



2015 Annual Water Quality Report

Bluestone District

PWS ID: WV3304513



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/bluestone.pdf

Furthermore, West Virginia American Water invests \$40-50 million each year to replace and upgrade water infrastructure so that you have clean, reliable, affordable water service for your everyday life, for a lifetime. In 2015, we completed the following large infrastructure investment projects:

- Upper Kanawha Valley Pipeline Replacement/Reinforcement – \$6.7 million
- Large Main Replacement Projects – \$6.1 million
- Huntington Sand Removal System – \$3 million
- Weston Plant Automation – \$1.8 million
- Water Storage Tank Rehabilitation – \$1.2 million

It is no simple task to move water from rivers and reservoirs through the water treatment process to our distribution lines and tanks, and, finally your home, school or place of work. It requires having the right team of experts and technologies in place, and our scientists, chemists, engineers, operators and maintenance crews are always on the job. Because we invest our dollars responsibly, we provide our water at just over a penny per gallon – an exceptional value for a service that is so essential to our daily lives.

At West Virginia American Water, our customers are at the center of everything we do, and we are committed to providing you with the highest quality drinking water and service possible now and in the years to come. We are proud to be your local water service provider.

Sincerely,

Jeffrey L. McIntyre

President, West Virginia American Water

A Message from the West Virginia American Water President

To Our Valued Customer:

Every day across West Virginia, faucets, showers, dishwashers, washing machines and garden hoses are used with little worry about the water's safety, availability, or how it got there in the first place. The fact is, West Virginia American Water's water quality and operations professionals work hard day and night to deliver safe, clean, reliable water service to our customers.



We perform thousands of tests each year to comply with drinking water standards for about 100 regulated substances. All of our eight treatment plants participate in the Partnership for Safe Water Program and seven have been granted Directors Awards for exceptional plant optimization and performance. Less than one percent of all U.S. water utilities – and no other West Virginia water utilities – have achieved this honor. That means our water quality isn't just good - it's exceptional.

Each year, we provide you with our annual water quality report. Like so many years prior, you will find that we continue to supply water that meets or surpasses all state and federal water quality regulations. Our regulatory compliance record is a testament to our commitment to water quality and environmental stewardship. In 2015, West Virginia American Water systems performed 25 times better than the average community water system in West Virginia.



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

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. 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, 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 50 to 74 ppm, or 3 to 4 grains per gallon of water.

How much sodium is in my water?

The sodium level is approximately 5.4 ppm (or mg/L).

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

Water in the distribution system averages 7.0 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 0.76 ppm to assist in the prevention of dental cavities.

Where Does My Water Come From?

West Virginia American Water and its customers in the Bluestone system are fortunate because we enjoy an abundant water supply from the Bluestone Reservoir (an impoundment of the New River) which is a surface water source. The current treatment plant provided roughly 864 million gallons of clean drinking water in 2015. To learn more about our watershed on the internet, go to the U.S. EPA's Search Your Watershed at www.epa.gov/owow/.

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.

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 2012, received the prestigious "10 Year Director's Award", presented by the administrator of the US Environmental Protection Agency.



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 Bluestone 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 Bluestone 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.

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.

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 Bluestone Treatment Plant monitored for *Cryptosporidium* in its raw water in 2005-2007. Based on the results of our *Cryptosporidium* monitoring, no additional treatment will be required under the new US EPA regulation.



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.

Special Monitoring

In addition to the regulated contaminants normally monitored by our facility, in 2013 the Bluestone 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. None of these contaminants were found in the

Bluestone water system in 2014. Specific UCMR₃ results are available at West Virginia American Water, 1087 Edwards Road, Hinton, WV 25951 or may be requested 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. 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. Detects of this element are listed in the data tables.

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 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.

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 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 577,000 people.

American Water is the largest and most geographically diverse publicly traded U.S. water and wastewater utility company. Marking its 130th anniversary this year, the company employs 6,700 dedicated professionals who provide regulated and market-based drinking water, wastewater and other related services to an estimated 15 million people in 47 states and Ontario, Canada. More information can be found by visiting www.amwater.com.

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

How to Read the Data Tables

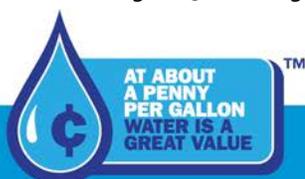
For your information, we have compiled a list in the adjacent table showing what substances were detected in our drinking water during 2015. Although all of the substances listed are

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.

