



2017 Annual

Water Quality Report

Elk River Regional System

PWS ID: WV3302016



WEST VIRGINIA
AMERICAN WATER

We encourage you to read and share this annual Water Quality Report that can be viewed electronically at www.amwater.com/ccr/kanawhavalley.pdf

A Message from the West Virginia American Water President

Water. We all need it. Not just to live but to feel alive. At West Virginia American Water, water is all we think about. Your local West Virginia American Water team works around the clock to constantly monitor our treatment facilities, maintain miles of pipeline, and perform countless quality tests each year. We do all of this to provide you with safe, clean, affordable and reliable water services to make sure we keep your life flowing.



I am pleased to share with you another excellent report on the quality of your drinking water. As you read through our Annual Water Quality Report, you will see that we continue to supply water that meets or surpasses state and federal water quality standards. We are the providers and protectors of a precious resource, and we run thousands of tests each year to make sure our water meets the highest standards: Ours.

Last year, we invested \$73 million to upgrade our water treatment and pipeline systems across West Virginia to further improve water quality and reduce emergency service interruptions. Here are some highlights of how we put your water bill to work in 2017:

- **Water Mains, Service Lines and Hydrants:** We invested \$22.5 million to replace 155,532 feet (nearly 30 miles) of aging pipe primarily installed between the early 1900s and the 1940s with new pipe, as well as numerous service lines and fire hydrants. These improvement projects help improve water quality, pressure, fire protection and service reliability. Over the past few years, we've dramatically accelerated our water main replacement program. **Today, we're investing at about a 100-year replacement rate.**
- **Water Tanks:** We invested \$9 million to build two new water storage tanks in the St. Albans area, adding 8 million gallons of water storage to our Kanawha Valley system. We also spent \$1.5 million to rehabilitate and paint six water storage tanks in Charleston, Chelyan, Dunbar, Eskdale, Nitro, Salt Rock and to extend the life of the tanks and bring them up to current industry

standards.

- **Water Treatment:** Our treatment plants received upgrades to intakes, pumps, filters, instrumentation, SCADA systems, and chemical feed systems. We completed a multi-year project to fully automate the New River water treatment plant and installed air-stripping systems at two tanks in our Huntington system to reduce the potential for harmful disinfection byproducts.
- **Pumping Stations:** We improved or replaced multiple booster stations and pressure reducing stations across our system to maintain proper flows and water pressure across mountainous terrain.
- **Source Water Protection:** We installed a new continuous monitoring system for organic contaminants at our Kanawha Valley treatment plant, which became part of ORSANCO's Organic Detection System – a network we've participated in for decades at our Huntington plant. We also conducted a location study for upstream monitors on the Elk River and invested in equipment to better view and evaluate data from online source water monitors at all of our treatment facilities.

We take water quality so seriously that seven of our eight water treatment plants have been nationally recognized with prestigious Directors Awards from the U.S. EPA's Partnership for Safe Water program for surpassing federal and state drinking water standards. All of our plants that have received this award have maintained it in every subsequent year – some as many as 20 consecutive years.

We hope our commitment to you and our passion for water shines through in this report detailing the source and quality of your drinking water over the last year. We will continue to work around the clock to keep life flowing – today and for future generations.

Proud to be your local water service provider,

Brian Bruce
President, West Virginia American Water



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WE CARE ABOUT WATER. IT'S WHAT WE DO.®

Commonly Asked Questions

Is there lead in my water?

If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. West Virginia American Water is responsible for providing high quality drinking water, but cannot control the variety of materials used in plumbing components. When your water has been sitting for several hours, you can minimize the potential for lead exposure by flushing your tap for 30 seconds to 2 minutes before using water for drinking or cooking. If you are concerned about lead in your water, you may wish to have your water tested. Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available from the Safe Drinking Water Hotline or at <http://www.epa.gov/safewater/lead>.

How hard is my water?

Hardness is a measure of the concentration of two minerals, calcium and magnesium, naturally present in water. Hardness levels range from 16 to 108 ppm, or 1 to 6 grains per gallon of water.

How much sodium is in my water?

The sodium level is approximately 7.3 ppm (or mg/L).

What is the pH (acidity) range of my water?

