



2018 Annual

Water Quality Report

Bluefield District
PWS ID: WV3302835



WEST VIRGINIA
AMERICAN WATER



This report contains important information about your drinking water. We encourage you to read and share this annual Water Quality Report that can be viewed electronically at www.amwater.com/ccr/bluefield.pdf

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 – and are the only water treatment plants in West Virginia to do so.



A Message from the West Virginia American Water President

To Our Valued Customer:

At West Virginia American Water, water is all we think about. We are the providers and protectors of this precious resource, working 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, reliable and affordable water service to make sure we keep your life flowing.

We remain committed to protecting our sources of drinking water and are currently piloting advanced technology that notifies us of raw water quality changes at our treatment facilities. This state-of-the-art program is new to the industry for this type of use. Our Kanawha Valley and Huntington treatment plants are also part of the ORSANCO Organics Detection System monitoring network, providing additional continuous source water monitoring data.

I am pleased to share with you another excellent report on the quality of your drinking water. As you read through this annual water quality information, you will see that we continue to supply water that meets or surpasses state and federal water quality standards.

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 your life flowing – today, tomorrow and for future generations.

Last year, we invested \$67 million to upgrade our water treatment and pipeline systems across West Virginia to improve water quality, water pressure and service reliability for our customers. That's an investment of nearly \$400 per customer.

Proud to be your local water service provider,

Brian Bruce
President, West Virginia American Water

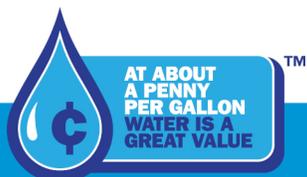
These investments included:

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 has completed its self-assessment and, in 2017, received the prestigious "15 Year Director's Award" presented by the administrator of the US Environmental Protection Agency – only the second plant in West Virginia, at that time- to be so honored.

- Replacing aging water lines and valves
- Upgrading existing water treatment plant intakes, pumps, filters, chemical feed systems instrumentation and technology
- Constructing new pump stations and tanks
- Ensuring fire protection by upsizing water lines and replacing fire hydrants
- Upgrading water treatment processes to comply with the latest water quality standards
- Enhancing source water monitoring systems to detect contaminants in sources of drinking water



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Commonly Asked Questions

Is there lead in my water?

Although we regularly test lead levels in your drinking water, it is possible that lead and/or copper levels at your home are higher because of materials used in your plumbing. If present, elevated levels of lead can potentially cause health problems, especially for pregnant women and young children. We take steps to reduce the potential for lead to leach from your pipes into the water. This is accomplished by adding a corrosion inhibitor to the water leaving our treatment facilities. If you are concerned about possible elevated levels, run your faucet for 30 seconds to 2 minutes before using your water; use cold water for cooking, drinking, or making baby formula; use low lead containing faucets; and when replacing or working on pipes, use lead-free solder. West Virginia American Water remains in full compliance with all of the requirements dealing with lead in drinking water. More information is available from the National Lead Information Center (800) 424-5323, or the Safe Drinking Water Hotline (800) 426-4791, 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 85 to 140 ppm, or 5 to 8 grains per gallon of water.

How much sodium is in my water?

The sodium level is approximately 13 ppm (or mg/L).

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

Water in the distribution system averages 7.1 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 0.69 ppm to assist in the prevention of dental cavities.

Your Drinking Water Supply

Your drinking water is supplied by surface water from three area reservoirs that receive water from local springs. Each reservoir is formed by a dam and can be used individually or combined to supply water for the system. Learn more about local reservoirs and waterways at <https://watersgeo.epa.gov/mywaterway>.

The West Virginia Department of Health and Human Resources (DHHR) completed a source water assessment of these reservoirs in April 2003 to meet Federal requirements of the Safe Drinking Water Act. The study looked at the drainage area and ranked its vulnerability to contamination. DHHR ranked the susceptibility medium because the reservoirs are surface water bodies exposed above the ground. To get a copy of the assessment, contact DHHR at (304) 356-4298 or visit:

<https://www.wvdhhr.org/oehs/eed/swap>.

Protecting Your Drinking Water Supply

Protecting drinking water at its source is an important part of providing high quality water. It takes a community effort to protect our shared resources. This includes utilities, businesses, residents, government agencies and community organizations.

