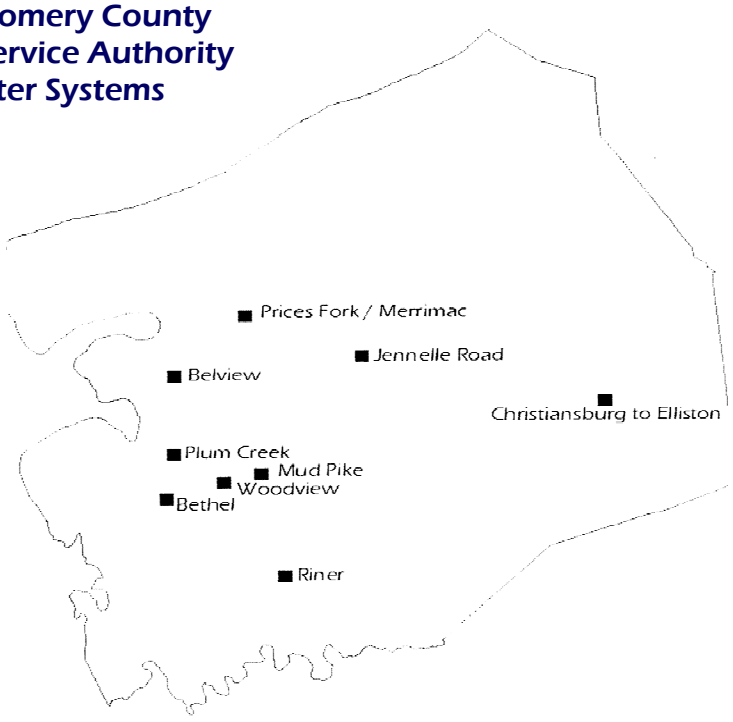
# 2018

Bethel

# Consumer Confidence Report

**Montgomery County Public Service Authority Water Systems**




**THE MONTGOMERY COUNTY PUBLIC SERVICE AUTHORITY IS PLEASED TO REPORT THAT YOUR DRINKING WATER IS SAFE AND MEETS OR EXCEEDS ALL VIRGINIA DEPARTMENT OF HEALTH AND UNITED STATES ENVIRONMENTAL PROTECTION AGENCY STANDARDS**

## Introduction

This report is designed to inform you about your drinking water quality. Our goal is to provide a safe and dependable supply of drinking water. 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).
The Montgomery County Public Service Authority (PSA) operates nine individual public water systems in the unincorporated areas of the County. Combined, these systems consist of almost 100 miles of water mains, four wells, 16 water tanks, 22 pumps, 24 pressure reducing valves, seven connections to the NRV Regional Water Authority, and two connections to the City of Radford, Approximately 25.5 million gallons of water are distributed by the PSA monthly.

If you have questions about this report, please contact:

(Don Todora
PSA Operations Specialist
(540) 381-1997

For additional information about any aspect of your drinking water or to learn how to participate in decisions that may affect the quality of your drinking water, please contact:

PSA Director
(540) 381-1997

PSA board meetings are held at 7:00 p.m. on the first Monday of each month in the multipurpose room # 2 on the second floor in the Montgomery County Government Center, 755 Roanoke Street in Christiansburg.

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**This and other important information are available on the PSA website: MontVA.com/psa**

## General information

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. **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.** USEPA/CDC guidelines on appropriate means to lessen the risk of infection by cryptosporidium and other microbiological contaminants along with **additional information can be obtained by calling the Environmental Protection Agency's Safe Drinking Water Hotline (800-426-4791) or by visiting their website (www.epa.gov/safewater).**

**The sources of drinking water** (both tap water and bottled water) **include 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:

(1) Microbial contaminants, such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife.

(2) 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.

(3) Pesticides and herbicides, which may come from a variety of sources such as agriculture, urban storm water runoff, and residential uses.

(4) 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.

