

Freedom District 2021 Drinking Water Quality Report



Important Information about your Drinking Water

The Bureau of Utilities is pleased to present to you the Annual Water Quality Report for 2021. This report is designed to inform you about the water quality and services we deliver to you every day. Maryland Environmental Service (MES), an Agency of the State of Maryland, provides operational support and prepared this report on behalf of Carroll County and the Freedom District water treatment plant.

The Environmental Protection Agency (EPA) regulates Public Water Systems and the contaminants found in water through the implementation of the Safe Drinking Water Act (SDWA). The SDWA sets regulations and guidelines for how public water systems operate and identifies several hundred drinking water contaminants, establishes monitoring frequencies and limitations. The Maryland Department of the Environment (MDE) is responsible for the enforcement of the SDWA and routinely complete Sanitary Surveys as part of their ongoing inspection and monitoring program. Carroll County provides safe dependable operations of the water system and is dedicated to consistently providing high quality drinking water that meets or exceeds the SDWA standards.

If you have any questions about this report or have questions concerning your water utility, please contact Andrew Watcher, Chief Carroll County Bureau of Utilities 225 North Center Street, Room 218, Westminster, MD 21157
Phone 410-386-2164

Public Meeting Information:

For the opportunity to ask more questions or participate in decisions that may affect your drinking water quality, the Carroll County Commissioners meet regularly and the weekly agenda is available at: <https://www.carrollcountymd.gov/government/commissioners/board-of-carroll-county-commissioners-weekly-agenda/>

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How Water is Treated:

Raw water is pumped from Liberty Reservoir via intake lines located in the reservoir which then travels into Freedom District system #1's dissolved air flotation clarifier. A coagulant is added causing small particles and other suspended matter to attach to one another for easy removal. This clarified water enters a channel which feeds the Membrane Ultra filters before entering the clearwell. The water is then chlorinated for disinfection and fluoridated for dental protection. Caustic soda is used to raise pH making the water less aggressive to pipes and fixtures. Plant #1 also has the potential to remove various minerals and organic compounds that are present in the reservoir at various times of the year. A corrosion inhibitor, poly orthophosphate, is added just before the treated water enters the distribution system. In addition to the Freedom District surface water system #1, ground water is supplied from one well in the Boulder Gineiss Wissahickon formation. This well is called the Fairhaven system #2 and it's water is chlorinated for disinfection and fluoridated for dental protection before it enters the distribution system.

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 microbial contaminants are available from the **Safe Drinking Water Hotline (1-800-426-4791)**.

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Definitions:

Action Level - 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.

Mrem - Millirem roentgen equivalent in man. A measure of radiation dose.

pCi/l - Picocuries per liter. A measure of radiation.

ppb - Parts per billion or micrograms per liter.

ppm - Parts per million or milligrams per liter.

ppt - Parts per trillion or nanograms per liter.

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

Turbidity - Relates to a condition where suspended particles are present in the water. Turbidity measurements are a way to describe the level of “cloudiness” of the water.

Sources of Drinking Water:

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.

The Maryland Department of the Environment has performed an assessment of the source water. A copy of the assessment is available by calling or writing the Bureau of Utilities, Carroll County Government, 225 North Center Street, Room 218, Westminster MD 21157, 410-386-2164

The table on the following page lists all the drinking water contaminants that were detected during the 2021 calendar year. The presence of these compounds in the water does not necessarily indicate that the water poses a health risk. Unless otherwise noted, the data presented in the table is from testing done January 1 – December 31, 2021.

The State requires us to monitor for certain contaminants less than once per year because the concentrations of these contaminants are not expected to vary significantly from year to year.