Everyone who lives, works, and plays in the area has a role and stake in clean water supplies.

What Can You Do? Quality drinking water starts upstream.

Everyone can help maintain and improve drinking water supplies through the following actions:

- Dispose of pharmaceuticals, household chemicals, oils and paints at proper waste collection sites. Materials can impact waterways if poured down the drain, flushed down the toilet, or dumped on the ground.
- Clean up after your pets and limit the use of fertilizers and pesticides.
- Inspect your septic system and have it serviced – usually every 3 to 5 years.
- Look for local opportunities to take part in watershed activities.
- Report any spills, illegal dumping or suspicious activity to DEP at 1-800-642-3074.

What Are We Doing? Our vision is *Clean Water for Life*. Our priority is to provide reliable, quality drinking water for our customers, and our sources of supply are an important part of that mission. We work to understand and reduce potential risks to your drinking water supply. We have developed a Source Water Protection Plan under state requirements. The plan includes an updated assessment and actions to address potential threats. Our strategies include proactive outreach, contaminant data, monitoring, emergency preparedness, and policy input. A copy of the plan is available online at www.westvirginiaamwater.com under Water Quality & Stewardship > Source Water Protection menu. We welcome input anytime through our online feedback [form](#).

Here are a few activity highlights from 2018:

- **Clean Streams:** We hosted a collection event to dispose of hazardous household materials. This helps reduce pollution by keeping these materials out of waterways. A total of 284 cars participated. We collected and disposed of more than 20,000 pounds of hazardous material. A DHHR grant and partnership with the City of Charleston and Habitat for Humanity ReStore helped make this event a success. For more information on local hazardous waste disposal locations, visit CleanStreamsWV.com.
- **Emergency Preparedness:** We led a practice exercise for a spill into the water supply. Various health, environmental, and emergency management representatives participated in the exercise.
- We improved communication and preparedness and built stronger relationships with community partners.



- **Outreach and Education:** We conducted tours, school visits, and programs to educate the community about water supplies and treatment. For more information on community involvement, visit <https://amwater.com/wvaw/news-community/community-involvement>.

What's Next? We are updating our Source Water Protection Plans in 2019 and would like to hear about what is important to you. Stay tuned for more information on how to provide input and get involved.

How Is My Water Treated And Purified?

In 2018, roughly 490 million gallons of water was treated and distributed to customers for residential, commercial, and industrial use. Current treatment processes at WVAW's Ada Treatment Plant 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.

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. In compliance with this rule, WVAW's Bluefield Treatment Plant monitored for Cryptosporidium in its raw water in 2005-2007. A second 2-year study began in September 2016. Cryptosporidium was detected in 2 of the 12 source water samples tested. Based on the results of our Cryptosporidium monitoring, no additional treatment will be required under the new US EPA regulation.

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.

Special Monitoring

In addition to the regulated contaminants normally monitored by our facility, in 2013 the Bluefield system also sampled for a series of unregulated contaminants in accordance with the Unregulated Contaminant Monitoring Rule (UCMR3). 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. Results of this monitoring are found in the unregulated contaminate section of the Water Quality Data Chart.

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. EPA currently regulates chromium-6 as part of the total chromium drinking water standard. New health effects information has become available since the original standard was set, and EPA is reviewing this information to determine whether there are new health risks that need to be addressed. While this review is underway, the EPA suggested that systems begin voluntary monitoring for chromium-6. Additional information can be found at <http://water.epa.gov/drink/info/chromium/index.cfm>. We began voluntary monitoring in your system in 2011. There were no detects of chromium-6 in the Bluefield system in 2018.

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 stormwater 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 stormwater 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 stormwater 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.

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

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.

Water Quality Statement

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 7,100 dedicated professionals who provide regulated and market-based drinking water, wastewater and other related services to more than 13

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](#).

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



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

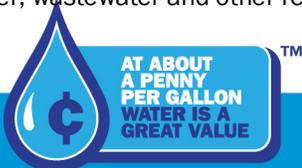
When you turn on the tap, it's easy to see what your water bill buys. What's not as easy to see is what it takes to bring that water to your home. The miles of pipeline hidden below the ground. The facilities that draw water from the source. The plant where it's treated and tested. The scientists, engineers, 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.