Water in the distribution system averages 7.2 pH units. A pH of 7.0 is considered neutral, neither acidic nor alkaline.

Is there fluoride in my water?

West Virginia American Water adds fluoride to a level of near 0.8 ppm to assist in the prevention of dental cavities.

Where Does My Water Come From?

West Virginia American Water and its customers in the Elk River Regional Water system are fortunate because we enjoy an abundant water supply from the Elk River, which is a surface water source. The current treatment plant provided roughly 10 billion gallons of water throughout the year to customers in Kanawha, Boone, Putnam, Lincoln, Logan and Cabell counties. The water supply is distributed for residential, commercial and industrial use. To learn more about our watershed on the internet, go to the U.S. EPA's Search Your Watershed at www.epa.gov/owow/.

Partnership for Safe Drinking Water Program

West Virginia American Water is a member of the national Partnership for Safe Water (an association of water utilities and government) which is committed to providing drinking water quality that is far better than what is required by federal regulation. This facility completed its self-assessment in 2010 and received the "Director's Award" presented by the administrator of the US Environmental Protection Agency. In 2015, this



facility received the Five Year Directors award for continuous compliance with the Partnership goals.

Water System of the Year

The WVAW Elk River Regional Water system received the 2017 Surface Water System of the Year Award from the West Virginia Bureau for Public Health for overall drinking water performance. This award is presented each year to the water system demonstrating the highest optimized water quality that continuously exceeds regulatory requirements and has no violations or sanitary survey deficiencies.

Source Water Assessment and Protection

A Source Water Assessment describes the source of drinking water supply for a public water system and potential contaminant sources that could affect that source. The West Virginia Bureau for Public Health developed a Source Water Assessment for the Elk River Regional System under the 1996 amendments to the Federal Safe Drinking Water Act (SDWA). West Virginia American Water has since updated the Source Water Assessment as part of our source water protection planning efforts in accordance with State regulatory requirements established in 2014 under Senate Bill 373. Information about the Elk River Regional System and Source Water Assessment is included in the public version of the Source Water Protection Plan, which is available online at www.westvirginiaamwater.com under the Water Quality & Stewardship > Source Water Protection menu. A copy can also be obtained by contacting our Source Water Protection Manager at (800) 685-8660.



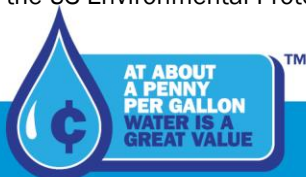
As a protective measure, the Elk River Regional Water system, in conjunction with the Ohio River Valley Water Sanitation Commission (ORSANCO) and other water utilities along the Ohio River and major tributaries, jointly operate the Organic Detection System for detection and tracking of in-stream chemical spills.

Share This Report

Landlords, businesses, schools, hospitals and other groups are encouraged to share this important information with water users at their location who are not billed customers of West Virginia American Water and therefore do not receive this report directly.

How is My Water Treated and Purified?

Current treatment processes include coagulation and settling followed by filtration and disinfection. An inhibitor is added for corrosion control and fluoridation is provided for reduction of dental cavities. Throughout the process dedicated plant operations and water quality staff continuously monitor and control these plant processes to assure you, our customers, a superior quality water.



Information on the Internet

The U.S. EPA Office of Water and the Centers for Disease Control and Prevention websites provide a substantial amount of information on many issues relating to water resources, water conservation and public health. You may visit these sites or West Virginia American Water's website at the web addresses below:

West Virginia American Water
www.westvirginiaamwater.com

West Virginia Bureau for Public Health
www.wvdhhr.org/oehs

United States Environmental Protection Agency
www.epa.gov/safewater

Safe Drinking Water Hotline: (800) 426-4791

Centers for Disease Control and Prevention
www.cdc.gov

Special Monitoring:

In addition to the unregulated contaminants normally monitored by our facility, in 2018 the Elk River Regional Water system will begin sampling for a series of unregulated contaminants in accordance with the Unregulated Contaminant Monitoring Rule (UCMR4). Unregulated contaminants are those that don't yet have a drinking water standard set by USEPA. The purpose of monitoring for these contaminants is to help the EPA decide whether the contaminants should have a standard. Should you desire any further information, please contact West Virginia American Water, P. O. Box 1906, Charleston, WV 25327 or by calling (800) 685-8660.

