

2021 Water Quality Report
City of Colonial Heights
PWSID: 3570150

This report 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).

For information pertaining how you may participate in decisions regarding your water supply you may contact:

Todd Flippen, P.E.

Director of Public Works/City Engineer

City of Colonial Heights

201 James Avenue

PO Box 3401

Colonial Heights, VA 23834

Office: (804) 520-9334

Fax: (804) 520-9237

E-mail: flippent@colonialheightsva.gov

Web: www.colonialheightsva.gov

Why are there contaminants in my drinking water?

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 about contaminants and potential health effects can be obtained by calling the Environmental Protection Agency's (EPA) Safe Drinking Water Hotline (800-426-4791).

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:

- *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 by-products 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 that limit the amount of certain contaminants in water provided by public water systems. Food and Drug Administration (FDA) regulations establish limits for contaminants in bottled water which must provide the same protection for public health.

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

lifespan. 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.

Do I need to take special precautions?

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/Centers for Disease Control (CDC) guidelines on appropriate means to lessen the risk of infection by *Cryptosporidium* and other microbial contaminants are available from the Safe Water Drinking Hotline (800-426-4791).

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 City of Colonial Heights 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>.

Where does my water come from?

The Appomattox River Water Authority provides water to the Cities of Colonial Heights and Petersburg and the Counties of Chesterfield, Dinwiddie and Prince George. The Authority obtains its water from Lake Chesdin, a surface water impoundment of the Appomattox River. There are no significant sources of contamination for Lake Chesdin. The Farmville wastewater treatment plant is forty miles upstream and there are numerous animal feed lots and farms in the drainage area.

Source water assessment and its availability

The Virginia Department of Health conducted a source water assessment of our system during 2002. Lake Chesdin (Appomattox River) was determined to be highly susceptible to contamination using criteria developed by the state in its approved Source Water Assessment Program. The assessment 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. The report is available by contacting Mr. Robert Wilson, Executive Director at 804-590-1145.

WATER QUALITY RESULTS

Contaminants in your drinking water are routinely monitored according to Federal and State regulations. The EPA requires that Table I reflect monitoring results for the period of January 1, 2017 through December 31, 2021. 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, may be more than one year old. Only the most recent sample results from the prescribed period are reported. The table lists 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.

For more local information, contact the Colonial Heights Director of Public Works, Mr. Todd Flippen, at 804-520-9334 or the Appomattox River Water Authority at 804-590-1145. Public Comment forums are available at all City Council meetings which are held on the second Tuesday night of each month.

Water Quality Data Table - 2021

The table below lists all of the drinking water contaminants that we detected during the calendar year of this report. The presence of contaminants in the water does not necessarily indicate that the water poses a health risk. Unless otherwise noted, the data presented in this table is from testing done in the calendar year of the report. The EPA or the State requires us to monitor for certain contaminants less than once per year because the concentrations of these contaminants do not change frequently.

Regulated in the Colonial Heights Distribution System

Primary Contaminant	Units	MCLG	MCL	Level Detected	Range	Violation	Date of Sample	Typical Source of Contamination
Total Coliform Bacteria RTCR	%	0	Not to exceed 5% of monthly samples	None Positive	0% - 5%	No	2021	Naturally present in the environment. 240 of 240 samples negative
Fecal Coliform & <i>E. coli</i> RTCR	%	0	0 See Footnote	None Positive	0.00%	No	2021	Human and animal fecal waste. 240 of 240 samples negative
Total Trihalomethanes (TTHM)	ppb	n/a	80	22.0	8.9 – 29.0	No	2021	By-product of drinking water disinfection.
Haloacetic Acids (HAA5)	ppb	n/a	60	21.0	5.3 – 22.0	No	2021	By-product of drinking water disinfection.
Copper - action level at consumer taps *	ppm	1.3	AL = 1.3	0.108*	<.02 - 0.25	No	2020	Corrosion of household plumbing systems; Erosion of natural deposits.
Lead - action level at consumer taps *	ppb	0	AL = 15	0*	<2 - 152	No	2020	Corrosion of household plumbing systems; Erosion of natural deposits.
Chlorine (as Cl ₂)	ppm	MRDLG = 4	MRDL = 4	2.67	0.4 - 3.6	No	2021	Water additive used to control microbes.
Chlorite	ppm	0.8	1.0	0.25	0.03 - 0.26	No	2021	By-product of drinking water disinfection.

Regulated at the ARWA Treatment Plant

Primary Contaminant	Units	MCLG	MCL	Level Detected	Range	Violation	Date of Sample	Typical Source of Contamination
Chlorine Dioxide	ppb	MRDLG = 800	MRDL = 800	100	<100 - 100	No	2021	Water additive used to control microbes
Fluoride	ppm	4	4	0.68	<0.1 – 0.86	No	2021	Water additive which promotes strong teeth; Discharge from fertilizer and aluminum factories.

