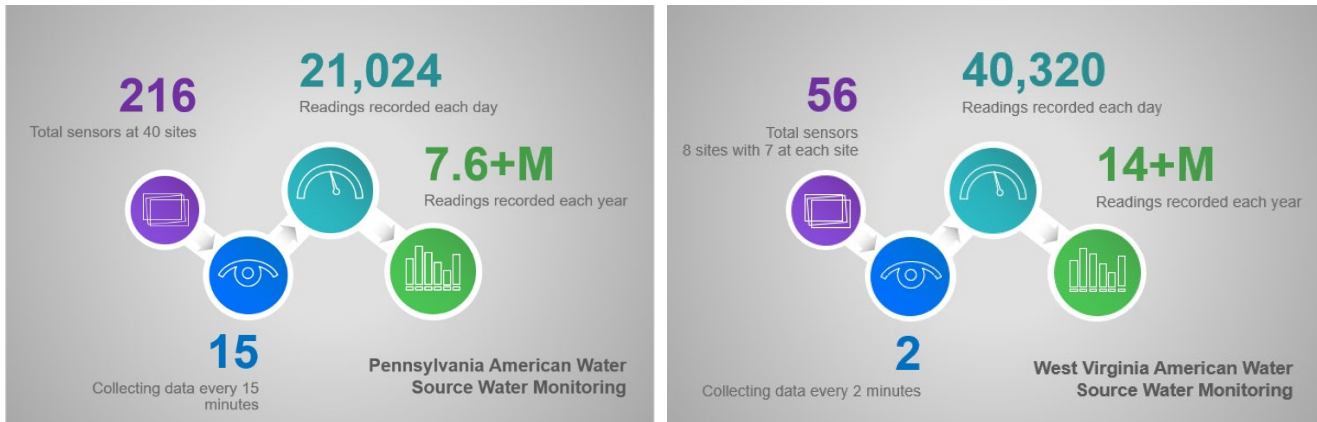
We have adopted a new and innovative GIS map-based tool, WaterSuite, that collects information about potential sources of contamination into a single, updatable information database. This information can come from various data sources, including federal and state databases, stakeholder input, aerial imagery analysis, and windshield surveys. We evaluate and prioritize potential sources of contamination based on distance, size and type of facility or activity, and the type of materials that may be present. We use this information to guide monitoring and mitigation activities.

3 Monitoring Our Sources of Supply

We have installed source water monitoring systems to detect changes in surface water quality that may indicate the presence of possible contamination. Each monitoring panel is equipped with various sensors to measure parameters such as pH, temperature, conductivity, oxidation reduction potential, dissolved oxygen, and organics. The selection of sensors used depends on the potential sources of contamination. Data is collected on a continuous, real-time basis.

We are collecting baseline water quality data in source water to better understand normal seasonal changes. A variation from the normal baseline for a given source could indicate a potential change in water quality, spurring further investigative testing.

West Virginia American Water is partnering with international experts on an advanced event detection system that can identify statistical changes in water characteristics from baseline and provides real-time alert notification to water system personnel. This provides operational staff the opportunity to investigate and respond to potential contamination events as well as optimize the plant treatment process.

Source Water Monitoring – Mid-Atlantic Highlight


4 Partnering on Watershed Monitoring Networks

We partner with other utilities and organizations to conduct monitoring as part of larger river networks, such as those along the Delaware and Ohio rivers. We also work with watershed networks and local, state, regional, and federal agencies to receive notifications when a spill has occurred that may affect one or more intakes on a surface water body.

Delaware Valley Early Warning System (EWS)

Pennsylvania American Water and New Jersey American Water are members of the Delaware Valley EWS, a water quality event reporting system for the Delaware River and major tributaries. The EWS provides spill reports and modeled travel times to water supply intakes.

Ohio River Valley Water Sanitation Commission (ORSANCO)

Several American Water subsidiaries participate in the Organics Detection System (ODS), a voluntary cooperative effort involving water utilities, water users, and ORSANCO. The purpose of the ODS network is to monitor water quality conditions for the protection of drinking water supplies. Benefits include routine monitoring and coordinated communication with upstream and downstream water utilities in the event of a spill or release. There are 17 ODS stations along the Ohio, Allegheny, Monongahela, Kanawha, and Elk rivers.

Streamflow Gaging with United States Geological Survey (USGS)

West Virginia American Water partnered with USGS to install a new stream gage that reports real-time velocity data on the Elk River near the Kanawha Valley Treatment Plant in Charleston. Prior to installing the new gage, the closest gage was located approximately 18 miles upstream. The Charleston Elk River gage data is live and available to the public at <https://waterdata.usgs.gov/usa/nwis/uv?03197950>.

5 Emergency Response & Communications

Water utilities can develop strategies to understand and manage risks to drinking water supplies, but no water utility can prevent the occurrence of chemical releases, power outages or natural disasters. We have response plans in place to prepare for and respond to a wide variety of potential emergency situations. In the event of a water-related risk or threat, we use a high-speed mass notification system to keep customers informed.

6 Emerging Contaminants

Our teams work to identify new threats to source water quality, act on evolving regulations and new health advisories, and assess advanced treatment technologies. We are evaluating a growing list of emerging contaminants that may affect source water, such as cyanotoxins, lead, and perfluoroalkyl substances (PFAS). We are working with new and emerging technologies to predict, monitor, and manage potential source water issues.

*We maintain **Cyanotoxin Management Plans** that identify risk factors for harmful algal blooms, water quality indicators, monitoring and treatment protocols, and notification processes. We have also developed internal capability for monitoring harmful algal blooms with test strips, automated analyzers, and laboratory methods.*

7 Monitoring from Source to Tap

We take water quality very seriously, and your safety is our number one priority. When it comes to complying with strict federal regulations for delivering safe, quality drinking water, we've consistently scored among the highest of all water companies. We perform more than one million water quality tests per year at our water testing laboratories and other facilities.

8 Our Laboratory Capabilities

We maintain state-of-the-art water quality testing equipment at our Central Laboratory and Water Research Laboratories, so that our dedicated team of water quality experts is better equipped to detect and respond to potential contaminants.

9 Water Quality Reports

We provide Water Quality Reports – also called Consumer Confidence Reports – to our customers annually. Visit our [website](#) to access the Water Quality Report for your area. Across American Water, we have received more than 150 awards from state and federal regulators and industry organizations for drinking water quality.

10 Leading the Industry in Water Research

Our research and development (R&D) program has evolved over the past three decades into an industry leading water research program. We collaborate on a significant number of research projects with many stakeholders, including government entities, consultants, universities, other utilities, and research organizations. Our research team of PhD scientists is focused on identifying and treating new contaminants of concern.

Related Resources

- American Water Sustainability Reports:
<https://amwater.com/corp/about-us/corporate-info/corporate-responsibility>
- Water Quality Reports:
<https://amwater.com/corp/water-quality-wastewater-service/water-quality-reports>
- Water Quality & Wastewater Services Fact Sheets:
<https://amwater.com/corp/water-quality-and-wasterwater-service>