

# Annual Drinking Water Quality Report

## Clear Creek

### INTRODUCTION

This Annual Drinking Water Quality Report for calendar year 2019 is designed to inform you about your drinking water quality. Our goal is to provide you with a safe and dependable supply of drinking water, and we want you to understand the efforts we make to protect your water supply. The quality of your drinking water must meet state and federal requirements administered by the Virginia Department of Health (VDH).

If you have question about this report please contact: Philip King, 276-669-4112, pking@bvua.com

If you want additional information about any aspect of your drinking water or want to know how to participate in decisions that may affect the quality of your drinking water, please contact: Philip King, 276-669-4112, pking@bvua.com

The times and location of regularly scheduled board meetings are as follows: 4th Friday of each month, 12:00 p.m., 15022 Lee Highway, Bristol, Virginia 24202

### GENERAL INFORMATION

Drinking water (both tap water and bottled water) can come from many sources including 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 can pick up substances resulting from the presence of animals or from human activity. Contaminants that may be present in source water include: (i) microbial contaminants, such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife; (ii) inorganic contaminants, such as salts and metals, which can be naturally occurring or result from urban stormwater runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming; (iii) pesticides and herbicides, which may come from a variety of sources such as agriculture, urban stormwater runoff, and residential uses; (iv) organic chemical contaminants, including synthetic and volatile organic chemicals, which are byproducts of industrial processes and petroleum production, and can also come from gas stations, urban stormwater runoff, and septic systems; (v) radioactive contaminants, which can be naturally occurring or be the result of oil and gas production and mining activities. Water from surface sources is treated to make it drinkable while groundwater may or may not have any treatment. In order to ensure that tap water is safe to drink, the Environmental Protection Agency (EPA) prescribes regulations that limit the amount of certain contaminants in water provided by public water systems. FDA regulations establish limits for 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 contaminants does not necessarily indicate that water poses a health risk. More information can be obtained by calling the Environmental Protection Agency's Safe Drinking Water Hotline (800) 426-4791.

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 system 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 microbiological contaminants are available from the Safe Drinking Water Hotline (800) 426-4791.

### SOURCES AND TREATMENT OF YOUR DRINKING WATER

The sources of WCSA drinking water and the treatment each receives are described below:

- Middle Fork of the Holston River (surface water) treated by chemical and physical means including filtration to remove particulate matter, chlorination for disinfection, and fluoridation for the promotion of dental health.
- Mill Creek Spring (ground water under the direct influence of surface water) treated by filtration to remove particulate matter, chlorination for disinfection, and fluoridation for the promotion of dental health.

- Reservation Spring (groundwater) treated by chlorination for disinfection and fluoridation for the promotion of dental health.
- South Holston Lake (surface water) treated by chemical and physical means including filtration to remove particulate matter, chlorination for disinfection and fluoridation for the promotion of dental health. This source is treated at the Washington County Service Authority Water Treatment Plant.

## SOURCE WATER ASSESSMENT

A source water assessment of our system was conducted in 2001, 2002, and 2019 by the Virginia Department of Health, the Washington County Service Authority and a private consulting agency. The Reservation Spring, Widener Spring, Jones Spring, Middle Fork of the Holston River and the South Holston Lake were determined to be of high susceptibility to contamination using the criteria developed by the state in its approved Source Water Assessment Program. Additional information concerning this report may be obtained from Washington County Service Authority by calling Philip King at the number listed above.

## DEFINITIONS

Contaminants in your drinking water are routinely monitored according to Federal and State regulations. The table on the next page shows the results of our monitoring for the period of January 1<sup>st</sup> to December 31<sup>st</sup>, 2018, unless otherwise noted. In the table and elsewhere in this report, you will find many terms and abbreviations you might not be familiar with. The following definitions are provided to help you better understand these terms:

*Maximum Contaminant Level, or MCL* - 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.

*Maximum Contaminant Level Goal, or MCLG* - 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.

*Maximum Residual Disinfectant Level Goal or MRDLG*: 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 contaminants.

*Maximum Residual Disinfectant Level or MRDL*: the highest level of a disinfectant allowed in drinking water. There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants.

*Non-detects (ND)* - lab analysis indicates that the contaminant is not present

*Parts per million (ppm) or Milligrams per liter (mg/l)* - one part per million corresponds to one minute in two years or a single penny in \$10,000.