Chromium, a metallic element, is found in rocks, soil, plants, and animals. Chromium is also used in steel making, metal plating, leather tanning, paints, dyes and wood preservatives. The most common forms of chromium in the environment are trivalent (chromium-3), hexavalent (chromium-6) and the metal form, (chromium-0). USEPA currently regulates chromium-6 as part of the total chromium drinking water standard. Additional information can be found at <http://water.epa.gov/drink/info/chromium/index.cfm/>.

Substances Expected to be in Drinking Water

To ensure that tap water is of high quality, U.S. Environmental Protection Agency prescribes regulations limiting the amount of certain substances in water provided by public water systems. U.S. Food and Drug Administration regulations establish limits for contaminants in bottled water, which must provide the same protection for public health. West Virginia American Water's advanced water treatment processes are designed to reduce any such substances to levels well below any health concern.

The source of drinking water (both tap water and bottled water) includes rivers, lakes, streams, ponds, reservoirs, springs, and wells. As water travels over the surface of the

land or through the ground, it dissolves naturally-occurring minerals and, in some cases, radioactive material, and can pick up substances resulting from the presence of animals or from human activity.

Contaminants that may be present in source water include:
Microbial contaminants, such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations, or wildlife.

Inorganic contaminants, such as salts and metals, which can be naturally occurring or may result from urban storm water runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming.

Pesticides and herbicides, which may come from a variety of sources such as agriculture, urban storm water runoff, and residential uses.

Organic chemical contaminants, including synthetic and volatile organic chemicals, which are by-products of industrial processes and petroleum production, and may also, come from gas stations, urban storm water runoff, and septic systems.

Radioactive contaminants, which can be naturally occurring or may be the result of oil and gas production and mining activities.

For more information about contaminants and potential health effects, call the U.S. EPA's Safe Drinking Water Hotline at (800) 426-4791.

Additional Regulatory Requirements

Cryptosporidium is a microbial pathogen found in surface water throughout the US. Although *Cryptosporidium* can be removed through commonly-used filtration methods, US EPA issued a new rule in January 2006 that requires systems with higher *Cryptosporidium* levels in their source water to provide additional treatment. West Virginia American Water's Elk River Regional Treatment Plant monitored for *Cryptosporidium* in its raw water in 2004-2005. Based on the results of the second round of *Cryptosporidium* monitoring, no additional treatment was required under US EPA regulation. In May 2015, the Elk River Regional Treatment Plant began the latest round of monitoring for *Cryptosporidium*, which was completed in 2017. In the last round of sampling, oocysts were observed on 7 of the 24 monthly samples. The need for additional treatment is currently being evaluated by the WV Bureau for Public Health

Special Health Information

Some people may be more vulnerable to contaminants in drinking water than the general population. Immunocompromised persons such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly, and infants may be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. EPA/CDC (Centers for Disease Control and



Prevention) guidelines on appropriate means to lessen the risk of infection by *Cryptosporidium* and other microbial contaminants are available from the Safe Drinking Water Hotline (800) 426-4791 or by calling our Customer Service Center at (800) 685-8660.

How to Read the Data Tables

For your information, we have compiled a list in the adjacent table showing what substances were detected in our drinking water during 2017. Although all of the substances listed are under the Maximum Contaminant Level (MCL) set by the U.S. EPA, we feel it is important that you know exactly what was detected and how much of the substance was present in the water. Please carefully review this report as it provides important information about drinking water and your health. The company remains committed to providing the highest quality water to our customers. For help with interpreting this table, see the "Table Definitions" section.

Unregulated substances are measured, but maximum allowed contaminant levels have not been established by the government.

