

2023

Annual Drinking Water Quality Report



Howard County
Department of Public Works
PSWID 0130002

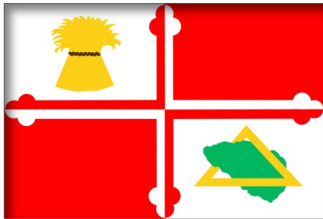


Message from the County Executive



Calvin Ball

Howard County
Executive



Howard County Drinking Water

Clean, safe water is extremely important and should not be taken for granted. Howard County and the Bureau of Utilities remain diligent and adamant about protecting the reliability and quality of our water. When you go to the tap, it should work and you should feel confident that it is healthy for your family.

We issue this Consumer Confidence Report to provide detailed data and information about the quality of the water, where it comes from, and our efforts to ensure that it meets and exceeds environmental standards. We hope you will take the time to learn the facts and trust in our efforts to provide a vital resource for all - water.

None of this would be possible without our dedicated staff. Whether they are monitoring a water facility or fixing a broken pipe in the street, they are there to ensure uninterrupted service at any time, in any conditions. Thanks to them the faucet, shower or washing machine has water every time, every day, every load.

Sincerely,

Calvin Ball
Howard County Executive

Contacts



Office of County Executive	410-313-2013
Public Information	410-313-2022
Public Works	410-313-4400
Water-Sewer Billing	410-313-2058
Bureau of Utilities	410-313-4900
Water Quality	410-313-4997



Websites



Howard County.....	https://www.howardcountymd.gov/
EPA.....	https://www.epa.gov/ground-water-and-drinking-water
Maryland Department of the Environment.....	https://mde.maryland.gov/programs/water/tmdl/waterqualitystandards/ pages/index.aspx

