ANNUAL WATER QUALITY REPORT

Reporting Year 2022

Presented By

Anne Arundel County
Department of Public Works

PWS ID#: 002004, 0020008, 0020013, 0020017, 0020030, 0020044

County Executive Stuart Pittman's Message

I am proud to share Anne Arundel County's 2022 Consumer Confidence Report with you and let you know that the drinking water produced and delivered to your home is clean and safe for consumption. Providing high-quality drinking water to our communities is the number one goal of the dedicated professionals in the Department of Public Works (DPW) Bureau of Utilities, and this report provides you with important information on the thousands of water quality tests administered over the past year. We have continued our long-standing record of exceeding all federal standards for drinking water quality and safety, and we will continue to provide clean, safe, and reliable water to all who live, work, or visit Anne Arundel County.

How to Contact DPW:

Visit us online at www.DPWandYou.com.

24-Hour Emergency Hotline: (410) 222-8400

From South County: (410) 451-4118

Billing Office: (410) 222-1144

Customer Relations: (410) 222-7582

Edward Cope: 410-222-8114

General Information: (410) 222-7500

View this report online at

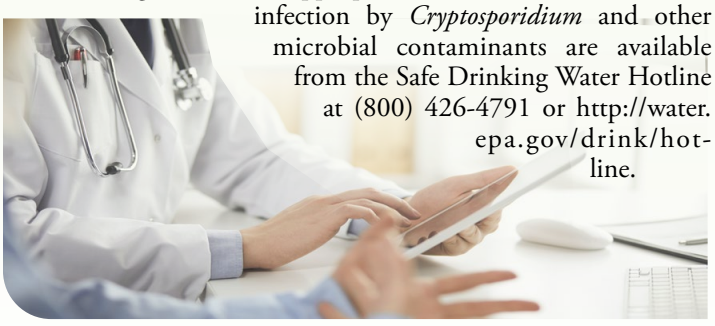
http://www.aacounty.org/departments/public-works/utilities/forms-and-publications/WaterQuality2022.pdf.

Lead in Home Plumbing

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. Anne Arundel County is responsible for providing high quality drinking water and removing lead pipes, but 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 Eddie Cope at 410-222-8114. 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.

Important Health Information

Some people may be more vulnerable to contaminants in drinking water than the general population. Immunocompromised 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 may be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. The U.S. EPA/CDC (Centers for Disease Control and Prevention) guidelines on appropriate means to lessen the risk of infection by *Cryptosporidium* and other microbial contaminants are available from the Safe Drinking Water Hotline at (800) 426-4791 or http://water.epa.gov/drink/hotline.



PFAS Monitoring Program

Per- and polyfluoroalkyl substances (PFAS) refer to a 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 firefighting foams. These uses 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 the human body and can accumulate in the food chain.

Beginning in 2020, MDE initiated a PFAS monitoring program. Perfluorooctanoic acid (PFOA) and perfluorooctanesulfonic acid (PFOS) are two of the most prevalent PFAS compounds. Neither of these substances was found above the laboratory detection limit in samples taken from our water system in 2022.

