

Continuing our

## commitment

We proudly present Goochland County's Annual Water Quality Report for the Eastern Central System. This report is required to be provided to you per Virginia Department of Health (VDH) requirements and is designed to inform you about the quality of water and services we deliver to you every day. Our constant goal is to provide you with a safe and dependable supply of drinking water, and we are pleased to inform you that our compliance with state and federal drinking water laws remains exemplary.

We want you to understand the efforts we make to continually improve the provision of water and protect our water resources. We are committed to ensuring the quality of your water is meeting state and federal requirements administered by the Virginia Department of Health (VDH).

If you have any questions about this report or concerning your water utility, please contact the DPU office at (804) 556-5835.

Where does my

## water come from?

Goochland purchases water for the Eastern System from Henrico County. Henrico County uses conventional flocculation, sedimentation and filtration processes to treat the water before it is delivered to you.

P.O. Box 119  
Goochland, VA 23063

# 2018 Water Quality Report

Eastern Central System



Proudly Presented by

Goochland County  
Public Utilities

PWS ID#: VA 4075283

Important

## health information

Some people may be more vulnerable to contaminants in drinking water than the general population. Immunocompromised persons such as those 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).

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 County of Goochland 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>.



### Substances that might be in Drinking Water...

To ensure that tap water is safe to drink, U.S. EPA regulations limit the amount of certain contaminants in water provided by public water systems. The U.S. Food and Drug Administration 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 - their presence does not necessarily indicate that the water poses a health risk. More information can be obtained by calling the U.S. EPA's Safe Drinking Water Hotline 800-426-4791.

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 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 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. Organic chemical contaminants 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.

The Virginia Department of Health (VDH) conducted a source water assessment of our water system during 2001. Using criteria developed by the State in its EPA-approved Source Water Assessment Program, it was determined that on a relative basis, the James River was determined to be highly susceptible to contamination. 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 5 years from the date of the assessment. A copy of the source water assessment report is available by contacting Randall L. Morrisette at the State Health Department at (804) 864-8176.

**Water Quality and What it means...** As water travels over the land or underground, it can pick up substances or contaminants such as microbes, inorganic and organic chemicals, and radioactive substances. During the past year, we have taken hundreds of water samples in order to determine the presence of any radioactive, biological, inorganic, volatile organic, or synthetic organic contaminants. The table below shows only those contaminants that were detected in the water between January 1st and December 31st, 2018. *Although all of the substances listed here are below the applicable Maximum Contaminant Level (MCL) set forth by the U.S. EPA, we believe that it is important that you know exactly what was detected and how much of the substance was present in the water.*

**I. Microbiological Contaminants**

Contaminant (Unit of Measure)	MCLG	MCL	No. of Samples Indicating Presence of Bacteria	Violation (Y/N)	Date Sampled	Typical Source
Total Coliform Bacteria	0	Presence in more than 1 sample each month.	0	N	2018	Naturally present in the environment.
E-Coli Coliform Bacteria	0	A routine sample and a repeat sample are total coliform positive, and one is also E-coli positive.	0	N	2018	Human and animal fecal waste.

**II. Lead and Copper Contaminants**

Contaminant (Unit of Measure)	Date Sampled	AL	MCLG	Amount Detected (90% tile)	Sites Above AL/Total Sites	Violation (Y/N)	Typical Source
Copper <sup>1</sup> (ppm)	7/2017	1.3	1.3 mg/L	0.18 mg/L	0/10	N	Corrosion of household plumbing systems; Erosion of natural deposits; Leaching from wood preservatives
Lead <sup>1</sup> (ppb)	7/2017	15	0 ppb	<2 ppb	0/10	N	Corrosion of household plumbing systems; Erosion of natural deposits

**Footnote** <sup>1</sup>90th percentile of the latest round of sampling = value of lead or copper at the 90% level of ascending results.

