

# *2021 Annual Drinking Water Quality Report*

## Amelia Courthouse Waterworks

### **INTRODUCTION**

This Annual Drinking Water Quality Report for calendar year 2021 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 questions about this report, or 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:

A. Taylor Harvie, III (804) 561-3039
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The times and location of regularly scheduled Board of Supervisors meetings are as follows:

3rd Wednesday of each month 7:00pm at the Amelia Courthouse
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### **GENERAL INFORMATION**

The sources of drinking water (both tap 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 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 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 byproducts of industrial processes and petroleum production, and can also come from gas stations, urban stormwater runoff, and septic systems.
- 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, EPA 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.

Water from surface sources is treated to make it drinkable while groundwater may or may not have any treatment.

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).

## **VULNERABLE POPULATIONS**

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).

## **SOURCE AND TREATMENT OF YOUR DRINKING WATER**

The source of your drinking water is groundwater from five drilled wells. The water is treated by adding chlorine solution for continuous disinfection at four of the wells. A blended phosphate solution is added at two wells to sequester iron and manganese. One of the five wells is untreated.

Under a program developed by VDH, a detailed source water assessment has been conducted to find ways to better protect drinking water sources. The assessment will provide you with information about potential sources of contamination and ways to reduce or eliminate them.

The U.S. Environmental Protection Agency sets MCLs at very stringent levels. 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-one-million chance of having the described health effect for other 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. Amelia Courthouse 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 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>.

## **DEFINITIONS**

Contaminants in your drinking water are routinely monitored according to federal and state regulations. The table below shows the results of this monitoring for the period of January 1<sup>st</sup> through December 31<sup>st</sup>, 2021. In the table and elsewhere in this report you will find terms and abbreviations you might not be familiar with. The following definitions are provided to help you better understand these terms:

**Parts per million (ppm) or Milligrams per liter (mg/l)** - one part per million corresponds to one minute in two years or one 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 one 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.

**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 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 Residual Disinfectant Level Goal (MRDLG)** – the maximum level of a disinfectant added for water treatment, 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 (MRDL)** – the maximum level of a disinfectant allowed in drinking water. There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants.

## WATER QUALITY RESULTS

We routinely monitor for various contaminants in the water supply to meet all regulatory requirements. The table below lists only those contaminants that had some level of detection in the last five years. Many other contaminants have been analyzed but were not present or were below the detection limits of the lab equipment. Because the state allows us to monitor for some contaminants less than once per year, some of our results, though representative, are more than one year old.

### 5007135 AMELIA COURTHOUSE-2021 Updated Chart

Inorganic Contaminants						
Contaminant / Unit of Measurement	MCLG	MCL	Level Found	Violation	Date of Samples	Typical Source of Contamination
Nitrate ppm	10	10	High: ND Range: ND to ND	No	January, April, & July 2021	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits
Fluoride ppm	4	4	High: 0.33 Range: ND to 0.33	No	January & July 2019, January 2020	Erosion of natural deposits; Water additive which promotes strong teeth; Discharge from fertilizer and aluminum factories
Barium ppm	2	2	High: 0.051 Range: ND to 0.051	No	January & July 2019, January 2020	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits
Lead and Copper						
Contaminant / Unit of Measurement	MCLG	MCL	Level Found/Range	Exceedance	Date of Samples	Typical Source of Contamination
Lead ppb	0	AL=15	1(90 <sup>th</sup> percentile) Range: ND to 3.2 Of the ten samples collected none exceeded the AL	No	July 2020	Corrosion of household plumbing systems; Erosion of natural deposits
Copper ppm	1.3	AL=1.3	0.093(90 <sup>th</sup> percentile) Range: ND to 0.23 Of the ten samples collected none exceeded the AL.	No		Corrosion of household plumbing systems; Erosion of natural deposits
Radiological Contaminants						
Contaminant / Unit of Measurement	MCLG	MCL	Level Found	Violation	Date of Samples	Typical Source of Contamination
Alpha Emitters pCi/L	0	15	High: 0.5 Range: ND to 2.9	No	April 2018, January & July 2020	Erosion of natural deposits
Combined Radium pCi/L	0	5	High: 1.9 Range: ND to 1.9	No		Erosion of natural deposits

Disinfection Byproducts						
Contaminant / Unit of Measurement	MCLG	MCL	Level Found	Violation	Date of Sample	Typical Source of Contamination
TTHMs (Total Trihalomethanes) ppb	N/A	80	12	No	September 2020	By-product of drinking water disinfection
HAA5s (Total Haloacetic Acids) ppb	N/A	60	2.4	No		By-product of drinking water disinfection
Chlorine ppm	MRDLG =4	MRDL =4	Highest Qtly. Avg.: 1.1 Range: 0.52 to 1.7	No	Monthly 2020	Water additive used to control microbes

Aesthetic Quality						
Contaminant / Unit of Measurement	MCLG	SMCL	Level Found	Exceedance	Date of Sample	Typical Source of Contamination
Manganese ppm	N/A	0.05	High: 0.207 Range: ND to 0.207	Yes	January & July 2019, January, January 2020	Erosion of natural deposits
Iron ppm	N/A	0.3	High: 2.53 Range: ND to 2.53	Yes	January & July 2019, January, January 2020	Erosion of natural deposits

Monitoring Results for Sodium (Unregulated-No Limits Designated)			
Level Detected (unit)	Sample Date	Typical Source	Guidance
Range 6.27-20.1 mg/l	2019-2020	Naturally Occurring; Addition of treatment chemicals/processes	For individuals on a <u>very</u> 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.

We are pleased to report to you that there were no detections of total coliforms or fecal coliforms in the monthly samples collected during calendar year 2021.

## **VIOLATION INFORMATION**

We did not receive any monitoring or operational violations during the 2021 calendar year.