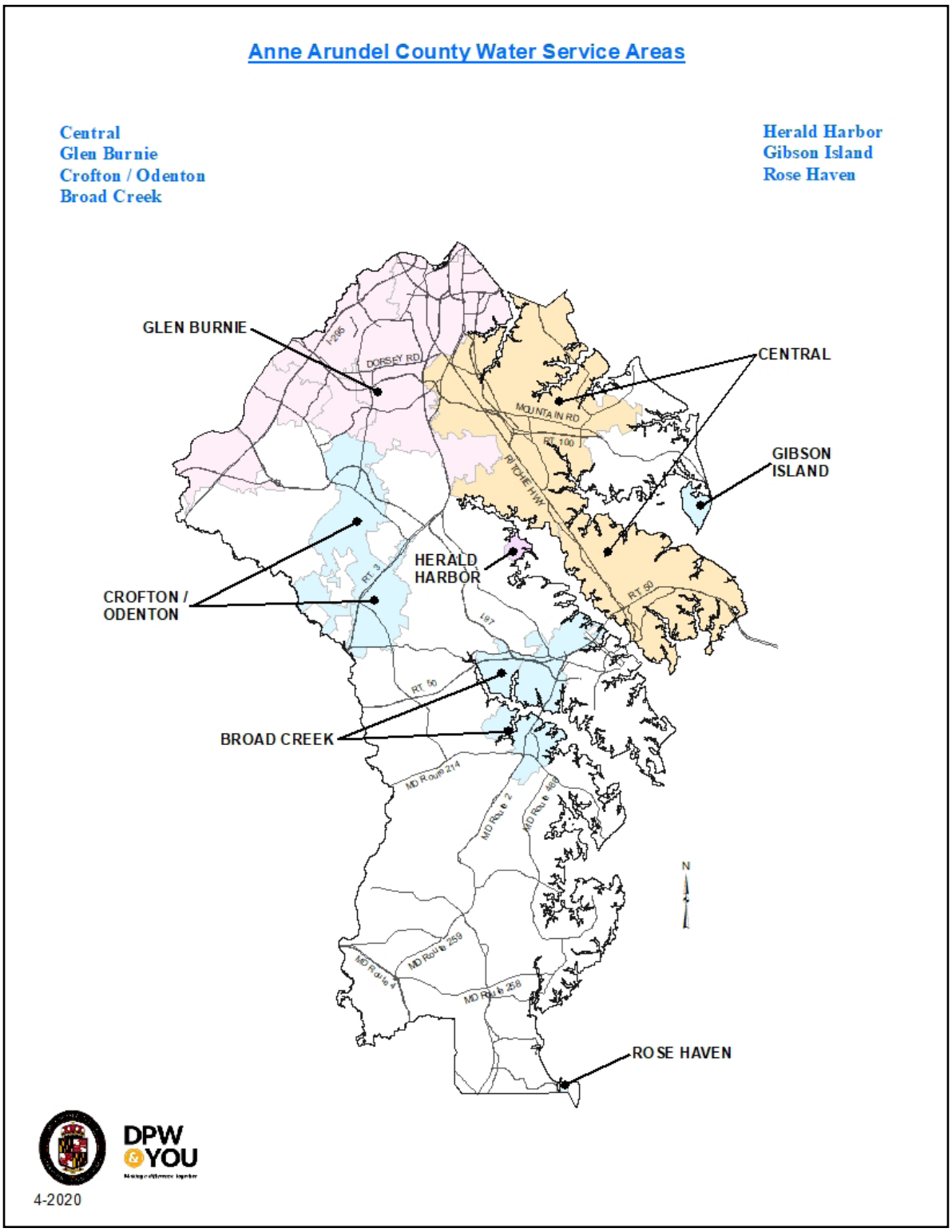
In March 2023, EPA announced proposed Maximum Contaminant Levels (MCLs) of 4 ppt for PFOA and 4 ppt for PFOS, and a Group Hazard Index for four additional PFAS compounds. Future regulations would require additional monitoring as well as certain actions for systems above the MCLs. EPA will publish the final MCLs and requirements by the end of 2023 or beginning of 2024. Additional information about PFAS can be found on the MDE website: mde.maryland.gov/PublicHealth/Pages/PFAS-Landing-Page.aspx.

Source Water Assessment

A source water assessment is a process for evaluating the vulnerability to contamination of the source of a public drinking water supply. The assessment does not address the treatment or distribution aspects of the water system, which are covered under separate provisions of the Safe Drinking Water Act. The Maryland Department of the Environment (MDE) is the lead agency in developing these assessments, which have been completed for all of the county's water systems. To obtain more information, contact MDE, Water Supply Division, at water.supply@maryland.gov.

Where Does My Water Come From?

Anne Arundel County DPW customers enjoy an abundant water supply from four deep aquifers. Our 12 water treatment facilities draw water from the Patapsco, Patuxent, and Aquia Aquifers. Combined, our treatment facilities provide roughly 12.6 billion gallons of clean drinking water every year.



Test Results

Our water is monitored for many different kinds of substances on a very strict sampling schedule, and the water we deliver must meet specific health standards. Here, we only show those substances that were detected in our water (a complete list of all our analytical results is available upon request). Remember that detecting a substance does not mean the water is unsafe to drink; our goal is to keep all detects below their respective maximum allowed levels. Anne Arundel County received a monitoring violation for the non-reporting of Inorganics for the Arnold, Gibson Island and Rose Haven treatment facilities. A total of 10 treatment facilities were tested on 7/13/22, results returned to the County on 7/22/22 and reports were submitted to MDE on 7/26/22, but MDE did not receive the results prior to the reporting deadline. The state recommends monitoring for certain substances less than once per year because the concentrations of these substances do not change frequently. In these cases, the most recent sample data are included, along with the year in which the sample was taken.

Anne Arundel County received violations for Phase II/V Metals Monitoring for the Glen Burnie/Broadneck (0020017) and Gibson Island (0020013) systems for the 2020-2022 period. These samples were collected on the raw water for these systems, to which samples should have been collected for the raw and finished water. The Phase II/V Metals have been collected on the finished water on March 23, 2023 in the Glen Burnie/Broadneck and Gibson Island systems, which satisfies the requirements for the Phase II/V Metals testing.