Water is Life

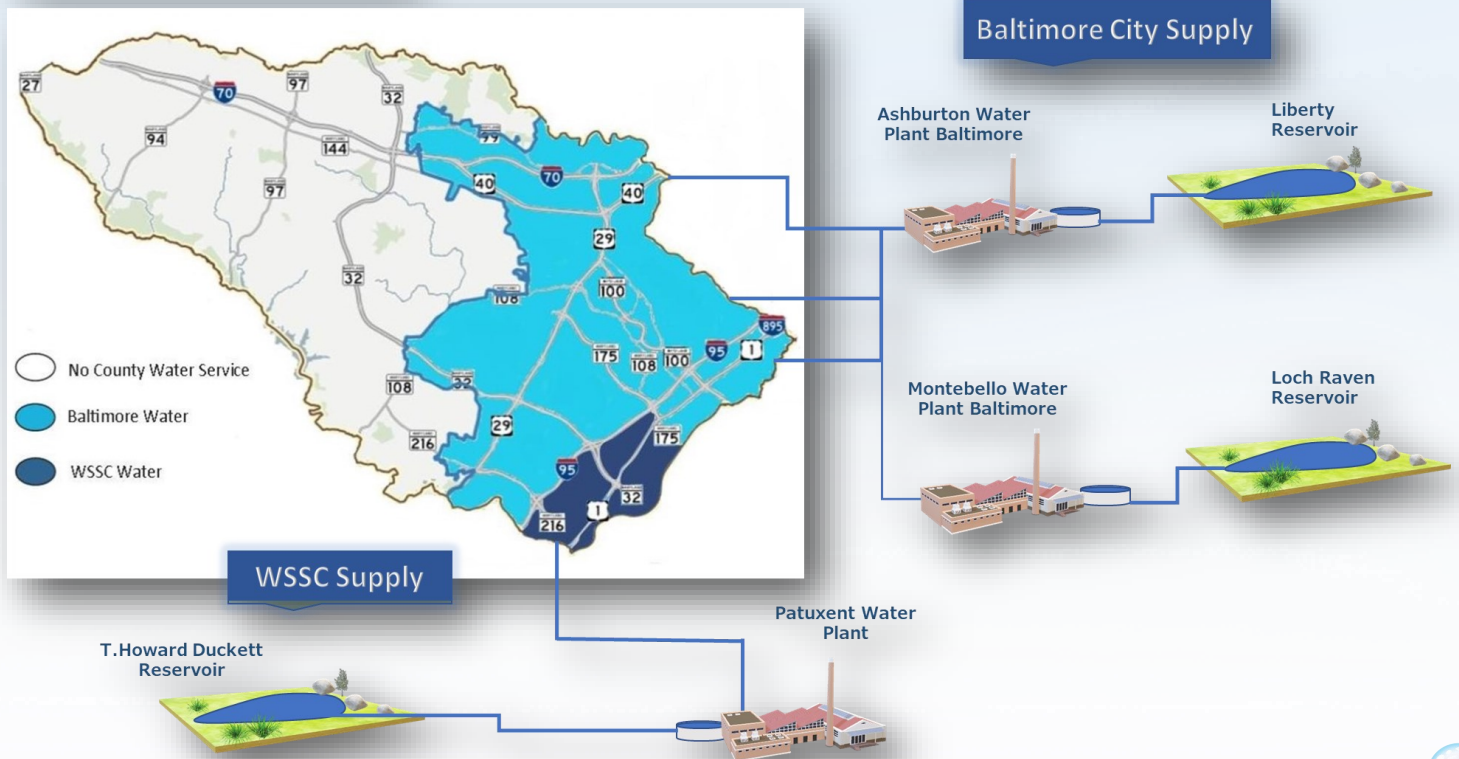


Howard County is pleased to present to you this year's Water Quality Report. This report is designed to inform you about the quality water and services we deliver to you every day. Our constant goal is to provide you with a safe and dependable supply of drinking water. We want you to understand the efforts our water suppliers make to continually improve the water treatment process and protect our water resources. Our water sources are surface water from the Liberty Reservoir on the North Branch of the Patapsco River and the Loch Raven Reservoir on the mainstream of the Gunpowder Falls River, both purchased from Baltimore City, and surface water from the Patuxent River purchased from the Washington Suburban Sanitary Commission (WSSC).