Nitrate + Nitrite	ppm	10	10	0.12	n/a	No	2021	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits.
Barium	ppm	2	2	0.021	n/a	No	2021	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits.
Radium	pCi/L	0	5	0.2	n/a	No	2020	Erosion of natural deposits.
Primary Contaminant	Units	MCLG	MCL	Level Detected	Range	Violation	Date of Sample	Typical Source of Contamination
Alpha emitters	pCi/L	0	15	<0.39	n/a	No	2020	Erosion of natural deposits
Beta/photon**	pCi/L	0	50**	1.9	n/a	No	2020	Decay of natural and man-made deposits
Total Organic Carbon (TOC)	n/a	n/a	TT, minimum running annual average removal ratio = 1.0	1.44	1.21 – 1.67	No	2021	Naturally present in the environment
Turbidity - filtered water	NTU	n/a n/a	TT=1 NTU max TT=% of samples <0.3 NTU 95% of time	0.037 99.94%	0 - 0.142 99.94%	No	Every 15 Minutes	Soil runoff 34995 of 35015 readings were <0.3 NTU

Other Contaminants of Interest

Contaminant	Units	MCLG	MCL	Level Detected	Range	Violation	Date of Sample
<i>Cryptosporidium</i> ±	oocysts/L	<0.075	n/a	0.04	ND - 0.19	No	March 2015 –February 2017 (raw water)

Unregulated Contaminants	Units	MCLG	MCL	Highest	Average	Date of Sample	Comment
Sulfate	ppm	none	none	19.2	n/a	2021	Erosion of natural deposits
Chloroform	ppb	none	none	14.0	n/a	2021	By-product of drinking water disinfection
Bromodichloromethane	ppb	none	none	5.1	n/a	2021	By-product of drinking water disinfection
MTBE - finished water	ppb	none	none	<5.0	n/a	2021	Gasoline additive
Dibromochloromethane	ppb	none	none	0.8	n/a	2021	By-product of drinking water disinfection
Sodium***	ppm	none	none	19.1	19.1	2021	Erosion of natural deposits

***Drinking water does not play a significant role in sodium exposure for most individuals. Those that are under treatment for sodium-sensitive hypertension should consult with their health care provider regarding sodium levels in their drinking water supply and the advisability of using an alternative water source or point-of-use treatment to reduce the sodium. For individuals on a very low sodium diet (500 mg/day), EPA recommends that drinking-water sodium not exceed 20 mg/L. The World Health Organization has established a drinking water guideline of 200 mg of sodium/L on the basis of esthetic considerations (i.e., taste).

Unregulated Contaminant Monitoring Rule 4 (UCMR4)

Contaminant	Units	MCL	Level Detected	Range	Violation	Date of Sample	Typical Source of Contamination
Total HAA5	ppb	NA	14.131	9.15 – 24.03	No	2019	By-product of drinking water disinfection
Total HAA6Br	ppb	NA	2.774	0.878 – 5.564	No	2019	By-product of drinking water disinfection
Total HAA9	ppb	NA	16.771	10.028 – 26.93	No	2019	By-product of drinking water disinfection
Manganese	ppb	NA	8.265	5.83 – 10.70	No	2019	Naturally present in the environment

Unregulated Contaminants

In calendar year 2019 the City of Colonial Heights participated in the fourth phase of the EPA’s required monitoring program. The purpose of the UCMR4 (Unregulated Contaminant Monitoring Rule) is to provide data to the EPA for decisions concerning whether or not to regulate these contaminants in the future. The above table shows the results of the UCMR4: UCMR4 Unregulated Contaminants Units = ug/L (ppb) Results (Average) Range.

Unit Descriptions	
Term	Definition
ppm	ppm: parts per million, or milligrams per liter (mg/L)
ppb	ppb: parts per billion, or micrograms per liter (µg/L)
pCi/L	pCi/L: picocuries per liter, a measure of radioactivity
positive samples/month	positive samples/month: Number of samples taken monthly that were found to be positive
NTU	NTU: nephelometric turbidity units, the measure of turbidity in water
NA	NA: not applicable
ND	ND: Not detected

Important Drinking Water Definitions	
Term	Definition
MCLG	MCLG: Maximum Contaminant Level Goal: 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.
MCL	MCL: Maximum Contaminant Level: 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.
TT	TT: Treatment Technique: A required process intended to reduce the level of a contaminant in drinking water.
AL	AL: Action Level: The concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow.
MRDLG	MRDLG: Maximum residual disinfectant level goal. 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 contaminants.
MRDL	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.

NOTES

* Thirty (30) samples for lead and copper were tested in 2020. One (1) of the thirty (30) samples tested reached or exceeded the recommended action level for lead and zero samples (0) for copper.

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

± *Cryptosporidium* is a microbial pathogen found in surface water throughout the U.S. Although filtration removes *Cryptosporidium*, the most commonly-used filtration methods can not guarantee 100% removal. Our monitoring indicates the presence of these organisms in our source water and/or finished water. Current test methods do not allow us to determine if the organisms are dead or if they are capable of causing disease. Ingestion of *Cryptosporidium* may cause cryptosporidiosis, an abdominal infection. Symptoms of infection include nausea, diarrhea, and abdominal cramps. Most healthy individuals can overcome the disease within a few weeks. However, immuno-compromised people, infants and small children, and the elderly are all at greater risk of developing life-threatening illness. We encourage immuno-compromised individuals to consult their doctor regarding appropriate precautions to take to avoid infection. *Cryptosporidium* must be ingested to cause disease, and it may be spread through means other than drinking water.

E. coli: A system is in compliance with the MCL for *E. coli* for samples unless any of the conditions identified in parts 1 through 4 occur.

1. The system has an *E. coli*-positive repeat sample following a total coliform positive routine sample.
2. The system has a total coliform positive repeat sample following an *E. coli*-positive routine sample.
3. The system fails to take all required repeat samples following an *E. coli*-positive routine sample.
4. The system fails to test for *E. coli* when any repeat sample tests positive for total coliform.