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

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

## Sources and treatment of your drinking water

**The nine water systems operated by the Public Service Authority include both surface water and groundwater sources.** Four are supplied by the NRV Regional Water Authority; Prices Fork/Merrimac, Belview, Jennelle Road, Christiansburg to Elliston and Mudpike Road. Two are supplied by the City of Radford: Plum Creek and Bethel. Two are supplied by wells operated by the PSA: Riner and Woodview. **The New River is the surface water source supplying the systems connected to NRV Regional Water Authority and The City of Radford.** The raw water goes to either the NRV Regional Water Authority Treatment Plant orThe City of Radford Water Treatment Plant. **Treatment consists of chemical addition, coagulation, flocculation, settling, filtration and disinfection.** All these processes work together to remove the physical, chemical and biological contaminants to make the water safe for drinking. The New River was determined to be of high susceptibility to contamination using criteria developed by the State in its USEPA approved Source Water Assessment Program. **The assessment report consists of maps showing the source water assessment area, an inventory of known land use activities of concern, and documentation of any known contamination within the last five years from the date of the assessment**. Treatment plants are operated to minimize threats associated with potential contamination of these water sources.

**Treatment of the groundwater sources at the PSA's wells consist of the addition of chlorine to disinfect the water.** Chlorine residuals and turbidities are checked on a daily basis at the wells and throughout all the individual distribution systems. Water storage tanks are checked at least two times weekly.

**Source water assessments have been completed for the PSA's groundwater supplied systems: Riner and Woodview.** These wells have a high susceptibility to contamination due to migration of contaminants with land use activities of concern, potential conduits to groundwater and/or potential sources of contamination in the assessment areas. **There has been no known contamination of these sources within the last five years.** Source water assessments are available to view upon written request.

## Quality on Tap

Contaminants in your drinking water are routinely monitored according to Federal and State regulations. **The table on the following page shows the results of our monitoring for the period of January 1 to December 31, 2018.** Any contaminants not listed in the table were not detected in your drinking water.

**PSA water is routinely monitored for up to 76 regulated, 48 unregulated, and many non-regulated contaminants.** The Virginia Department of Health 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 presented in the following table may be more than one year old.

In the table and elsewhere in this report, you will find many terms and abbreviations with which you might not be familiar. **The following definitions are provided to help you better understand these terms.**

| | | |
|---|---|---|
| ppm<br>mg/l | parts per million<br>milligrams per liter | One part per million corresponds to one minute in two years, or a single penny in $10,000.00. |
| ppb<br>µg/l | parts per billion<br>micrograms per liter | One part per billion corresponds to one minute in 2,000 years, or a single penny in $10,000,000.00 |
| MCLG | Maximum Contaminant Level Goal | the level of contaminant in drinking water below which there is no known or expected risk to health. MCLG's allow for a margin of safety. |
| MCL | Maximum Contaminant Level | the highest level of a contaminant that is allowed in drinking water. MCL's are set as close to the MCLG's as feasible using the best available treatment technology. |
| AL | Action Level | the concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow |
| pCi/L | Picocuries per liter | a measure of the radioactivity in water |
| N/A | Not Applicable | abbreviation used in the "range" section |
| mrem/yr | millirems per year | a measure of radiation absorbed by the body |
| MRDLG | Maximum Residual Disinfectant Level Goal | the level of drinking water disinfectant below which there is no known or expected risk to health. MRDLG's do not reflect the benefits of the use of disinfectants to control microbial contaminants. |
| MRDL | Maximum Residual Disinfectant Level | 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. |
| TT | Treatment Technique | a required process intended to reduce the level of a contaminant in drinking water |
| NTU | Nephelometric Turbidity Unit | a measure of the clarity of water. Turbidity in excess of 5 NTU is just noticeable to the average person. |
| ND | Not Detected | Lab analysis indicates that the contaminant is not present or is below detection limit |
| | Level 1 Assessment | A study of water system to identify potential problems and determine (if possible) why total coliform bacteria have been found. |

## Additional health 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 Montgomery County Public Service Authority 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 two 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 lead in drinking water, testing methods, and steps you can take to minimize exposure is available from the **Safe Water Drinking Hotline (800-426-4791) or at http;://www.epa.gov/safewater/lead.**

## Drinking water levels

The U.S. Environmental Protection Agency sets MCL's at very stringent levels. In developing these standards, USEPA assumes that the average adult drinks two liters of water each day throughout a 70-year lifespan. USEPA generally sets MCL's at levels that will result in no adverse health affects for some contaminants or a one-in-one million change of having the described health effect for other contaminants.

