

# Annual Drinking Water Quality Report

## Clarke County Sanitary Authority

### INTRODUCTION

This Annual Drinking Water Quality Report for calendar year 2018 is designed to provide you with valuable information about your drinking water quality. The Clarke County Sanitary Authority is committed to providing 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 meets all state and federal requirements administered by the Virginia Department of Health (VDH).

If you have questions about this report, 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:

Ms. Mary Meredith, Clarke County Sanitary Authority at (540) 955-5185

You can get additional information by attending the monthly meetings of the Clarke County Sanitary Authority held the third Tuesday of each month at 9:00 A.M. at 101 Chalmers Court, Berryville, VA.

### GENERAL INFORMATION

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. Substances (referred to as contaminants) in source water may come from septic systems, discharges from domestic or industrial wastewater treatment facilities, agricultural and farming activities, urban storm water runoff, residential uses, and many other types of activities. Water from surface sources is treated to make it drinkable while groundwater may or may not have any treatment.

All drinking water, including bottled drinking 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. Immune-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

Your drinking water is surfaced influenced groundwater obtained from the Prospect Hill Spring. Water is distributed throughout Boyce, Millwood, and White Post by a finished water pump station, two booster pump stations, three storage tanks, and variously sized distribution piping.

All water supplied to Authority customers undergoes treatment. Treatment consists of membrane filtration and chlorination. Water pumped from the spring passes through a basket strainer to pre-treat the water prior to membrane filtration and chlorination. The membrane filtration eliminates turbidity and bacteria from the water, while chlorination is used to disinfect the water prior to distribution.

## SOURCE WATER ASSESSMENT

A source water assessment for the Clarke County Sanitary Authority was completed by the Virginia Department of Health (VDH) on September 18, 2002. This assessment determined that the Authority's water source, Prospect Hill Spring, may be susceptible to contamination because it is a surface influenced groundwater exposed to a wide array of contaminants at varying concentrations. Changing hydrologic, hydraulic and atmospheric conditions promote migration of contaminants from land use activities of concern within the assessment area. More specific information may be obtained by contacting the water system representative referenced within this report.

## QUALITY OF YOUR DRINKING WATER

Your drinking water is routinely monitored according to Federal and State Regulations for a variety of contaminants. The table on the next page shows the results of our monitoring for the period of January 1 to December 31, 2018. However, the state allows us to monitor for some contaminants less than once per year because the concentrations of these contaminants do not change frequently. Some of our data, though accurate, is more than one year old.

## DEFINITIONS

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:

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

**Level 1 Assessment:** A Level 1 Assessment is 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 Level 2 Assessment is a very detailed study of the water system to identify potential problems and determine, if possible, why an E-coli MCL violation has occurred and / or why total coliform bacteria have been found in our water system on multiple occasions.

**Maximum Contaminant Level (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 (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 (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.

**Maximum Residual Disinfectant Level Goal (MRDLG):** The level of a 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.

**Nephelometric Turbidity Unit (NTU) -** A measure of the clarity of water. Turbidity in excess of 5 NTU is just noticeable to the average person.

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

**Parts per billion (ppb) or Micrograms per liter ( $\mu\text{g/L}$ ):** One part per billion corresponds to one minute in 2,000 years, or a single penny in \$10,000,000.

**Parts per million (ppm) or Milligrams per liter ( $\text{mg/L}$ ):** One part per million corresponds to one minute in two years or a single penny in \$10,000.

**Picocuries per liter ( $\text{pCi/L}$ ):** A measure of the radioactivity in water.

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

## WATER QUALITY RESULTS

We constantly monitor for various contaminants in the water supply to meet all regulatory requirements. The tables list only those contaminants that had some level of detection. Many other contaminants have been analyzed but were not present or were below the detection limits of the lab equipment.