Where Your Water Comes From

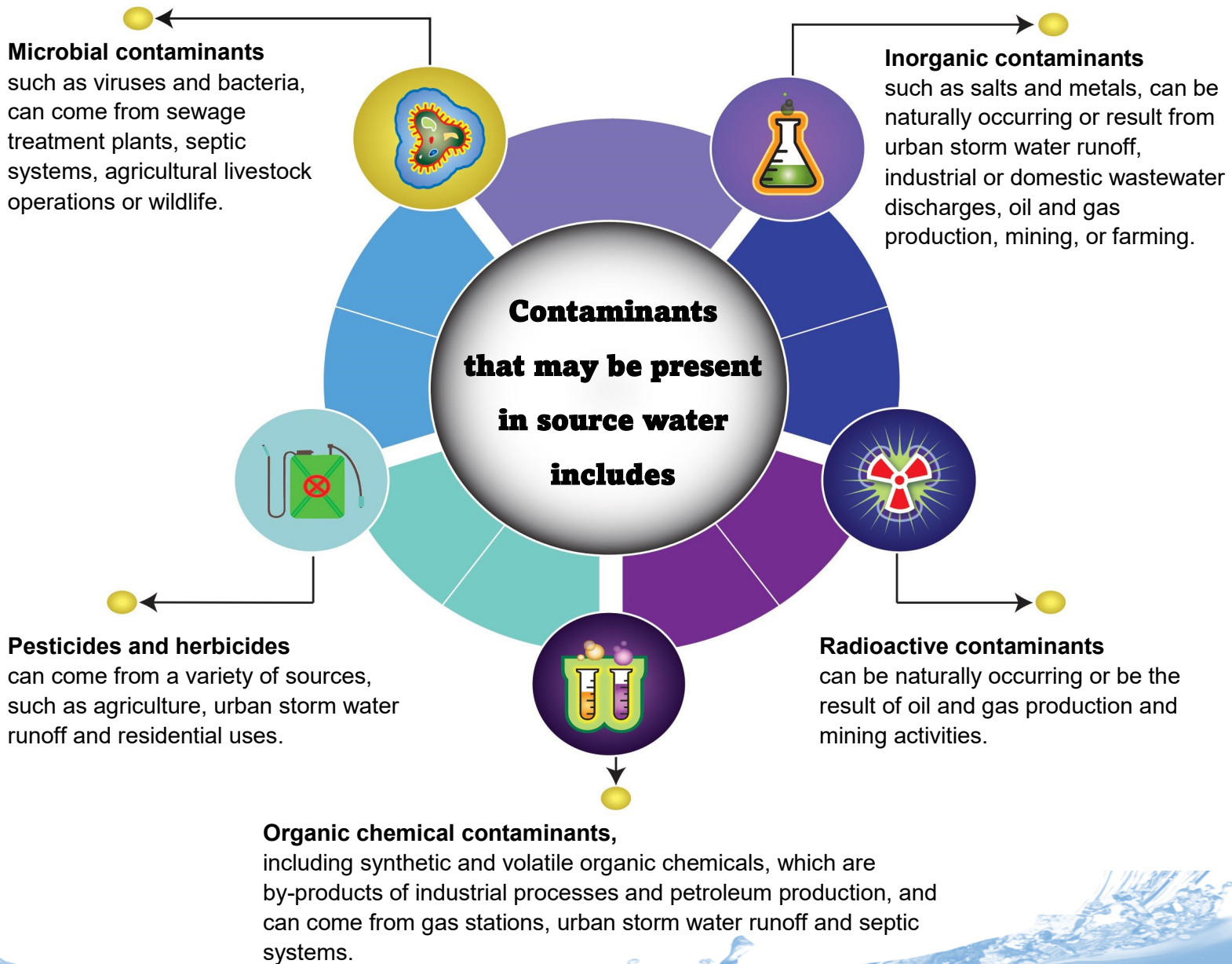


As a "Consecutive Water System," Howard County purchases water from Baltimore City and WSSC. If you live in the North Laurel area of Howard County, east of Interstate 95 and south of Patuxent Range Road, your water originates from WSSC in Laurel. If you live anywhere else in Howard County and are connected to the public water supply, your water originates from Baltimore City. Water quality analyses are performed at Howard County, Baltimore City and WSSC laboratories. The table inside this brochure shows the results of monitoring for the period of January 1, 2022 to December 31, 2022.



WHY WATER IS TESTED

All sources of drinking water, whether sourced from above ground or below, are subject to potential contamination by substances that are naturally occurring or manmade. These substances or contaminants can be microbes, inorganic or organic chemicals, and radioactive substances, resulting from the presence of animals or from human activity. All drinking water, including bottled drinking water, may be reasonably expected to contain at least small amounts of these contaminants. However, the presence of contaminants does not necessarily indicate that the water poses a health risk.



To ensure that tap water is safe to drink, the US Environmental Protection Agency (EPA) sets regulations that limit the number of certain contaminants in water provided by public water systems. Additionally, the US Food and Drug Administration (FDA) regulations set limits for contaminants in bottled water that must provide the same protection for public health. The Maryland Department of the Environment (MDE) has also completed a Source Water Assessment of the water supplies that serve Baltimore City and WSSC. The Source Water Assessment Program may be viewed on MDE's website https://mde.maryland.gov/programs/water/water_supply/source_water_assessment_program/pages/factsheet.aspx. For more information about drinking water contaminants and potential health effects, contact the EPA's Safe Drinking Water Hotline at 1-800-426-4791

Important Health Information PFAS / Cryptosporidium

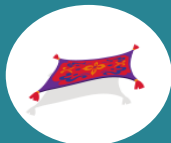


PFAS – or per- and polyfluoroalkyl substances – refers to a large group of more than 4,000 human-made chemicals that have been used since the 1940s in a range of products, including



Stain- and water-resistant

Carpet



Cleaning products

Paint



Cookware

Food packaging



Fire-fighting foam

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.



Beginning in 2020, MDE initiated a PFAS monitoring program. PFOA and PFOS are two of the most prevalent PFAS compounds. Our water was tested for PFAS in 2022. Please see the table below for the levels of PFAS that were detected. In March 2023, EPA announced proposed Maximum Contaminant Levels (MCLs) of 4 ppt for PFOA and 4 ppt for PFOS, and a Group Hazard Index for four additional PFAS compounds. Future regulations would require additional monitoring as well as certain actions for systems above the MCLs. EPA will publish the final MCLs and requirements by the end of 2023 or beginning of 2024. Additional information about PFAS can be found on MDE's website: mde.maryland.gov/PublicHealth/Pages/PFAS-Landing-Page.aspx.