# Bethel

## 2018 water quality results of regulated contaminants

### *In the distribution system*

#### Microbiological contaminants present

| CONTAMINANT (units) | MCLG | MCL | LEVEL DETECTED | RANGE | IN COMPLIANCE | DATE OF SAMPLE | TYPICAL SOURCE OF CONTAMINANT |
|---|---|---|---|---|---|---|---|
| TOTAL ORGANIC CARBON | N/A | TT, met when ≥ 1 or alternate criteria is met | 1.0 | N/A | YES | 2018 | Naturally present in the environment |
| TURBIDITY (NTU) | N/A | TT, 1 NTU Max max TT, ≤ 0.3 (100% of the time) | 0.122 100% | 0.033 to 0.122 | YES | 2018 | Soil runoff |

#### Inorganic contaminants present

| CONTAMINANT (units) | MCLG | MCL | LEVEL DETECTED | RANGE | IN COMPLIANCE | DATE OF SAMPLE | TYPICAL SOURCE OF CONTAMINATION |
|---|---|---|---|---|---|---|---|
| NITRATE/NITRITE (ppm) | 10 | 10 | 0.64 | N/A | YES | 2018 | Runoff from fertilizer use, leaching from septic tanks, sewage, erosion of natural deposits |
| BARIUM (ppm) | 2 | 2 | 0.021 | N/A | YES | 2018 | Discharge of drilling waste, Discharge from metal refineries, Erosion of natural deposits |
| FLUORIDE | 4 | 4 | 0.45 | N/A | YES | 2018 | Erosion of natural deposits, water additive which promotes strong teeth |

#### Volatile organic contaminants present

| CONTAMINANT (units) | MCLG | MCL | LEVEL DETECTED | RANGE | IN COMPLIANCE | DATE OF SAMPLE | TYPICAL SOURCE OF CONTAMINATION |
|---|---|---|---|---|---|---|---|
| CHLORINE (ppm) | MRDLG=4 | MRDLG=4 | 1.15 | 0.5 to 1.8 | YES | 2018 | Water additive used to control microbes |
| **HALOACETIC ACID (ppb)** | **N/A** | **60** | **63** | **44 to 84** | **No** | **2018** | **By-product of drinking water disinfection** |
| TOTAL TRIHALO-METHANES (ppb) | N/A | 80 | 55 | 21 to 76 | YES | 2018 | By-product of drinking water disinfection |

### *At the customer tap*

#### Inorganic contaminants present

| CONTAMINANT (units) | MCLG | ACTION LEVEL | 90TH PERCENTILE | # SITES EXCEEDING AL | IN COMPLIANCE | DATE OF SAMPLE | TYPICAL SOURCE OF CONTAMINATION |
|---|---|---|---|---|---|---|---|
| LEAD (ppb) | 0 | 15 | 11.1 | 0 | YES | 2018 | Corrosion of household plumbing |

### *VIOLATION INFORMATION*

**During the twelve-month monitoring periods from April 1, 2017, through March 31, 2018, and October 1, 2017, through September 30, 2018, our waterworks exceeded the four-quarter Primary Maximum Contaminant Level (PMCL) locational running annual average (LRAA) of 0.060 milligrams per liter (mg/L) for Haloacetic Acids (HAA5). During April 1, 2017, through March 31, 2018, the four-quarter LRAA HAA5 concentration was 0.063 mg/L, and during October 1, 2017, through September 30, 2018, the four quarter LRAA HAA5 concentration was 0.062 mg/L. Since this time, our HAA5 concentrations have dropped and we no longer exceed the PMCL. Some people who drink water containing haloacetic acids in excess of the MCL over many years may have an increased risk of getting cancer.**

### ADDITIONAL INFORMATION ABOUT CRYPTOSPORIDIUM MONITORING

In 2018, the City of Radford monitored for Cryptosporidium in the source water (before treatment) as required by EPA's Long Term 2 Enhanced Surface Water Treatment Rule (LT2ESWTR). Cryptosporidium is a microscopic parasite found in surface water throughout The United States. Ingestion of Cryptosporidium may cause cryptosporidiosis, an abdominal infection. Although filtration removes Cryptosporidium, the most commonly-used filtration methods cannot guarantee 100 percent removal. Under the LT2ESWTR, the average Cryptosporidium concentration determines if additional treatment measures are needed. Twenty-four samples are required for analysis over a two-year period. During 2018, the average Cryptosporidium concentration was 0.01 oocysts per liter for the 9 samples collected. Based on the Cryptosporidium monitoring results so far and the current performance of the treatment plant, we anticipate meeting the future treatment requirements of the LT2ESWTR.