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 (Measured on the Water Leaving the Treatment Facility)

| Substance (units) | Year Sampled | MCL | MCLG | Amount Detected | Range Low-High | Compliance Achieved | Typical Source |
|----------------------------------------|--------------|--------|---------|-----------------|----------------|---------------------|---------------------------------------------------------------------------------------------|
| Alpha emitters (pCi/L) | 2011 | 15 | 0 | 2.0 | NA | Yes | Radioactive decay of natural deposits |
| Chlorine (ppm) | 2015 | MRDL=4 | MRDLG=4 | 1.6 | 0.7 – 2.4 | Yes | Water additive used to control microbes. |
| Combined radium (pCi/L) | 2011 | 5 | 0 | 0.0 | NA | Yes | Radioactive decay of natural deposits |
| Fluoride (ppm) | 2015 | 4 | 4 | 0.76 | 0.50 – 1.43 | Yes | Water additive which promotes strong teeth |
| Haloacetic Acids (HAA5s) (ppb) 1 | 2015 | 60 | 0 | 34 | 25 - 38 | Yes | By-product of drinking water chlorination |
| Nitrate (ppm) | 2015 | 10 | 10 | 0.6 | NA | Yes | Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits |
| Total Trihalomethanes (TTHMs)(ppb) 2 | 2015 | 80 | 0 | 44 | 11 - 74 | Yes | By-product of drinking water chlorination |
| Total Organic Carbon (Removal Ratio) 3 | 2015 | TT | NA | 1.70 | 1.20 – 2.68 | Yes | Naturally decaying vegetation |
| Turbidity (NTU)4 | 2015 | TT | NA | 0.11 | 0.02–0.11 | Yes | Soil runoff |

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 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.

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) | 2015 | 0.2 | 0.02 | NA | Mineral that occurs naturally in the soil, constituent of coagulant used in treatment |
| Calcium (ppm) | 2015 | NA | 28 | NA | Mineral that occurs naturally in the soil |
| Chloride (ppm) | 2015 | 250 | 17.2 | NA | Mineral that occurs naturally in the soil, road salt, and water softeners |
| Magnesium (PPM) | 2015 | NA | 8 | NA | Mineral that occurs naturally in the soil |
| Sodium (ppm) | 2015 | NA | 5.4 | NA | Element that occurs naturally in water and soil; road salt; water softeners |
| Sulfate (ppm) | 2015 | 250 | 11.8 | NA | Mineral that occurs naturally in the soil |
| Zinc (ppm) | 2015 | 5 | 0.10 | 0.06 – 0.17 | Element that occurs naturally in the water; constituent of corrosion control additive |

Unregulated Substances (Measured on the Water Leaving the Treatment Facility and in the Distribution System) UCMR3

| Substance (units) | Year Sampled | MCL/MCLG | SAMPLE LOCATION | Average Results | Range Low—High | Typical Source |
|-------------------------------------------|--------------|---------------|---------------------|-----------------|----------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Strontium(ppb) | 2014 | Not Regulated | Treatment Facility | 84 | NA | Naturally-occurring element ; historically, commercial use of strontium has been in the faceplate glass of cathode-ray tube televisions to block x-ray emissions. |
| | | | Distribution System | 94 | 73.7 – 76.1 | |
| Chromium-6 or Hexavalent Chromium (ppb) 5 | 2014 | Not Regulated | Treatment Facility | 0.06 | 0.06 – 0.07 | Naturally-occurring element; used in making steel and other alloys; chromium-3 or -6 forms are used for chrome plating, dyes and pigments, leather tanning and wood preservation |
| | | | Distribution System | 0.61 | 0.25 – 1.07 | |
| Vanadium (ppb) | 2014 | Not Regulated | Treatment Facility | 0.3 | 0.2 - .06 | Synthetic industrial chemical that is completely miscible in water |
| | | | Distribution System | 0.4 | 0.3 - 0.9 | |

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 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) | 2015 | 5 % Positive samples | 0 | 3.13% | Yes | Bacteria naturally present in the environment |

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) | 2015 | 1.3 | 1.3 | 0.13 | 30 | 0 | Yes | Corrosion of household plumbing |
| Lead (ppb) | 2015 | 15 | 0 | 2 | 30 | 2 | Yes | Corrosion of household plumbing |

Additional Constituents

| Substance (Units) | Year Sampled | Average Amount Detected | Range Low-High |
|-------------------------|--------------|-------------------------|----------------|
| Alkalinity, Total (ppm) | 2015 | 50 | 40 - 82 |
| Hardness, Total (ppm) | 2015 | 59 | 50 - 74 |
| pH (standard units) | 2015 | 7.0 | 6.4 - 8.2 |