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Contaminant	Highest Level Allowed (EPA's MCL)	Highest Level Detected	Ideal Goal (EPA's MCLG)
Regulated at the Treatment Plant (Freedom District Plant 01)			
	Action Level	Highest Level	Ideal Goal
Gross Beta (2017 Testing)	50 pCi/l*	6.5 pCi/l**	0.0 pCi/l
Typical Source of Contamination: Erosion of natural deposits			
*EPA considers 50 pCi/L to be the level of concern for beta particles. The MCL is 4 mrem/year			
** Because the beta particle results were below 50 pCi/l, no testing for individual beta particle constituents was required			
Combined Radium (226 & 228) (2017 Testing)	5 pCi/l	1.9 pCi/l	n/a
Typical Source of Contamination: Erosion of natural deposits			
Gross Alpha (2017 Testing)	15 pCi/l	8.6 pCi/l*	0.0 pCi/l
Typical Source of Contamination: Erosion of natural deposits			
* Average of Results			
Uranium (2015 Testing)	30 pCi/l	4 pCi/l	0.0 pCi/l
Typical Source of Contamination: Erosion of natural deposits			
Nitrate	10 ppm	1.60 ppm	10 ppm
Typical Source of Contamination: Runoff from fertilizer use; erosion			
		Range (1.37 - 1.60 ppm)	
Fluoride	4.0 ppm	0.74 ppm	4 ppm
Typical Source of Contamination: Added for dental protection			
		Range (0.58 - 0.74 ppm)	
Barium (2021 Testing)	2000 ppb	21.0 ppb	2000 ppb
Typical Source of Contamination: Discharge of metal refineries, erosion of natural deposits.			
		Range (0 - 21.0 ppm)	
Turbidity (Continuously Tested)	0.3 ntu TT	0.21 ntu	0 ntu
Typical Source of Contamination: Discharge from metal refineries, erosion of natural deposits.			
		Range (0.05 - 0.21)	
Turbidity cannot exceed 1.0 NTU and must be less than or equal to 0.3 NTU in at least 95% of the measurements.			
Regulated in the Distribution System			
	Action Level	Highest Level	Ideal Goal
Chlorine (Water additive used to control microbes)	4 ppm	1.07 ppm*	4 ppm
* Annual rolling average			
		Range (1.01 - 1.07 ppm)	
Total Trihalomethanes (TTHM)	80 ppb	66 ppb*	n/a
(Range 14.6 ppb - 107.3 ppb)			
*Locational Rolling Annual Average			
Typical Source of Contamination: By-product of drinking water disinfection			
Haloacetic Acids (HAA5)	60 ppb	35 ppb*	n/a
(Range 8.8 ppb - 59.7 ppb)			
*Locational Rolling Annual Average			
Typical Source of Contamination: By-product of drinking water disinfection			
Regulated in the Distribution System			
	Action Level	90th Percentile	Ideal Goal
Copper (2020 Testing)	1300 ppb	130 ppb	1300 ppb
Typical Source of Contaminant: Corrosion of household plumbing			
Lead (2020 Testing)	15 ppb	0	0.0 ppb
Typical Source of Contaminant: Corrosion of household plumbing			
Regulated at the Treatment Plant (Fairhaven Plant 02)*			
* Fairhaven Plant 02 was offline during 2021, results listed are the most recently tested			
Nitrate (2019 Testing)	10 ppm	1.5 ppm	10 ppm
Typical Source of Contamination: Runoff from fertilizer use; erosion			
Fluoride (2018 Testing)	4.0 ppm	0.738 ppm	4 ppm
Typical Source of Contamination: Added for dental protection			
Barium (2018 Testing)	2000 ppb	5.6 ppb	2000 ppb
Typical Source of Contamination: Discharge from metal refineries, erosion of natural deposits.			
Arsenic (2018 Testing)	10 ppb	1.1 ppb	0 ppb
Typical Source of Contamination: Discharge from metal refineries, erosion of natural deposits.			
Regulated in the Distribution System			
	MCL	Positive Results	Ideal Goal
Total Coliform	1	1*	0
Source: Naturally present in the environment			
*Highest number of positive results in any month. MCL was not exceeded in 2021. Follow-up samples at the same location and additional surrounding areas were absent. No further positive results occurred in 2021.			