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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 2018. 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 following table definitions and abbreviations.



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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.
- **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.

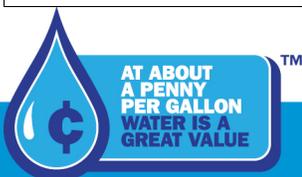
The state requires a water utility to monitor for certain substances less than once per year because the concentrations of these substances do not change frequently. In these cases, the most recent sample data are included, along with the year in which the sample was taken.

Regulated Substances

Substance (units)	Year Sampled	MCL	MCLG	Amount Detected	Range Low-High	Compliance Achieved	Typical Source
Alpha emitters (pCi/L)	2011	15	0	1.4	NA	Yes	Radioactive decay of natural deposits
Chlorine (ppm)	2018	MRDL=4	MRDLG=4	1.3	0.2 – 1.9	Yes	Water additive used to control microbes.
Combined radium (pCi/L)	2011	5	0	0.8	NA	Yes	Radioactive decay of natural deposits
Fluoride (ppm)	2018	4	4	0.69	0.45 – 0.91	Yes	Water additive which promotes strong teeth
Haloacetic Acids (HAA5s) (ppb) ¹	2018	60	0	17	8 - 27	Yes	By-product of drinking water chlorination
Nitrate (ppm)	2018	10	10	0.51	NA	Yes	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits
Total Trihalomethanes (TTHMs)(ppb) ²	2018	80	0	35	13 - 70	Yes	By-product of drinking water chlorination
Total Organic Carbon (Removal Ratio) ³	2018	TT	NA	1.11	1.0 – 1.22	Yes	Naturally occurring in the environment
Turbidity (NTU) ⁴	2018	TT	NA	0.28	0.02 – 0.28	Yes	Soil runoff

Unregulated Substances (Measured on the Water Leaving the Treatment Facility)

Substance (units)	Year Sampled	Secondary MCL	Average Results	Range Low-High	Typical Source
Aluminum (ppm)	2018	0.05	0.02	NA	Mineral that occurs naturally in the soil, constituent of coagulant used in treatment
Calcium (ppm)	2018	NA	29	NA	Mineral that occurs naturally in the soil
Chloride (ppm)	2018	250	31	NA	Mineral that occurs naturally in the soil, road salt, and water softeners
Chromium (VI) (ppb) ⁵	2013	NA	0.05	0.0 – 0.11	Discharge from steel and pulp mills; erosion of natural deposits
Magnesium	2018	NA	6	NA	Mineral that occurs naturally in the soil
Sodium (ppm)	2018	NA	13	NA	Element that occurs naturally in water and soil; road salt; water softeners
Strontium (ppm)	2018	NA	<0.1	NA	Mineral that occurs naturally in the soil
Sulfate (ppm)	2018	250	8	NA	Mineral that occurs naturally in the soil
Zinc (ppm)	2018	5	0.07	0.02 – 0.93	Element that occurs naturally in the water; constituent of corrosion control additive



Tap Water Samples: Lead and Copper Results

Substance (units)	Year Sampled	Action Level	MCLG	Amount Detected 90 th Percentile	Number of Samples	Homes Above Action Level	Compliance Achieved	Typical Source
Copper (ppm)	2018	1.3	1.3	0.35	30	0	Yes	Corrosion of household plumbing
Lead (ppb)	2018	15	0	2	30	0	Yes	Corrosion of household plumbing

1 Based on a yearly running average.

2 Based on a yearly running average. 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.

3 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.

4 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 system. During the reporting year, a minimum of 100% of all samples taken to measure turbidity met the treatment technique requirements.

5 The current federal drinking water standard for total chromium is 100 parts per billion (ppb) and includes all forms of chromium (e.g., chromium-3 and chromium-6). Chromium-6 is not currently regulated as an individual compound.

Bacterial Results (from the Distribution System)

Substance (units)	Year Sampled	MCL	MCLG	Highest Percentage Detected	Compliance Achieved	Typical Source
Total coliform (% Positive samples)	2018	5 % Positive samples	0	0	Yes	Bacteria naturally present in the environment

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 2018. 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)	2018	112	90 – 130
Hardness, Total (ppm)	2018	111	85 – 140
pH (standard units)	2018	7.1	6.45 – 7.71