REGULATED SUBSTANCES

				Glen Burnie Zone		Central Zone		Crofton/Odenton Zone		Broad Creek Zone		Herald Harbor Zone		Gibson Island Zone		Rose Haven Zone			
SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	MCL [MRDL]	MCLG [MRDLG]	HIGHEST LEVEL	RANGE LOW-HIGH	HIGHEST LEVEL	RANGE LOW-HIGH	HIGHEST LEVEL	RANGE LOW-HIGH	HIGHEST LEVEL	RANGE LOW-HIGH	HIGHEST LEVEL	RANGE LOW-HIGH	HIGHEST LEVEL	RANGE LOW-HIGH	HIGHEST LEVEL	RANGE LOW-HIGH	VIO-LATION	TYPICAL SOURCE
Alpha Emitters (pCi/L)	2022	15	0	6	5.1–6	2.8	5.1–6.1	1.1[6]	1.1–1.1[6]	ND	NA	ND[2]	NA[2]	NA	NA	NA	NA	No	Erosion of natural deposits
Barium (ppm)	2022	2	2	0.02	0.01–0.02	0.03[2]	0.03–0.03[2]	0.02	0.02–0.02	0.02[3]	0.02–0.02[3]	ND[5]	NA[5]	0.01[3]	0.01–0.01[3]	0.07[3]	0.07–0.07[3]	No	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits
Beta/Photon Emitters (pCi/L)	2022	50	0	6.2	5.6–6.2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	No	Erosion of natural deposits
Cadmium (ppb)	2022	5	5	4.0	4.0–4.0	ND[1]	NA	ND[3]	NA	ND[4]	NA	ND[5]	NA[5]	ND[1]	NA	ND[1]	NA	No	Corrosion of galvanized pipes; Erosion of natural deposits; Discharge from metal refineries; Runoff from waste batteries and paints
Combined Radium (pCi/L)	2022	5	0	2.7	2.4–2.7	1.3	2.4–2.7	ND[1]	NA	NA	NA	0.6[1]	0.6–0.6[1]	0.3	0.3–0.3	ND[1]	NA	No	Erosion of natural deposits
Ethylbenzene (ppb)	2020	700	700	ND	NA	ND	NA	ND[5]	NA	ND	NA	NA	NA	NA	NA	0.5[2]	0.5–0.5[2]	No	Discharge from petroleum refineries
Fluoride (ppm)	2022	4	4	1.44	0.06–1.44	0.93	0.06–0.93	0.89	0.23–0.89	0.90	0.34–0.90	1.13	0.14–1.13	1.09	0.20–1.09	0.99	0.20–0.99	No	Erosion of natural deposits; Water additive which promotes strong teeth; Discharge from fertilizer and aluminum factories

REGULATED SUBSTANCES

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	MCL [MRDL]	MCLG [MRDLG]	Glen Burnie Zone HIGHEST LEVEL	Glen Burnie Zone RANGE LOW-HIGH	Central Zone HIGHEST LEVEL	Central Zone RANGE LOW-HIGH	Crofton/Odenton Zone HIGHEST LEVEL	Crofton/Odenton Zone RANGE LOW-HIGH	Broad Creek Zone HIGHEST LEVEL	Broad Creek Zone RANGE LOW-HIGH	Herald Harbor Zone HIGHEST LEVEL	Herald Harbor Zone RANGE LOW-HIGH	Gibson Island Zone HIGHEST LEVEL	Gibson Island Zone RANGE LOW-HIGH	Rose Haven Zone HIGHEST LEVEL	Rose Haven Zone RANGE LOW-HIGH	VIOLATION	TYPICAL SOURCE
Haloacetic Acids [HAAs]–Stage 2 (ppb)	2022	60	NA	1	1–1.7	NA	NA	ND	NA	ND	NA	ND	NA	ND	NA	13.1	13.1–13.1	No	By-product of drinking water disinfection
Nitrate (ppm)	2022	10	10	1.5	1.2–1.5	ND	NA	ND	NA	ND	NA	ND	NA	ND	NA	ND	NA	No	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits
TTHMs [total trihalomethanes] –Stage 2 (ppb)	2022	80	NA	11	2.5–15.8	NA	NA	ND	NA	5.6	5.6–5.6	1.7	1.7–1.7	3.9	2.1–3.9	27.9	27.9–27.9	No	By-product of drinking water disinfection
Xylenes (ppm)	2020	10	10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.6	0.6–0.6	No	Discharge from petroleum factories; Discharge from chemical factories

Tap water samples were collected for lead and copper analyses from sample sites throughout the community

