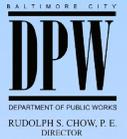


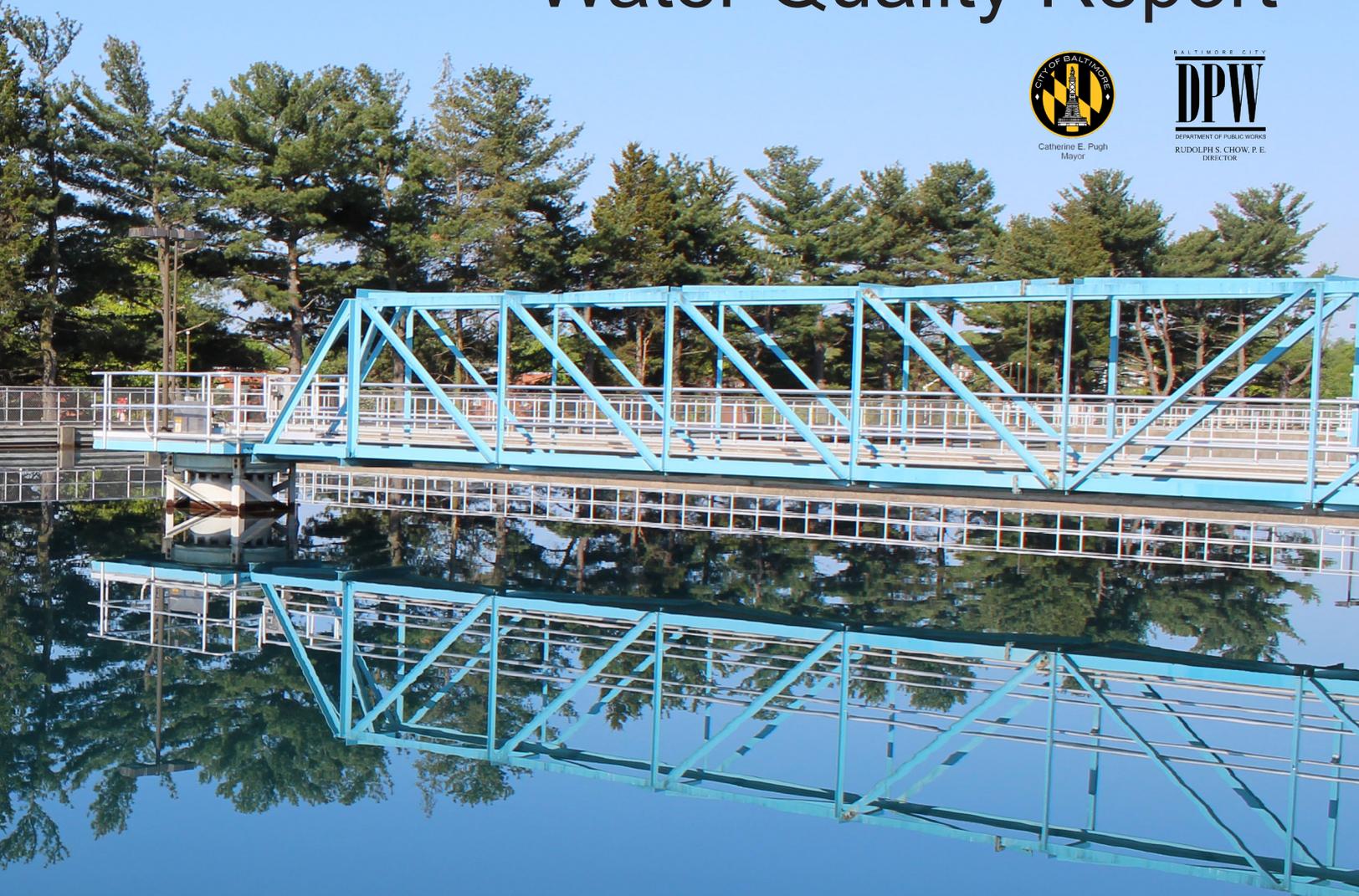
2018
BALTIMORE CITY
DEPARTMENT OF PUBLIC WORKS
Water Quality Report



Catherine E. Pugh
Mayor



RUDOLPH S. CHOW, P. E.
DIRECTOR



What's in this Report?

The excellent quality, great-tasting water we provide to our residential and commercial customers meets or exceeds regulatory standards!

This report, covering Jan. 1, 2018, to Dec. 31, 2018, for our water system (PWSID#:MD0300002) contains data on the quality of the water you drink, educational information and important public health notices and contacts. The information in this Annual Water

Quality Report, also known as the Consumer Confidence Report, is being provided to you as required by the U.S. Environmental Protection Agency.

This is the 21st edition of our annual Water Quality Report, and is available on the DPW website at: publicworks.baltimorecity.gov/waterreport. Printed copies of the report can be requested by calling 311 or (410) 396-5352 for Baltimore County residents.