PFAS (PER- AND POLYFLUOROALKYL SUBSTANCES)

Contaminant	Proposed MCL	Proposed MCLG	Baltimore Ashburton Plant	Baltimore Montebello Plant	WSSC Patuxent Plant	Violation Baltimore/WSSC	Source of Contamination
			Levels Detected	Levels Detected	Levels Detected		
PFOA ppt	4ppt	0	2.65	1.94	2.4	No	Man-made chemicals in a range of products
PFOS ppt	4ppt	0	3.29	1.94	2.6	No	Man-made chemicals in a range of products
PFBS ppt	Used to Calculate Hazard Index	Used to Calculate Hazard Index	2.28	1.81	<2.0	No	Man-made chemicals in a range of products
PFxS ppt	Used to Calculate Hazard Index	Used to Calculate Hazard Index	1.55	1.25	<2.0	No	Man-made chemicals in a range of products
PFNA ppt	Used to Calculate Hazard Index	Used to Calculate Hazard Index	<1.5	<1.5	<2.0	No	Man-made chemicals in a range of products
GenX/HFPO-DA	Used to Calculate Hazard Index	Used to Calculate Hazard Index	<1.0	<1.0	<2.0	No	Man-made chemicals in a range of products
* PFBS + PFHxS + PFNA + HFPO-DA	1.0 Hazard Index	1.0 Hazard Index	0.17	0.14		No	Man-made chemicals in a range of products

* Hazard Index (HI)

Hazard Index is used to evaluate the potential health risk from exposure to mixtures of chemicals. The chemicals of interest are: PFNA, PFHxS, PFBS and HFPO-DA ("Gen X chemicals"). The Hazard Index (HI) considers the toxicities of PFNA, PFHxS, PFBS and Gen X chemicals to determine if the combined levels pose a potential risk and require action from the Public Water System (PWS) based on a running annual average. A Hazard Index (HI) greater than 1.0 would be a violation of the proposed HI MCL. Currently, there is no required action for the hazard index until EPA finalizes the regulation.

$$\text{Equation Hazard Index} = \left(\frac{[\text{GenXwater}]}{[10 \text{ ppt}]} \right) + \left(\frac{[\text{PFBSwater}]}{[2000 \text{ ppt}]} \right) + \left(\frac{[\text{PFNAwater}]}{[10 \text{ ppt}]} \right) + \left(\frac{[\text{PFHxSwater}]}{[9.0 \text{ ppt}]} \right)$$

Cryptosporidium

Cryptosporidium (crip-toe-spor-ID-ium) is a protozoan, single-celled parasite that lives in the intestines of animals and people. This organism is found in some surface water (lakes, reservoirs, rivers, etc.) and ground-water. Infection of healthy individuals by this organism can cause a gastrointestinal illness referred to as cryptosporidiosis, which may produce symptoms including diarrhea, headache, abdominal cramps, nausea, vomiting and low-grade fever. The symptoms usually last one to two weeks. However, for immuno-compromised people, the infection can continue and last for several months and a prolonged infection can prove fatal for this population as there are no effective medical treatments. Human transmission routes include ingestion of contaminated foods or drinking water through direct contact with fecal matter.

Baltimore City and WSSC monitor their raw water sources for the presence of Cryptosporidium using the latest available approved analytical methods. Disinfection and filtration are highly effective in removing Cryptosporidium, as is the use of ultraviolet (UV) as a secondary disinfection method. Baltimore City and WSSC's current monitoring results indicate that their water sources are not affected by Cryptosporidium.



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 at 1-800-426-4791.

Fun Fact about Water Towers

A water tower is a tall, elevated structure that is used to store and distribute water to a local community or area. Water towers typically consist of a large, cylindrical tank located at a specific elevation. The elevated height of the water tower is important for maintaining a consistent water pressure throughout the distribution system for potable water, even when demand fluctuates or when there are disruptions to the water supply. Additionally, water towers can also help regulate the flow of water in the system for fire protection.

Fun Fact

Did you know that Bethany Tank in Ellicott City is the tallest water tower in Howard County. Bethany Tank reaches 185 feet, seven feet taller than Busch Garden's **Pantheon** roller coaster.



FOR MORE INFORMATION

We want our valued customers to be informed about their water quality. If you have any questions about this report or your water quality, please contact Howard County's Bureau of Utilities at 410-313-4900.