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Total Organic Carbon (TOC)

The percentage of Total Organic Carbon (TOC) removal was measured each quarter and the system met all TOC removal requirements. During 2021 the minimum required TOC removal rate was between 0% to 50%. The average removal rate during 2021 was 33%.

Lead Prevention

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 Freedom District 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 drinking 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 EPA Safe Drinking Water Hotline at 1-800-426-4791** or at <http://www.epa.gov/safewater/lead>.

Contaminants that may be Present in Source Water

Microbial contaminants, such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife. Pesticides and Herbicides, which may come from a variety of sources such as agriculture, urban stormwater runoff, and residential uses. 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. 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.

Water Security is Everyone's Responsibility

Water system security continues to be an enormously important issue. If you notice suspicious activities in or around local water utilities, such as persons cutting or climbing facility fencing, loitering, tampering with equipment or other similar activities, please contact your local law enforcement agency immediately by dialing 911.

In order to ensure that tap water is safe to drink, EPA prescribes regulations which limit the amount of certain compounds in water provided by public water systems. We treat our water according to EPA's regulations. Food and Drug Administration regulations establish limits for contaminants in bottled water which must provide the same protection for public health.

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Special Points of Interest:

The water at the Freedom District is tested for over 120 different compounds. Drinking Water, including bottled water, may reasonably be expected to contain at least small amounts of some compounds. The presence of these compounds 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's) Safe Drinking Water Act Hotline (1-800 -426-4791)**.

Polyfluoroalkyl Substances

PFAS – short for per- and polyfluoroalkyl substances – refers to a large group of more than 4,000 human-made chemicals that have been used since the 1940s in a range of products, including stain- and water-resistant fabrics and carpeting, cleaning products, paints, cookware, food packaging and fire-fighting foams. These uses of PFAS have led to PFAS entering our environment, where they have been measured by several states in soil, surface water, groundwater and seafood. Some PFAS can last a long time in the environment and in the human body and can accumulate in the food chain.

Currently, there are no federal regulations (i.e. Maximum Contaminant Levels (MCLs)) for PFAS in drinking water. However, the U.S. Environmental Protection Agency (EPA) has issued a Health Advisory Level (HAL) of 70 parts per trillion (ppt) for the sum of PFOA and PFOS concentrations in drinking water. While not an enforceable regulatory standard, when followed, the EPA HAL does provide drinking water customers, even the most sensitive populations, with a margin of protection from lifetime exposure to PFOA and PFOS in drinking water. Beginning in 2020, the Maryland Department of the Environment (MDE) initiated a PFAS monitoring program. *The combined PFOA and PFAS concentration from samples taken from your water system showed no detection or 0 ppt.* MDE anticipates that EPA will establish an MCL for PFOA and PFOS in the near future. This would entail additional monitoring. Additional information about PFAS can be found on the MDE website: mde.maryland.gov"

Water Conservation

Did you know that the average U.S. household uses approximately 400 gallons of water per day or 100 gallons per person per day? Luckily, there are many low-cost and no-cost ways to conserve water. Small changes can make a big difference—try one today and soon it will become second nature

- ◆ Check for water leaks by the reading your water meter before and after a two hour period when no water is being used in your home. If the reading changes then there is probably a leak in your home.
- ◆ Take a shower! Filling up a bathtub can use up to 70 gallons of water while a shower generally uses 10 to 25 gallons. Taking shorter showers saves even more water.
- ◆ Make sure your washing machine and dishwasher are fully loaded before running.
- ◆ WaterSense labeled fixtures can reduce your water use by 30 percent or more versus standard flow fixtures. Visit www.epa.gov/watersense for more information on water efficiency products and methods.

Source: <http://www.epa.gov/watersense> & <http://eartheasy.com>