**III. Other Chemical and Radiological Contaminants**

Contaminant (Unit of Measure)	Date Sampled	MCL [MRDL]	MCLG [MRDL]	Amount Detected	Range Low-High	Violation (Y/N)	Typical Source
Gross Beta (pCi/L)	2017/2018	50	0	3.7	NA	N	Erosion of natural deposits
Barium (ppm)	2018	2	2	0.027	NA	N	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits
Chloramines <sup>2</sup>	2018	[4]	[4]	1.09	0.01-3.38	N	Disinfectant used to control microbes
Combined Radium (pCi/L)	2017/2018	5	0	<0.52	NA	N	Erosion of natural deposits
Fluoride (ppm)	2018	4	4	0.82	NA	N	Erosion of natural deposits; Water additive which promotes strong teeth; Discharge from fertilizer and aluminum factories
Haloacetic Acids [HAA] (ppm)	7/2018	.060	NA	.0034	NA	N	By-product of drinking water disinfection
Nitrate (ppm)	2018	10	10	0.12	NA	N	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits
TTHMs [Total Trihalomethanes] (ppm)	7/2018	0.080	NA	0.0046	NA	N	By-product of drinking water chlorination
Total Organic Carbon <sup>3</sup> (removal ratio)	2018	TT	NA	1.7	1.0 - 2.5	N	Naturally present in the environment

**Footnotes** <sup>2</sup>Amount detected is the maximum of the rolling annual average. Range is the minimum and maximum of all samples used to calculate those averages.

<sup>3</sup>Amount detected is the lowest rolling annual average removal ratio. Range is the minimum and maximum of all samples used to calculate those averages. (A value of one or greater indicates that the water system complies with TOC removal requirements.)

**IV. Unregulated Contaminant**

Unregulated Contaminant	Date Sampled	Level Detected	Unit Measurement	MCLG	MCL	Range Low-High	Violation (Y/N)	Typical Source
Sodium	2018	28.8	ppm	--	--	NA	N	Naturally occurring in water

There is no established standard for sodium in drinking water. However, the State Health Department recommends a diet of less than 20 mg/L of sodium in drinking water. Individuals on a sodium-restricted diet should consult medical personnel for more information.

**V. Water Clarity**

Contaminant	MCL	MCLG	Level Found	Date Sampled	Violation (Y/N)	Typical Sources of Contamination
Turbidity <sup>4</sup>	TT= < 1 NTU	NA	0.66 NTU	2018	N	Soil runoff
	TT<0.3 NTUs 95% of time	NA	99.8%	2018	N	

**Footnote** <sup>4</sup> Turbidity is a measure of the cloudiness of the water. It is monitored because it is a good indicator of our filtration system's effectiveness. We constantly monitor for various contaminants in the water supply to meet all regulatory requirements. The table above lists 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. Most of the results in tables I, II, III, IV and V are from testing done in 2018. However, the state allows us to monitor for some contaminants less than once per year concentrations of these contaminants do not change frequently.

**YOUR WATER SYSTEM DID NOT HAVE ANY VIOLATIONS DURING THE YEAR.**

**DEFINITIONS**

**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** - The "Maximum Allowed" (MCL) is 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** - The "Goal"(MCLG) is 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.

**Millirems per year (mrem/yr)** - measure of radiation absorbed by the body.

**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)** - laboratory analysis indicates that the constituent is not present.

**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.

**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.

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

**Running Annual Average (RAA)** - the average of results for 12 consecutive months (calculated at the end of each quarter).

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

**Variances and Exemptions** - state or EPA permission not to meet an MCL of a treatment technique under certain conditions.

Maximum Contaminant Levels (MCLs) are set at very stringent levels. To understand the possible health effects described for many regulated constituents, a person would have to drink 2 liters of water every day at the MCL level for a lifetime to have a one-in-a-million chance of having the described health effect.

Thank you for allowing us to continue providing your family with clean, quality water this year. In order to maintain a safe and dependable water supply we sometimes need to make improvements that will benefit all of our customers. These improvements are sometimes reflected in the rate structure. Thank you for your understanding.

We work around the clock to provide top quality water to everyone in Goochland County, Virginia. We ask that all our customers help us protect our water sources and systems, which are the heart of our community, our way of life and our children's future.

**Cryptosporidium in Drinking Water**

Cryptosporidium is a microbial parasite that can cause cryptosporidiosis, a type of gastrointestinal illness, in humans. Henrico County recently collected 23 samples between 2015 and 2017 of the untreated water in the James River for cryptosporidium, to determine if the level of treatment provided at the Henrico Water Treatment Plant is adequate for the concentration of cryptosporidium detected in the river. The average concentration detected in the river water was 3.5 oocysts per 100 liters. This is less than the EPA's Action Level of 7.5 oocysts per 100 liters.