Employees at our Bureau of Utilities work around the clock to provide top quality water to every tap. We ask that all our customers help us protect our water sources, which are the heart of our community, our way of life and our children's future. If you want to learn more about water quality and Maryland tributary, visit <https://mde.maryland.gov/programs/water/Pages/index.aspx>



definition terms and abbreviations

<p>Parts per million (ppm) or Milligrams per liter (mg/l)</p>	<p>One part per million corresponds to one minute in two years or a single penny in \$10,000.</p>	<p>Non-Detects (ND)</p>	<p>Laboratory analysis indicates that the contaminant is not detectable by the analytical instrument used.</p>
<p>Parts per billion (ppb) or Micrograms per liter (ug/l)</p>	<p>One part per billion corresponds to one minute in 2,000 years, or a single penny in \$10,000,000.</p>	<p>Locational running annual average (LRAA)</p>	<p>The average of analytical results for samples taken at a particular monitoring location during the previous four calendar quarters.</p>
<p>Parts per trillion (ppt) or Nanograms per liter</p>	<p>One part per trillion corresponds to one minute in 2,000,000 years, or a single penny in \$10,000,000,000.</p>	<p>Picocuries per liter (pCi/L)</p>	<p>Picocuries per liter is a measure of the radioactivity in water.</p>
<p>Parts per quadrillion (ppq) or Picograms per liter (picograms/l)</p>	<p>One part per quadrillion corresponds to one minute in 2,000,000,000 years or one penny in \$10,000,000,000,000.</p>	<p>Millirems per year (mrem/yr)</p>	<p>Measure of radiation absorbed by the body.</p>
<p>Nephelometric Turbidity Unit (NTU)</p>	<p>Nephelometric turbidity unit is a measure of the clarity of water. Turbidity in excess of 5 NTU is just noticeable to the average person.</p>	<p>Variances & Exemptions (V&E)</p>	<p>State or EPA permission not to meet an MCL or a treatment technique under certain conditions.</p>
<p>Maximum Contaminant Level Goal</p>	<p>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.</p>	<p>PFAS compounds</p>	<p>perfluorooctane sulfonic acid (PFOS); perfluorooctanoic acid (PFOA); perfluorohexane sulfonic acid (PFHxS); perfluorononanoic acid (PFNA); GenX chemicals (hexafluoropropylene oxide (HFPO) dimer acid); and perfluorobutane sulfonic acid (PFBS)</p>
<p>Total Coliform E.coli</p>	<p>Indicator bacteria used to determine if contamination has occurred in a drinking water system.</p>	<p>Million Fibers per Liter (MFL)</p>	<p>Million fibers per liter is a measure of the presence of asbestos fibers that are longer than 10 micrometers.</p>
<p>Maximum Contaminant Level</p>	<p>The "Maximum Contaminant Level" (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.</p>	<p>Treatment Technique (TT)</p>	<p>A treatment technique is a required process intended to reduce the level of a contaminant in drinking water.</p>

LEAD AND COPPER TESTING - HOWARD COUNTY

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. While the County's Bureau of Utilities is responsible for providing high quality drinking water and removing lead pipes, it cannot control the variety of materials used in plumbing components in your home. You share the responsibility for protecting yourself and your family from the lead in your home plumbing. You can take responsibility by identifying and removing lead materials within your home plumbing and taking steps to reduce your family's risk. Before drinking tap water, flush your pipes for several minutes by running your tap, taking a shower, doing laundry or a load of dishes. You can also use a filter certified by an American National Standards Institute accredited certifier to reduce lead in drinking water. If you are concerned about lead in your water and wish to have your water tested, contact the Bureau of Utilities at 410-313-4900. Information on lead in drinking water, testing methods and steps you can take to minimize exposure is available at <http://www.epa.gov/safewater/lead>.