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	AL	MCLG	Glen Burnie Zone AMOUNT DETECTED (90TH %ILE)	Glen Burnie Zone SITES ABOVE AL/ TOTAL SITES	Central Zone AMOUNT DETECTED (90TH %ILE)	Central Zone SITES ABOVE AL/ TOTAL SITES	Crofton/Odenton Zone AMOUNT DETECTED (90TH %ILE)	Crofton/Odenton Zone SITES ABOVE AL/ TOTAL SITES	Broad Creek Zone AMOUNT DETECTED (90TH %ILE)	Broad Creek Zone SITES ABOVE AL/ TOTAL SITES	Herald Harbor Zone AMOUNT DETECTED (90TH %ILE)	Herald Harbor Zone SITES ABOVE AL/ TOTAL SITES	Gibson Island Zone AMOUNT DETECTED (90TH %ILE)	Gibson Island Zone SITES ABOVE AL/ TOTAL SITES	Rose Haven Zone AMOUNT DETECTED (90TH %ILE)	Rose Haven Zone SITES ABOVE AL/ TOTAL SITES	VIOLATION	TYPICAL SOURCE
Copper (ppm)	2022	1.3	1.3	0.02	0/55	0.06[1]	0/55[1]	0.03	0/34	0.02	0/30	0.04	0/10	0.03	0/14	0.23[1]	0/10[1]	No	Corrosion of household plumbing systems; Erosion of natural deposits
Lead (ppb)	2022	15	0	ND	0/55	ND	0/55	ND	0/34	ND	0/30	ND	0/10	ND[3]	0/14[3]	ND[1]	0/10[1]	No	Lead service lines; Corrosion of household plumbing systems, including fittings and fixtures; Erosion of natural deposits

UNREGULATED SUBSTANCES

		Glen Burnie Zone		Central Zone		Crofton/Odenton Zone		Broad Creek Zone		Herald Harbor Zone		Gibson Island Zone		Rose Haven Zone		
SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	HIGHEST LEVEL	RANGE LOW-HIGH	HIGHEST LEVEL	RANGE LOW-HIGH	HIGHEST LEVEL	RANGE LOW-HIGH	HIGHEST LEVEL	RANGE LOW-HIGH	HIGHEST LEVEL	RANGE LOW-HIGH	HIGHEST LEVEL	RANGE LOW-HIGH	HIGHEST LEVEL	RANGE LOW-HIGH	TYPICAL SOURCE
Bromochloroacetic Acid (ppb)	2020	ND	NA	ND	NA	0.58[2]	ND–0.58[2]	ND	NA	NA	NA	NA	NA	NA	NA	NA
Chloroethane (ppb)	2022	1.5	1.4–1.5	ND	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	Discharge from factories and landfills
Chloromethane (ppb)	2022	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	1.4	1.4–1.4	NA	NA	NA
Dichloroacetic Acid (ppb)	2020	NA	NA	ND	NA	ND[3]	NA	0.4[3]	0.4–0.4[3]	NA	NA	NA	NA	NA	NA	NA
Manganese (ppb)	2020	17.0	1.91–17.0	3.3	ND–3.3	7.5[2]	1.4–7.5[2]	2.0[3]	2.0–2.0[3]	NA	NA	NA	NA	NA	NA	Naturally occurring
Nickel (ppb)	2019	15	5–15	22[2]	22–22[2]	12	12–12	ND	NA	1.0	1.0–1.0	ND	NA	ND	NA	Naturally occurring
Sodium (ppm)	2022	3.9	2.5–3.9	3.9	2.5–3.9	7.7	7.7–7.7	3.6	3.6–3.6	3.8	3.8–3.8	3.5[3]	3.5–3.5[3]	ND[3]	NA	Naturally occurring

[1] Sampled in 2022.
[2] Sampled in 2021.
[3] Sampled in 2020.
[4] Sampled in 2019.
[5] Sampled in 2018.
[6] Sampled in 2017.

Substances That Could Be in Water

To ensure that tap water is safe to drink, the U.S. EPA prescribes regulations limiting the amount of certain contaminants in water provided by public water systems. 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. The presence of these contaminants does not necessarily indicate that the water poses a health risk.

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, in some cases radioactive material, and substances resulting from the presence of animals or from human activity. Substances 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, or wildlife;

Inorganic Contaminants, such as salts and metals, which can be naturally occurring or may 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 may also come from gas stations, urban stormwater runoff, and septic systems;

Radioactive Contaminants, which can be naturally occurring or may be the result of oil and gas production and mining activities.

For more information about contaminants and potential health effects, call the U.S. EPA's Safe Drinking Water Hotline at (800) 426-4791.

Definitions

90th %ile: The levels reported for lead and copper represent the 90th percentile of the total number of sites tested. The 90th percentile is equal to or greater than 90% of our lead and copper detections.

AL (Action Level): The concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow.

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.

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.

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.

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.

NA: Not applicable.

ND (Not detected): Indicates that the substance was not found by laboratory analysis.

pCi/L (picocuries per liter): A measure of radioactivity.

ppb (parts per billion): One part substance per billion parts water (or micrograms per liter).

ppm (parts per million): One part substance per million parts water (or milligrams per liter).