Maximum Contaminant Levels (MCLs) are set at very stringent levels by the U.S. Environmental Protection Agency. In developing the standards EPA assumes that the average adult drinks 2 liters of water each day throughout a 70-year life span. EPA generally sets MCLs at levels that will result in no adverse health effects for some contaminants or a one-in-ten-thousand to one-in-a-million chance of having the described health effect for other contaminants.

| Turbidity <sup>1</sup>            |       |                 |  |                           |                |   |                                 |
|-----------------------------------|-------|-----------------|--|---------------------------|----------------|---|---------------------------------|
| Contaminant / Unit of Measurement | MCLG  | MCL             | Highest Level Found                        | Lowest Monthly % <0.3 NTU | Violation      | Date of Sample  | Typical Source of Contamination |
| Turbidity NTU                     | NA    | TT <sup>2</sup> | 0.262                                      | 100%                      | No             | 2018  | Soil Runoff                     |
| Inorganic Contaminants            |       |                 |  |                           |                |   |                                 |
| Contaminant / Unit of Measurement | MCLG  | MCL             | Level Found (Range)                        | Exceedance                | Date of Sample | Typical Source of Contamination   |                                 |
| Barium ppm                        | 2     | 2               | 0.049                                      | No                        | 2018           | Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits  |                                 |
| Nitrate ppm                       | 10    | 10              | 2.00                                       | No                        | 2018           | Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits |                                 |
| Radiological Contaminants         |       |                 |  |                           |                |   |                                 |
| Contaminant / Unit of Measurement | MCLG  | MCL             | Level Found (Range)                        | Violation                 | Date of Sample | Typical Source of Contamination   |                                 |
| Alpha emitters pCi/L              | 0     | 15              | <2.2                                       | No                        | 2014           | Erosion of natural deposits   |                                 |
| Beta emitters pCi/L               | 0     | 50*             | 2.8  | No                        | 2014           | Decay of natural and man-made deposits  |                                 |
| Lead and Copper                   |       |                 |  |                           |                |   |                                 |
| Contaminant / Unit of Measurement | MCLG  | MCL             | 90 <sup>th</sup> Percentile # Samples > AL | Exceedance                | Date of Sample | Typical Source of Contamination   |                                 |
| Lead ppb                          | 0     | AL=15           | 5.3<br>No samples exceeded the AL          | No                        | 2017           | Corrosion of household plumbing systems; Erosion of natural deposits                        |                                 |
| Copper ppm                        | 1.3   | AL=1.3          | 0.38<br>No samples exceeded the AL         | No                        | 2017           | Corrosion of household plumbing systems; Erosion of natural deposits                        |                                 |
| Disinfection Byproducts           |       |                 |  |                           |                |   |                                 |
| Contaminant/Unit of Measurement   | MCLG  | MCL             | Level Found (Range)                        | Violation                 | Date of Sample | Typical Source of Contamination   |                                 |
| Haloacetic Acids (HAA5) ppb       | NA    | 60              | 6.9<br>(ND - 11)                           | No                        | 2018           | By-product of drinking water disinfection   |                                 |
| Total Trihalomethanes (TTHM) ppb  | NA    | 80              | 23.8<br>(11 - 40)                          | No                        | 2018           | By-product of drinking water disinfection   |                                 |
| Disinfection Residual             |       |                 |  |                           |                |   |                                 |
| Contaminant/Unit of Measurement   | MRDLG | MRDL            | Level Found (Range)                        | Violation                 | Date of Sample | Typical Source of Contamination   |                                 |
| Chlorine ppm                      | 4     | 4               | 0.9<br>(0.3 - 4.0)                         | No                        | 2018           | By-product of drinking water chlorination   |                                 |

<sup>1</sup> Turbidity is a measure of the cloudiness of the water. We monitor it because it is a good indicator of our water quality and the effectiveness of the filtration process.

<sup>2</sup> Turbidity TT = 1 NTU Max; ≤ 0.3 NTU in at least 95% of all samples tested.

\*The MCL for beta particles is 4 mrem/yr. EPA considers 50 pCi/L to be the level of concern for beta particles.

## Lead Contaminants

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. Clarke County Sanitary Authority is responsible for providing high quality drinking water, but cannot control the variety of materials used in the 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 water, you may wish to have your water tested. Information on the 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>.

## VIOLATION INFORMATION

We received one violation for failure to monitor Disinfection By-Products during May of 2018. The routine sample collected on May 8, 2018 did not report the free chlorine residuals reading and the disinfectant level must be measured in the distribution system at the same point and at the same time as the required water sample for bacteriological examination.

The waterworks owners prepared this Drinking Water Quality Report with the assistance and approval of the Virginia Department of Health (VDH). Please call if you have questions.

Signature: \_\_\_\_\_

*Roy L. Matus*

Date: 5-15-19