Contaminant	Action Level	90th Percentile Value	Source of Contamination
Lead	15 ppb	3 ppb	Corrosion of house plumbing systems
Copper	1.3 ppm	0.13 ppm	

When water leaves the water treatment plant, lead and copper levels are below

detection limits; however, lead and copper can be released when the water comes in contact with pipes and plumbing fixtures in homes and buildings that contain these elements. The EPA requires testing of the water distribution system for lead and copper at the tap. Howard County is required to sample 50 sites and of these 50 sites, 90 percent of the samples must have lead and copper levels less than the Action Level set by the EPA: 0.015 mg/l or 15 parts per billion for lead and 1.3 mg/l or 1.3 parts per million for copper. The results of the sampling in 2020 are shown above. Howard County's lead and copper levels are consistently below the Action Level set by the EPA. The next scheduled sampling for Lead and Copper will be performed during the summer of 2023. For more information about lead in drinking water: https://mde.maryland.gov/programs/water/water_supply/pages/pb_and_cu_rule.aspx

Water Quality 2022 Monitoring

Contaminant	Violation Y/N	Total Sample Collected	Total Coliform* Positive	E-coli** Positive	E-coli MCLG	Likely Source of Contamination
Microbiological Contaminants						
Routine Samples	N	1806	16	0	0	Naturally present in the environment
Repeat Sample	N	48	0	0	0	Human and animal fecal waste

*Coliform bacteria—naturally present in the environment **E-coli—pathogen from human and animal fecal waste

Volatile Organic Chemicals						
Substance	MCLG	MCL	Range - Levels Detected	Highest Level Detected	Violation	Major Sources
Chlorine	MRDDL = 4	MRDL = 4	0.4 - 0.5 ppm	0.5ppm	No	Water additive used to control microbes
HAA(5)	n/a	60ppb	20.1 - 55.5 ppb	36ppb	No	Byproduct of drinking water disinfection
Total THM's	n/a	80ppb	27 - 108.1 ppb	63ppb	No	Byproduct of drinking water disinfection

Violation Type	Violation Begin	Violation End	Violation Explanation
CCR	07/01/2022	2022	We failed to provide to you, our drinking water customers, an annual report that informs you about the quality of our drinking water and characterizes the risks from exposure to contaminants detected in our drinking water.

Unregulated Contaminant Monitoring Rule 4

Every five years, under the 1996 Amendments to the Safe Drinking Water Act (SDWA), the EPA issues a list of contaminants that could be present in the public water systems around the country. This is called the Unregulated Contaminant Monitoring Rule (UCMR). Last year, Howard County participated in the fourth round of the latest revision UCMR. Information from this study can help develop regulatory decisions for any contaminants that reach a unsafe level of exposure in the public drinking water supply.

Contaminant	Violation Y/N	Highest Level Detected	Range	MCLG	MCL	Source of Contamination
UCMR4 Detected Contaminants						
Manganese ug/L	N	0.72	ND — 1.7	n/a	n/a	Naturally present in the environment
HAA5 ug/L	N	22.98	5.3—54.17	n/a	n/a	By-product of drinking water disinfection
HAA6Br ug/L	N	17.74	4.37—55.29	n/a	n/a	By-product of drinking water disinfection
HAA9 ug/L	N	33.22	6.63—64.39	n/a	n/a	By-product of drinking water disinfection

Waivers

MDE has granted the City of Baltimore monitoring waivers for the following compounds: 2,3,7,8-TCDD (Dioxin), Endothall, Diquat, Glyphosphate, Asbestos and Cyanide.



TEST RESULTS – OUR SUPPLERS

Contaminant Units	Baltimore City Supply				WSSC Supply		MCLG	MCL	Likely Source of Contamination
	Ashburton Plant		Montebello Plant		Violation Y/N	Level Detected			
Radioactive Contaminants									
Beta/photon emitters pCi/l	—————→				N	4.9	0	50	Decay of natural and man-made deposits
Combined Radium pCi/l	N	1.6	0.2-1.6		N	Radium 228 1.2	0	50	Erosion of natural deposits
Inorganic Contaminants									
Arsenic ppb	N	<3	N	<3	N	ND	0	10	Erosion of natural deposits
Barium ppm	N	0.02	N	0.04	N	0.03	2	2	Discharge from drilling waste
Chlorine ppm	N	1.20	N	1.19	N	1.2	4	4	Water additive to disinfect supply
Fluoride ppm	N	0.86	N	1.00	N	0.7	4	4	Water additive that promotes strong teeth
Nitrate ppm	N	1.64	N	1.78	N	1.5	0	10	Runoff from fertilizer use; leaching from septic tank, sewage; erosion of natural deposits
Microbiological Contaminants									
Turbidity NTU	N	0.06	N	0.29	N	0.16	1.0	TT= Filtration	Soil runoff
Atrazine ppb	N	ND	N	0.31	N	ND	3	3	Runoff from herbicide use
Di(ethylhexyl) phthalate ppb	N	2.5	N	ND	N	ND	6	6	Man-made chemicals in a range of products
Additional Test Results - From Our Suppliers									
Antimony ppb	N	ND	N	ND	N	ND	6	6	Discharge from petroleum refineries; fire retardants; ceramics; electronics; solder
Chromium ppb	N	ND	N	ND	N	ND	100	100	Discharge from steel and pulp mills; erosion of natural deposits
Mercury ppb	N	ND	N	ND	N	ND	2	2	Erosion of natural deposits; discharge from refineries and factories; runoff from landfills; runoff from cropland

