



2014 Annual

Water Quality Report

Bluestone District
PWS ID: WV3304315



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

A Message from the West Virginia American Water President

To Our Valued Customer:

West Virginia American Water is proud to be your local water service provider, and I am pleased to share with you good news about the quality of your drinking water. 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.



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. Delivering high-quality, reliable water service to your tap around the clock also requires significant investment in our water infrastructure. In 2014 alone, we invested more than \$36.5 million in water system improvements statewide. From upgrading our treatment facilities to replacing more than 18 miles of aging water pipelines, we invested prudently and with purpose. We also invested in new laboratory equipment and online, multi-panel source water quality monitoring devices for early detection of source water contamination to comply with new state requirements. Because we invest our dollars responsibly, we provide our water at about a penny per gallon – an exceptional value for a service that is so essential to our daily lives.

Our regulatory compliance record is a testament to our commitment to water quality and environmental stewardship. In 2014, there were more than 4,000 health-

based or monitoring/reporting drinking water Notices of Violation (NOVs) issued to community drinking water systems in West Virginia. We are extremely proud that West Virginia American Water once again did not receive any drinking water NOVs over the course of the year. Furthermore, just over 400 surface water treatment plants nationally are part of USEPA's Partnership for Safe Water Program, which is a voluntary effort designed to increase protection against microbial contamination through treatment optimization. All nine West Virginia American Water surface water treatment plants participate in this program and are the only plants in West Virginia to receive the program's nationally recognized Director's Awards.

We hope you agree that high quality, reliable water service is worth every penny and worth learning more about. Please take the time to review this report. It provides details about the source and quality of your drinking water using the data from water quality testing conducted for your local water system from January through December 2014. For an electronic copy of this report, visit us online at www.westvirginiaamwater.com and click "Water Quality Reports" under the Water Quality & Stewardship tab.

At West Virginia American Water, our customers are our top priority, and we are committed to providing you with the highest quality drinking water and service possible now and in the years to come.

Sincerely,

Jeffrey L. McIntyre
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?

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 56 to 68 ppm, or 3 to 4 grains per gallon of water.

How much sodium is in my water?

The sodium level is approximately 7.4 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 0.7 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 867 million gallons of clean drinking water in 2014. 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 the Phase II self-assessment and, in 2012, received the prestigious "10 Year Director's Award", presented by the administrator of the US Environmental



Protection Agency. The Partnership goals have been maintained each year since the award was granted.

Source Water Protection Plan

The Source Water Assessment Program (SWAP) is a result of the 1996 amendments to the Federal Safe Drinking Water Act (SDWA). Those amendments require all states to establish a program to assess the vulnerability of public water systems to potential contamination.

In conjunction with the WVDHHR Source Water Technical Help Program, a Source Water Protection Plan was developed for the Bluestone System in 2010. The Source Water Protection Plan provides water system information, source water protection area delineations, potential contaminant source inventories, a prioritized list of threats accompanied by management strategies to address them, recommended public education and outreach activities, contingency plans for short and long term water shortages or emergency incidents, and documentation of previous and ongoing source water protection efforts. The Bluestone plan has been reviewed and approved by the WVDHHR Source Water Assessment and Protection Program.

In addition, in 2014 the State of West Virginia adopted legislation requiring updates to source water assessment and protection programs. In order to develop protection plans consistent with the new regulations, West Virginia American Water initiated a number of source water assessment and protection efforts in 2014:

- Partnered with Corona Environmental Consulting and the Water Research Foundation on a project to develop an advanced, dynamic, automated tool and contaminant information database that will update information on potential contaminant sources within the system's zone of critical concern on a weekly basis
- Conducted a thorough analysis of available early detection technology and is installing monitoring equipment of this type as its baseline level system at a cost of approximately \$30,000 per facility
- Constructed a new \$400,000 laboratory at the Kanawha Valley water treatment plant and installed two gas chromatograph/mass spectrometers, which are high-tech devices that test for volatile organic compounds and semi-volatile organic compounds which can be used to analyze samples from any of WVAW's treatment facilities
- Commissioned a detailed engineering study to evaluate options for alternate sources of supply, second intakes, reservoirs and interconnections with other water systems.



Community involvement in this Source Water Protection Program is vital to its success. For additional information or to participate in this program please contact our Water Quality Manager at (800) 685-8660 or the West Virginia Bureau for Public Health at (304) 558-2981.

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

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 2014 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. Detections of these compounds are listed in the data tables. Specific UCMR3 results are available at West Virginia American Water, 227 Edwards Road, True,



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.

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 2014. 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.

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 560,000 people.

Founded in 1886, American Water is the largest publicly traded U.S. water and wastewater utility company. With

headquarters in Voorhees, N.J., the company employs approximately 6,400 dedicated professionals who provide drinking water, wastewater and other related services to an estimated 15 million people in more than 45 states and parts of 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.



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.

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

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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.

Water Quality Results

Regulated Substances (Measured on Water Leaving the Treatment Plant Unless Otherwise Noted)

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)	2014	MRDL=4	MRDLG=4	1.6	0.5 - 2.7	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)	2014	4	4	0.68	0.18 - 0.98	Yes	Water additive which promotes strong teeth
Haloacetic Acids (HAA5s) (ppb) ¹	2014	60	0	34	13 - 54	Yes	By-product of drinking water chlorination
Nitrate (ppm)	2014	10	10	0.91	NA	Yes	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits
Total Trihalomethanes (TTHMs)(ppb) ²	2014	80	0	68	22 - 121	Yes	By-product of drinking water chlorination
Total Organic Carbon (Removal Ratio) ³	2014	TT	NA	1.03	1.00 - 1.08	Yes	Naturally decaying vegetation
Turbidity (NTU) ⁴	2014	TT	NA	0.06	0.02- 0.06	Yes	Soil runoff



Bacterial Results (from the Distribution System)

Substance (units)	Year Sampled	MCL	MCLG	Highest Percentage Detected	Compliance Achieved	Typical Source
Total coliform (% Positive samples)	2014	5 % Positive samples	0	0	Yes	Bacteria naturally present in the environment

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

Substance (units)	Year Sampled	Secondary MCL	Average Results	Range Low-High	Typical Source
Chloride (ppm)	2014	250	17.2	NA	Mineral that occurs naturally in the soil, road salt, and water softeners
Sodium (ppm)	2014	NA	7.4	NA	Element that occurs naturally in water and soil; road salt; water softeners
Sulfate (ppm)	2014	250	12.0	NA	Mineral that occurs naturally in the soil
Zinc (ppm)	2014	5	0.10	0.06 – 0.18	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	

¹ Based on a yearly running average from samples taken in the distribution system. Amount detected is part of a disinfection byproduct rule which is being phased out in 2014. Values in the range also include samples analyzed under a new rule which was introduced in 2014..

² Based on a yearly running average from samples taken in the distribution system. Amount detected is part of a disinfection byproduct rule which is being phased out in 2014. Values in the range also include samples analyzed under a new rule which was introduced in 2014. 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.



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)	2012	1.3	1.3	0.2	30	0	Yes	Corrosion of household plumbing
Lead (ppb)	2012	15	0	3	30	0	Yes	Corrosion of household plumbing

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 2014. 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)	2014	44	38 – 64
Hardness, Total (ppm)	2014	61	46 - 68
pH (standard units)	2014	7.0	6.9 – 7.2