Table Definitions and Abbreviations

- **Action Level:** The concentration of a contaminant that, if exceeded, triggers treatment or other requirements that a water system must follow.
- **MCL (Maximum Contaminant Level):** The highest level of a contaminant that is allowed in drinking water. MCLs are set as close to the MCLGs as feasible using the best available treatment technology.
- **MCLG (Maximum Contaminant Level Goal):** The level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs allow for a margin of safety.
- **MRDL (Maximum Residual Disinfectant Level):** The highest level of disinfectant routinely allowed in drinking water. Addition of a disinfectant is necessary for control of microbial contaminants.
- **MRDLG (Maximum Residual Disinfectant Level Goal):** The level of drinking water disinfectant below which there is no known or expected risk to health. MRDLGs do not reflect the benefits of the use of disinfectants to control microbial contamination.
- **NA:** Not applicable
- **NTU - Nephelometric Turbidity Units:** Measurement of the clarity, or turbidity, of water.
- **pCi/L (picocuries per liter):** Measurement of the natural rate of disintegration of radioactive contaminants in water (also beta particles).
- **ppm (parts per million):** One part substance per million parts water, or milligrams per liter.
- **ppb (parts per billion):** One part substance per billion parts water, or micrograms per liter.
- **ng/L (parts per trillion):** One part substance per trillion parts water, or nanograms per liter.
- **µg/L:** Micrograms per liter or parts per billion.
- **pH:** A measurement of acidity, 7.0 being neutral.
- **Secondary MCL (Secondary Maximum Contaminant Level):** Contaminants levels that may result in cosmetic or aesthetic effects in drinking water.

- **TT (Treatment Technique):** A required process intended to reduce the level of a contaminant in drinking water.

Water Quality Statement


The staff and management of West Virginia American Water are pleased to report that the water provided to our Kanawha Valley customers during the past year met all the state and federal standards set for drinking water.

The state requires a water utility to monitor for certain substances less than once per year because the concentrations of these substances do not change frequently. In these cases, the most recent sample data are included, along with the year in which the sample was taken.

About American Water

West Virginia American Water, a subsidiary of American Water (NYSE: AWK), is the largest investor-owned water utility in the state, providing high-quality and reliable water services to approximately 530,000 people.

With a history dating back to 1886, American Water is the largest and most geographically diverse U.S. publicly-traded water and wastewater utility company. The company employs more than 6,900 dedicated professionals who provide regulated and market-based drinking water, wastewater and other related services to an estimated 15 million people in 46 states and Ontario, Canada. American Water provides safe, clean, affordable and reliable water services to our customers to make sure we keep their lives flowing. For more information, visit amwater.com and follow American Water on Twitter, Facebook and LinkedIn.



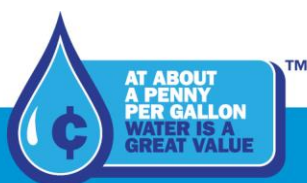
There's a lot more to your water bill than just water.

When you turn on the tap, it's easy to see what your water bill buys. What's not as easy to see is what it takes to bring that water to your home. The miles of pipeline hidden below the ground. The facilities that draw water from the source. The plant where it's treated and tested. The scientists, engineers, and maintenance crews working around the clock to make sure that water is always there when you need it. Your water payments are helping to build a better tomorrow by supporting needed improvements that will keep water flowing for all of us—today and well into the future. All for about a penny a gallon.

AT ABOUT A PENNY PER GALLON WATER IS A GREAT VALUE™

WE CARE ABOUT WATER. IT'S WHAT WE DO. FIND OUT WHY YOU SHOULD, TOO, at amwater.com.

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Water Quality Results

Regulated Substances (Measured on the Water Leaving the Treatment Facility unless noted)

Substance (units)	Year Sampled	MCLG	MCL	Amount Detected	Range Low-High	Compliance Achieved	Typical Source
Alpha Emitters (pCi/L)	2014	0	15	< 0.7	NA	Yes	Radioactive decay of natural deposits
Barium (ppm)	2017	2	2	< 0.1	NA	Yes	Discharge of drilling waste; Discharge of from metal refineries; Erosion of natural deposits
Beta/photon emitters (pCi/L) ¹	2014	0	50	< 1.0	NA	Yes	Radioactive decay of natural deposits and man made sources
Chlorine (ppm) ²	2017	MRDLG=4	MRDL=4	2.0	0.2 - 3.2	Yes	Water additive to control microbes
Fluoride (ppm)	2017	4	4	0.8	0.5 - 1.3	Yes	Water additive which promotes strong teeth
Haloacetic Acids (HAAs) (ppb) ³	2017	0	60	21	5 - 41	Yes	By-product of drinking water chlorination
Nitrate (ppm)	2017	10	10	0.43	NA	Yes	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits
Total Trihalomethanes (TTHMs) (ppb) ⁴	2017	0	80	36	8 - 84	Yes	By-product of drinking water chlorination
Total Organic Carbon (Removal Ratio) ⁵	2017	NA	TT	1.0	0.8 - 1.2	Yes	Naturally decaying vegetation
Turbidity (NTU) ⁶	2017	NA	TT	0.24	0.01 - 0.24	Yes	Soil runoff

¹ The MCL for Beta/photon emitters is written as 4 mrem/year. EPA considers 50 pCi/L as the level of concern for beta emitters.