Additional Test Results - From Our Suppliers

Copper mg/l	N	ND	N	ND	N	ND	1.3	AL=1.3	Corrosion of household plumbing systems; erosion of natural deposits
Toluene ppb	N	ND	N	ND	N	ND	1000	1000	Discharge from petroleum factories
Lead ug/l	N	ND	N	ND	N	ND	0	AL=15	Corrosion of household plumbing systems; erosion of natural deposits

For a complete listing please visit <https://www.howardcountymd.gov/public-works/water-quality-report>

Having a fish aquarium is not just about adding beauty to your home or office, it's about creating a serene and captivating underwater world that offers relaxation, stress relief and a unique connection with nature. As you watch the graceful movements of the fish, listen to the calming sound of water and observe the vibrant colors of aquatic plants, you'll find yourself drawn into a mesmerizing and tranquil aquatic realm. The mesmerizing effect of an aquarium can help reduce stress, anxiety and even lower blood pressure. Here are some things you should know about your tap water that can help you start your aquarium.



Washington Suburban Sanitary Commission

Contaminant/ Units	Yearly Average	Maximum	Minimum
Alkalinity mg/L	76	104	37
Chlorides mg/L	54	310	24
Fluoride mg/L	0.7	0.8	0.6
Hardness mg/L	141	199	69
pH S.U.	7.4	7.6	7.2
Nitrate mg/L	1.1	1.8	0.4
Nitrite mg/L	n/d	n/d	n/d
Sulfate mg/L	47	73	31.0

Baltimore City Supply

Alkalinity mg/L	44	49	41
Chlorides mg/L	44	47	43
Fluoride mg/L	0.60	0.71	0.27
Hardness mg/L	80	84	76
pH S.U.	7.9	8.05	7.5
Nitrate mg/L	1.40	1.64	1.08
Nitrite mg/L	n/d	n/d	n/d
Sulfate mg/L	12.9	13.8	12.0

For a complete minerals listing please visit <https://www.howardcountymd.gov/public-works/water-quality-report>





Art Shapiro PE, PMP
Chief
Bureau of Utilities

A Note From Art Shapiro, Chief of The Bureau of Utilities

DEAR VALUED CUSTOMER,

Howard County residents, businesses and guests continue to enjoy the highest quality drinking water in the region. Our highly motivated and well-trained staff continuously monitor the County's water system and promptly respond to broken water mains and damaged service lines. At the Bureau of Utilities, our core responsibility is to proactively work each day to ensure critical water services are reliably provided 24/7. Our mission is to provide the highest quality of dependable drinking water to each of our valued customers. This is done in coordination with our regional water suppliers, the City of Baltimore and WSSC. The heightened national focus on the state of critical infrastructure is taken seriously by the County and our drinking water systems are expertly assessed for physical condition, proactively maintained to the highest standards and considered for efficient rehabilitation or replacement in our long-term capital improvement programming.

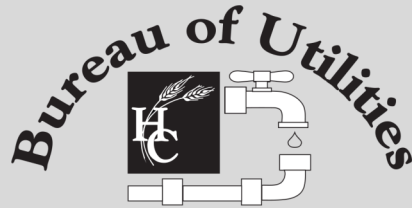
We hope you find this report informative and reassuring. If you have any questions or for more information, please do not hesitate to contact our Bureau of Utilities team at 410-313-4900 or visit our website: <https://www.howardcountymd.gov/Departments/Public-Works/Bureau-Of-Utilities>.

Faces of the Bureau of Utilities



Howard County Government

Department of Public Works Bureau of Utilities
8250 and 8270 Old Montgomery Road
Columbia, MD 21045



*DPW advances the quality of life for the community by
providing an exceptional level of public service*

