

Annual Drinking Water Quality Report 2017

BERKELEY COUNTY PUBLIC SERVICE WATER DISTRICT

251 Caperton Boulevard

Martinsburg, WV 25403

www.berkeleywater.org

PWS# WV3300202 – Bunker Hill

PWS# WV3300209 – Glenwood Forest

PWS# WV330218 – Potomac River

February 22, 2018

Once again BCPSWD is pleased to present you with this year's Annual Drinking Water Quality Report. This report was completed in February 2018 and contains all contaminants that were detected in 2017 and it is designed to inform you about the quality water and services we deliver to you every day. Our constant goal is to provide you with a dependable supply of drinking water. We continue to strive for excellence by improving the water treatment process and protecting our water resources. We are committed to ensuring the quality of your drinking water.

The mission statement of the District is "To provide Berkeley County with potable, high quality water as economically and effectively as possible."

Why am I receiving this report?

In compliance with the Safe Drinking Water Act Amendments, the Berkeley County Public Service Water District is providing its customers with this annual water quality report. This report explains where your water comes from, what it contains, and how it compares to standards set by regulatory agencies. The information in this report shows the results of our monitoring for the period of January 1st to December 31st, 2017 or earlier if not on a yearly schedule.

If you have any questions concerning this report, you may contact **Steve De Ridder, 304-267-4600**. If you have any further questions, comments or suggestions, please attend any of our regularly scheduled water board meetings held on the **2nd and 4th Monday** of every month **at 5:00 PM in the Boardroom, 251 Caperton Blvd, Martinsburg, WV**.

Where does my water come from?

Potomac River - Your drinking water which uses **surface** water from the Potomac River. We also use a **ground** water backup source known as Ben Speck Spring.

Bunker Hill - Bunker Hill drinking water is **ground** water from the LeFevre Spring and a **surface** water backup source known as Baker Lakes.

Glenwood Forest – Glenwood Forest drinking water is **ground** water from six wells located throughout the Glenwood Forest subdivision.

Springdale – Springdale drinking water is **ground** water from a well.

BCPSWD also has an interconnection with the City of Martinsburg. This interconnection supplies water to our customers at Fairfield, Porterfield's Addition, Ridgefield, Welltown School Road, and Stribling Road. The interconnection also supplies water to our customers at northern Pikeside, Paynes Ford Road and part of Route 9.

Source Water Assessment

The Potomac intake that supplies drinking water to the **Potomac River WTP** has a higher susceptibility to contamination, due to the sensitive nature of surface water supplies and the potential contaminant sources identified within the area. This does not mean that the water source will become contaminated only that conditions are such that the surface water could be impacted by a potential contaminant source. Future contamination may be avoided by implementing protective measures. The source water assessment report, which contains more information, is available for review or a copy will be provided to you by calling the WV Bureau for Public Health 304-558-2981.

The springs that supply drinking water to the Berkeley County Public Service Water District Bunker Hill WTP have a higher susceptibility to contamination, due to the sensitive nature of the aquifer in which the drinking water springs are located and the existing potential contaminant sources identified within the area. This does not mean that the well field will become contaminated; only that conditions are such that the ground water could be impacted by a potential contaminant source. Future contamination may be avoided by implementing protective measures. The source water assessment report, which contains more information, is available for review or a copy will be provided to you at our office during business hours or from the WVBPH 304-558-2981.

Why must water be treated?

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

All drinking water contains various amounts and kinds of contaminants. Federal and state regulations establish limits, controls, and treatment practices to minimize these contaminants and to reduce any subsequent health effects.

Contaminants in Water

In order to ensure that tap water is safe to drink, EPA prescribes regulations which limit the amount of certain contaminants in water provided by public water systems. FDA regulations establish limits of contaminants in bottled water, which must provide the same protection for public health.

Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of these contaminants does not necessarily indicate that water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the Environmental Protection Agency's Safe Drinking Water Hotline (800-426-4791).

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

Inorganic contaminants, such as salts and metals, which can be naturally-occurring, or result from urban storm water runoff, industrial or domestic wastewater discharges, oil and gas production, mining, 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 can also come from gas stations, urban storm water runoff, and septic systems.