Questions about this report, drinking water quality and information on source water assessments should be directed to one of the City's Water Quality Laboratories (Ashburton - 410-396-0150 or Montebello - 410-396-6040).



Important Health Information

Uncovered reservoirs used to store treated drinking water can be open to contamination from animals, such as birds or insects. Inadequately treated water may contain disease-causing organisms including bacteria, viruses, and parasites that can result in such symptoms as nausea, cramps, diarrhea, and associated headaches.

Some people may be more vulnerable to contaminants in drinking water than the general

population. Immunocompromised people, such as those undergoing chemotherapy or 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 from their health care providers.

Guidelines from the U.S. Environmental Protection Agency and Centers for Disease Control and Prevention regarding appropriate means to lessen the risk of infection

from Cryptosporidium and other microbial contaminants are available from the Safe Drinking Water Hotline at 1-800-426-4791. If you have specific health concerns, consult your doctor.

Delivering High-Quality Water is Our Mission

We are devoted – every hour, of every day – to bringing you high-quality water. The Baltimore City Department of Public Works (DPW) proudly serves 1.8 million people in Baltimore City and throughout the surrounding counties.

As you read this annual Water Quality Report, I hope you get a sense that the clean, great-tasting water that pours from your tap is made possible due to the hard work of DPW's employees. The people who work to maintain and protect our reservoirs, oversee the filtration process, place and maintain the mains that carry the water, all play crucial roles in protecting our health.

This system is entirely supported by our water customers through the payment of water bills. DPW's water and wastewater budget receives no support from the City's general funds. About 60 percent of DPW's total spending goes toward improving the City's aging water infrastructure.

We are adding another layer of protection by replacing our open-air, treated drinking water reservoirs, with massive concrete tanks buried safely underground. Several buried water tanks, including tanks in Towson and at the Montebello Filtration Plant, have been finished. We're still working on tanks in Guilford, Ashburton, and perhaps most prominently, Druid Lake.

Like many of our construction projects, these tanks are being built in accordance with federal mandates; in this case the Safe Drinking Water Act. The tanks will keep harmful bacteria and chemicals out of our filtered water. Importantly, the tanks will make it much more difficult to intentionally put something harmful into the water supply.

Our water supply is not just high quality, it's also plentiful. Our three raw water reservoirs – Loch Raven, Prettyboy, and Liberty – have 75 billion gallons of available storage. We even have backup plans in the event of drought. If you have questions, concerns, or suggestions about this report, please contact us at (410) 545-6541 or email us at publicworks@baltimorecity.gov.



Moby S. Chen



Baltimore's Excellent Drinking Water Meets or Exceeds Standards



Testing for Water Quality

To ensure that tap water is safe to drink, the U.S. Environmental Protection Agency (EPA) prescribes regulations which limit the amount of certain contaminants in water provided by public water systems. Food and Drug Administration regulations establish limits for contaminants in bottled water.

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 EPA's Safe Drinking Water Hotline (1-800-426-4791)

What we test for:

Microbiological Contaminants, such as viruses and bacteria, may come from sewage treatment plants, septic systems, agricultural and livestock operations, and wildlife.

Turbidity, a measure of the cloudiness of the water. It is used to indicate water quality and filtration effectiveness (such as whether disease-causing organisms are present).

Arsenic, a gray, semi-metallic element that occurs naturally, can be found in certain types of rock and soil. Arsenic can also enter the environment through agricultural and industrial processes.

Inorganic Contaminants, such as salts and metals, can be naturally occurring or result from urban stormwater runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming.

Lead and Copper which enter drinking water primarily through plumbing materials. Exposure to lead and copper may cause health problems ranging from stomach distress to brain damage.

Fluoride is a mineral added to water to prevent tooth decay.

Chlorine is added to water to control the growth of bacteria and viruses.

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

Volatile Organic Chemicals are byproducts of industrial processes and petroleum production, and can also come from gas stations, urban stormwater runoff, and septic systems.

Lead and Copper Testing

DPW conducted monitoring for lead and copper content in 2018. We sent letters to identified households, inviting 50 residents to participate in the monitoring. The results of the sampling found that none of the locations tested had lead and copper concentrations above the EPA action level of 15 parts per billion for lead, and 1,300 parts per billion for copper.

Lead in drinking water is caused primarily by materials associated with service lines and home plumbing. Lead can be released when the water comes in contact with plumbing fixtures that contain lead. That is why DPW carefully treats its water with lime, an anti-corrosive agent which helps to prevent lead from leaching out of household plumbing.

DPW is required by State and Federal laws to periodically test our drinking water for lead and copper.

Baltimore initially was required to monitor at least 100 different homes once every year. Because the City's water quality consistently exceeds the standards, our lead and copper sampling frequency was reduced to 50 homes every three years.