² Amount detected based on a yearly running average of all bacteriological samples collected in the distribution system.

³ Based on a yearly running average. The amount detected was determined by averaging the numerical running annual average at each of 8 distribution compliance sites.

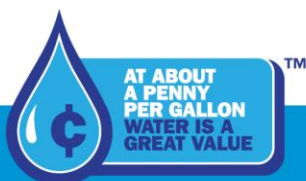
⁴ Based on a yearly running average. The amount detected was determined by averaging the numerical running annual average at each of 8 distribution compliance sites. Some people who drink water containing trihalomethanes in excess of the MCL over many years may experience problems with their liver, kidneys or central nervous system, and may have an increased risk of getting cancer.

⁵ The Treatment Technique (TT) is met if the TOC Removal Ratio (based on a four quarter running annual average) is greater than or equal to 1.0.

⁶ Turbidity is a measure of the cloudiness of the water. We monitor it because it is a good indicator of the effectiveness of our filtration. A minimum of **100%** of all samples taken to measure turbidity met the treatment technique requirement.

Regulated Substances: Lead and Copper Results (water tap samples)

Substance (units)	Year Sampled	MCLG	Action Level	Amount Detected 90 th Percentile	Number of Samples	Homes Above Action Level	Compliance Achieved	Typical Source
Copper (ppm)	2015	1.3	1.3	0.094	50	0	Yes	Corrosion of household plumbing systems, erosion of natural deposits
Lead (ppb)	2015	0	15	2	50	0	Yes	Corrosion of household plumbing systems, erosion of natural deposits



Bacterial Results (from the Distribution System)

Substance (units)	Year Sampled	MCLG	MCL	Highest Percentage Detected	Compliance Achieved	Typical Source
Total coliform (% Positive samples)	2017	0	5% Positive samples	0%	Yes	Bacteria naturally present in the environment

Unregulated Substances (Measured on the Water Leaving the Treatment Facility unless otherwise noted)

Substance (units)	Year Sampled	Average Results	Secondary MCL	Range Low-High	Typical Source
Aluminum (ppb)	2017	20	200	NA	Mineral that occurs naturally in the soil
Chlorides (ppm)	2017	11.1	250	NA	Mineral that occurs naturally in the soil and runoff from road deicing
Iron (ppb)	2017	<100	300	NA	Mineral that occurs naturally in the soil and runoff from mining operations
Manganese (ppb)	2017	<10	50	NA	Mineral that occurs naturally in the soil and runoff from mining operations
Nickel (ppb)	2017	< 5	NA	NA	Industrial sources such as metal reclamation and production of certain alloys
Total Chromium(ppb)	2017	<7.0	NA	NA	Industrial sources such as metal reclamation and production of certain alloys
Sodium (ppm)	2017	7.3	NA	NA	Element that occurs naturally in water and soil; road salt; water softeners
Sulfate (ppm)	2017	40.1	250	NA	Mineral that occurs naturally in the soil
Zinc (ppm)	2017	0.08	5	0.01 - 0.2	Element that occurs naturally in the water; constituent of corrosion control additive

Additional Water Quality Parameters of Interest

This table shows average levels of additional water quality parameters which are often of interest to consumers. Values shown here are averages of operating data for 2017. Values may vary from day to day. There are no health-based limits for these substances in drinking water.

Additional Constituents

Substance (units)	Year Sampled	Average Amount Detected	Range Low-High
Alkalinity, Total (ppm)	2017	44	20 - 88
Hardness, Total (ppm)	2017	43	16 - 108
pH (standard units)	2017	7.2	7.1 - 7.4