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

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

Water Quality Data Table

Definitions of terms and abbreviations used in the table or report:

- **MCLG - Maximum Contaminant Level Goal**, or 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.
- **MCL - Maximum Contaminant Level**, or 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 technique.
- **MRDLG - Maximum Residual Disinfectant Level Goal**, or the level of drinking water disinfectant below which there is no known or expected risk to health. MRDLGs do not reflect benefits of use of disinfectants to control microbial contaminants.
- **MRDL - Maximum Residual Disinfectant Level**, or the highest level of disinfectant allowed in drinking water. There is convincing evidence that addition of disinfectant is necessary to control microbial contaminants.
- **AL - Action Level**, or the concentration of a contaminant which, when exceeded, triggers treatment or other requirements which a water system must follow.
- **TT –Treatment Technique**, or a required process intended to reduce the level of a contaminant in drinking water

Abbreviations that may be found in the table:

- **ppm** - parts per million or milligrams per liter
- **ppb** - parts per billion or micrograms per liter
- **NE** - not established
- **NTU** –Nephelometric Turbidity Unit, used to measure cloudiness in water

MCLs are set at very stringent levels. To better understand the possible health effects described for many contaminants a person would have to drink two liters of water everyday at the MCL level for a lifetime to have one in a million chance of having a described health effect.

Berkeley County Public Service Water District and the City of Martinsburg system routinely monitor for contaminants in your drinking water according to federal and state laws. The tables below show the results of our monitoring for contaminants.

Table of Test Results - Regulated Contaminants – Berkeley County Public Service Water District

Contaminant	Violation Y/N	Level Detected	Unit of Measure	MCLG	MCL	Likely Source of Contamination
Microbiological Contaminants						
Turbidity Bunker Hill Potomac	N	0.05 0.02 100% of monthly samples <0.3	NTU	0	TT	Soil runoff
Total organic carbon Potomac	N	2.0 Annual avg. Range 0.62-3.38	ppm	NA	TT	Naturally present in the environment
Inorganic Contaminants						
Barium Bunker Hill Potomac	N	0.061 0.038	ppm	2	2	Discharge from drilling waste; erosion of natural deposits
Fluoride Potomac	N	0.19	ppm	4	4	Erosion of natural deposits; water additive that promotes strong teeth; discharge from fertilizer and aluminum plants
Nitrate Bunker Hill Glenwood Forest Well#2 Well#5 Well#6 Potomac	N	1.87 0.50 0.800 0.69 1.4	ppm	10	10	Runoff from fertilizer use; leakage from septic tanks, sewage; erosion of natural deposits
Chromium Bunker Hill Potomac	N	4.0 1.4	ppb	100	100	Discharge from steel and pulp mills; Erosion of natural deposits
Lead * Potomac	N	3.5	ppm	15	AL=15	Corrosion of household plumbing systems; Erosion of natural deposits
Copper* Potomac	N	0.086	ppm	1.3	AL=1.3	Corrosion of household plumbing systems; Erosion of natural deposits
Volatile Organic Contaminants						

Chlorine	N	Annual avg. 1.05 1.36 1.77 Range 0.8-1.2 0.96-1.48 1.4-2.0	ppm	4 MRDLG	4 MRDL	Water additive used to control microbes
Bunker Hill Glenwood Forest Potomac						
Bunker Hill Glenwood Forest Potomac						
Haloacetic acids (HAAC5s)		Annual avg. 2.7 3.1 Range 0-3.3 0-4.2	ppb	NA	60	Byproduct of drinking water disinfection
Bunker Hill Stage 2 monitoring Gerrard Acres Stonehedge						
Gerrard Acres Stonehedge						
Total trihalomethanes (TTHMs)	N	Annual avg. 2.6 2.5 Range 0-4.5 0-6.3	ppb	NA	80	By-product of drinking water chlorination
Bunker Hill Stage 2 monitoring Gerrard Acres Stonehedge						
Gerrard Acres Stonehedge						
Haloacetic acids (HAAC5s)	N	Annual avg. 30.6 35.7 20.3 126.9 Range 17.5-45.8 22.5-53 13.9-26.7 15.9-39.8	ppb	NA	60	Byproduct of drinking water disinfection
Potomac Stage 2 monitoring Berkeley Plaza Camp Frame Shell Station Brookfield						
Berkeley Plaza Camp Frame Shell Station Brookfield						

Total trihalomethanes (TTHMs) Potomac Stage 2 monitoring Berkeley Plaza Camp Frame Shell Station Brookfield	N	Annual avg. 43 49.4 24.5 34.3	ppb	NA	80	By-product of drinking water chlorination
Berkeley Plaza Camp Frame Shell Station Brookfield		Range 22.3-63.2 22.8-73.7 11.0-34.2 15.9-59.0				

*Copper and lead samples were collected from 1 area resident on 8-1-7. None of the samples exceeded the MCL.

Some people who drink water containing haloacetic acids in excess of the MCL over many years may have an increased risk of getting cancer.

Some people who drink water containing trihalomethanes in excess of the MCL over many years may experience problems with their liver, kidneys, or nervous system, and may have an increased risk of getting cancer.