*Parts per billion (ppb) or Micrograms per liter* - one part per billion corresponds to one minute in 2,000 years, or a single penny in \$10,000,000.

*Picocuries per liter (pCi/L)* - picocuries per liter is a measure of the radioactivity in water.

*Action Level (AL)* - the concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow.

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

*Level 1 assessment* - a study of the water system to identify potential problems and determine (if possible) why total coliform bacteria have been found in our water system.

*Level 2 assessment* - a very detailed study of the waterworks to identify potential problems and determine (if possible) why an *E. coli* PMCL violation has occurred and/or why total coliform bacteria have been found in our water system on multiple occasions.

*Nephelometric Turbidity Unit (NTU)* - nephelometric turbidity unit is a measure of the clarity, or cloudiness, of water. Turbidity in excess of 5 NTU is just noticeable to the average person. Turbidity is monitored because it is a good indicator of the effectiveness of our filtration system.

## WATER QUALITY RESULTS

### Regulated Contaminants

Contaminant (units)	MCLG	MCL	Level Detected	Violation (Y/N)	Range	Date of Sample	Typical Source of Contamination
Nitrate (ppm)	10	10	1.39	N	0.09 – 1.39	2019	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits
Fluoride (ppm)	4	4	0.66	N	ND – 0.66	2019	Water additive which promotes strong teeth
Barium (ppm)	2	2	0.038	N	0.024 – 0.038	2019	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits
Combined Radium (pCi/l)	0	5	1.4	N	0.5 – 0.8	2014	Erosion of Natural Deposits
Alpha Emitters (pCi/l)	0	15	1.4	N	ND – 1.4	2014	Erosion of Natural Deposits
Chlorine (ppm)	MRDLG = 4	MRDL = 4		N	0.2 – 2.2	2019	Water additive used to control microbes
Total Organic Carbon	NA	TT, met when $\geq 1$	1.00	N	-	2019	Naturally present in the environment
Haloacetic Acids (ppb)	NA	60	38	N	13 – 56	2019	By-product of drinking water disinfection
TTHMs [Total Trihalomethanes] (ppb)	NA	80	50	N	12 – 80	2019	By-product of drinking water disinfection
Turbidity (NTU)	NA	TT, 1 NTU Max	0.12	N	0.01 – 0.12	2019	Soil runoff
		TT, $\leq 0.3$ NTU 95% of the time	100%	N	NA		

### Lead and Copper Contaminants

Contaminant (units)	MCLG	Action Level	90 <sup>th</sup> Percentile	Date of Sampling	# of Sampling Sites Exceeding Action Level	Typical Source of Contamination
Lead (ppb)	0	AL – 15	3.1	2018	0	Corrosion of household plumbing systems; Erosion of natural deposits
Copper (ppm)	1.3	AL = 1.3	0.0868	2018	0	Corrosion of household plumbing systems; Erosion of natural deposits; Leaching from wood preservatives

Monitoring Results for Sodium (Unregulated-No Limits Designated)			
Level Detected (unit)	Sample Date	Typical Source	Guidance
6.08 (mg/L) Range: 1.16 – 6.08 mg/L	2019	Naturally Occurring; Addition of treatment chemicals/processes	For individuals on a very low sodium diet (500 mg/day), EPA recommends that drinking-water sodium not exceed 20 mg/L.  Should you have a health concern, contact your health care provider.

## Unregulated Contaminants

Name	Reported Level	Range	
		Low	High
Unregulated Contaminant Monitoring*			
Aggregate Organic Compounds Total Organic Carbon (ppb)	2100	ND	2100
Manganese (ppb)	57	ND	57
Bromochloroacetic Acid (ppb)	4.2	1.5	4.2
Bromodichloroacetic Acid (ppb)	3.0	1.5	3.0
Monobromoacetic Acid (ppb)	0.38	ND	0.38
Dichloroacetic Acid (ppb)	39	4.5	39
Monochloroacetic Acid (ppb)	2.7	ND	2.7
Trichloroacetic Acid (ppb)	31	5.9	31

\*Unregulated contaminants monitoring helps EPA to determine where certain contaminants occur and whether it needs to regulate those contaminants.

## Additional Information for Lead

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 **Clear Creek Waterworks** 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 15 to 30 seconds or until it becomes cold or reaches a steady temperature before using water for drinking or cooking. If you are concerned about lead in your water, you may wish to have your water tested. Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available from the Safe Drinking Water Hotline or at <http://www.epa.gov/safewater/lead>.