Table of Test Results - Unregulated Contaminants

Contaminant	Violation Y/N	Level Detected	Unit of Measure	MCLG	MCL	Likely Source of Contamination
Nickel Bunker Hill Potomac	N	7.9 3.6	ppb	100	100	Erosion of natural deposits
Sodium Bunker Hill Potomac	N	13.7 9.59	ppm	NE	20	Erosion of natural deposits

Inner Connection - the City of Martinsburg

Table of Test Results - Regulated Contaminants – City of Martinsburg

Contaminant	Violation Y/N	Level Detected	Unit of Measure	MCLG	MCL	Likely Source of Contamination
Microbiological Contaminants						
Turbidity	N	0.22 100% of Monthly samples <0.3	NTU	0	TT	Soil runoff
Inorganic Contaminants						

Barium	N	0.0780	ppm	2	2	Discharge from drilling wastes; discharge from metal refineries; erosion of natural deposits
Chromium	N	4.2	ppb	100	100	Discharge from steel and pulp mills; erosion of natural deposits
Fluoride	N	0.97	ppm	4	4	Erosion of natural deposits: Water additive that promotes strong teeth
Nitrate	N	4.26	ppm	10	10	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits
Volatile Organic Contaminants						
Chlorine	N	1.1 Annual avg. Range 0.7-1.3	ppm	4 MRDL G	4 MRDL	Water additive used to control microbes
Haloacetic acids (HAAC5) (Site 1)	N	2.2 Annual avg. Range 1.4-3.4	ppb	NA	60	By-product of drinking water disinfection
Total trihalomethanes (TTHMs) (Site 1)	N	3.8 Annual avg. Range 2.4-5.0	ppb	NA	80	By-product of drinking water chlorination
Haloacetic acids (HAAC5) (Site 2)	N	1.7 Annual avg. Range 0-4.1	ppb	NA	60	By-product of drinking water disinfection
Total trihalomethanes (TTHMs) (Site 2)	N	7.5 Annual avg. Range 0-17.1	ppb	NA	80	By-product of drinking water chlorination

Table of Test Results - Unregulated Contaminants – City of Martinsburg

Contaminant	Violation Y/N	Level Detected	Unit of Measure	MCLG	MCL	Likely Source of Contamination
Nickel	N	6.8	ppb	100	100	Erosion of natural deposits
Sodium*	N	23.6	ppm	0	20	Erosion of natural deposits
Sulfate	N	28.5	ppm	250	250	Erosion of natural deposits

*Sodium is an unregulated contaminant. Our sodium level exceeds the guidance MCL. Anyone having a concern over sodium should

contact their primary health care provider.

For the reporting year 2017 we received “Notice of Violation” letters from the WV Bureau for Public Health for failing to monitor, complete on time or the taking of samples for cryptosporidium and/or e.coli results (10/1-10/30-17 - **Bunker Hill**). We have made every effort and taken every precaution to return to compliance.

Cryptosporidium. A microorganism commonly found in lakes and rivers which is highly resistant to disinfection. Cryptosporidium has caused several large outbreaks of gastrointestinal illness, with symptoms that include diarrhea, nausea, and/or stomach cramps. People with severely weakened immune systems (that is, severely immuno-compromised) are likely to have more severe and more persistent symptoms than healthy individuals. At this time, cryptosporidium is an unregulated contaminant and is required to be tested under the *long-term-2-enhanced-surface-water-treatment-rule*.

Coliforms are bacteria that are natural present in the environment and are used as an indicator that other, potentially harmful, bacteria may be present.

For the reporting year 2017 we received “Notice of Violation” letters from the WV Bureau for Public Health for failing to monitor, complete on time or the taking of samples for chorine and turbidity results (6/1-6/30-17 - **Potomac**). We have made every effort and taken every precaution to return to compliance.

Chlorine can be solid, liquid, or a gas additive used for the control microbes in drinking water. Drinking water that has not been treated with chorine or some other form of disinfectant or process may or may not contain harmful bacteria. Untreated drinking water may cause gastrointestinal distress or other health problems.

Turbidity has no health effects. However, turbidity can interfere with disinfection and provide a medium for microbial growth. Turbidity may indicate the presence of disease-causing organisms. These organisms include bacteria, viruses, and parasites that can cause symptoms such as nausea, cramps, diarrhea and associated headaches.

WE ARE PLEASED TO REPORT THAT THE BERKELEY COUNTY PUBLIC SERVICE WATER DISTRICT (GLENWOOD) MET ALL FEDERAL AND STATE WATER STANDARDS FOR THE REPORTING YEAR 2017.

Additional Information

All other water test results for the reporting year 2017 were all non-detects.

Turbidity is a measure of the cloudiness in water. We monitor it because it is a good indicator of the effectiveness of our filters.

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. The Berkeley County Public Service Water District 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 drinking 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>.