How to Read the Water Quality Data Table

EPA establishes the safe drinking water regulations that limit the amount of contaminants in drinking water. The table on pages 6 and 7 shows the concentrations of detected substances, in comparison to regulatory limits. Substances not detected are not included in the data table.

Key Water Quality Terms

The following are definitions of key terms referring to standards and goals of water quality noted on the data table.

MCL: Maximum Contaminant Level. The highest level of a contaminant allowed by health regulations established by the Environmental Protection Agency.

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.

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

PPM: Parts per Million; 1 ppm is the same as one drop in 10 gallons of water.

PPB: Parts per Billion; 1 ppb is the same as one drop in 10,000 gallons of water.

HLD: Highest Level Detected of a substance.

Data Table Footnotes

Cryptosporidium is a single-celled parasite that can invade and reside in the intestines of animals and people. This organism is found in some surface water (lakes, reservoirs, rivers, etc.). Ingestion of this organism can cause gastrointestinal illness.

CRYPTOSPORIDIUM RESULTS RANGE

Liberty: 0.0 Oocyst/Liter

Loch Raven: 0.0 Oocyst/Liter

Susquehanna River: 0.0 – 0.29 Oocyst/Liter

Total Coliform: Coliforms are bacteria that are naturally present in the environment and are used as an indicator that other, potentially harmful, bacteria may be present. If Coliforms were found in more samples than allowed this would be a warning of potential problems.

SECONDARY CONTAMINANTS

Sodium levels in the water supply are often of concern to consumers who contact our facilities. Sodium naturally occurs in raw waters but the concentration can be increased due to the influence of runoff from road surfaces treated with rock salt during snow and ice removal efforts. During the year 2018, the average sodium concentrations measured in the finished water from the Ashburton and Montebello Water Treatment Plants were 20.0 ppm and 21.8 ppm respectively, and are considered low.

*** EPA's MCL and MCLG for fluoride is 4ppm, but Maryland has set a lower MCL and MCLG which may improve public health protection.**

****Violations for Stage 2 THMs and HAAs are based on a locational running annual average. Therefore, unless this exceeds the MCL, there is no violation.**

NTU: Nephelometric Turbidity Units of measurement, which is used to report the level of turbidity or "cloudiness" in the water.

pCi/L: Picocuries per Liter. A measure of the level of radioactivity in the water.

TOTAL COLIFORMS/ E.COLI Indicator bacteria: this type of bacteriological test is routinely used to determine if contamination has occurred in a drinking water system.



2018 CCR Detected Regulated Contaminants Table

LEAD AND COPPER – Tested at customer’s taps. Testing is done every 3 years. 2018 was a compliance year for testing.

Contaminant	EPA’s Action Level	Ideal Goal (EPA’sMCLG)	90% of Test Levels Were Less Than	# of Test With Levels Above EPA’s Action Level	Violation	Typical Sources
Lead	90% of homes tested less than 15 ppb	0 ppb	3.06 ppb	0	No	Corrosion of household plumbing
Copper	90% of homes tested less than 1300 ppb	1,300 ppb	112.5 ppb	0	No	Corrosion of household plumbing

INORGANIC CHEMICALS

Contaminant	Highest Level Allowed (EPA’s MCL)	Ideal Goal (EPA’s MCLG)	Ashburton Plant		Montebello Plants		Violation	Typical Sources
			Highest Result	Range of Test Results	Highest Result	Range of Test Results		
Arsenic	0.010 ppm	0.010 ppm	<0.003	<0.003 - <0.003	<0.003	<0.003 - <0.003	No	Erosion of natural deposits
Barium	2 ppm	2 ppm	0.022	0.018-0.022	0.0382	0.0305 - 0.0994	No	Discharges from drilling wastes
Chromium	100 ppb	100 ppb	<0.002	<0.002- <0.002	<0.002	<0.002 - <0.002	No	Discharge from steel or pulp mills
Chlorine	4 ppm	4 ppm	2.00	0.64 – 2.00	2.07	0.56-2.07	No	Water additive to disinfect supply
Fluoride	2 ppm*	2 ppm*	1.37	0.20 - 1.37	1.00	0.05 -1.00	No	Water additive that promotes strong teeth
Nitrate	10 ppm	10 ppm	1.60	1.01 – 1.60	1.97	1.17 – 1.97	No	Runoff from fertilizer use

RADIOACTIVE CONTAMINANTS

Contaminant	Highest Level Allowed (EPA’s MCL)	Ideal Goal (EPA’s MCLG)	Ashburton Plant	Montebello Plants	Violation	Major Sources
Beta Photon Emitters	50 pCi/L	0 mrem/yr	<1.5 pCi/L	5 pCi/L	No	Erosion of natural deposits
Alpha Emitters	15 pCi/L	0 pCi/L	<1 pCi/L	3 pCi/L	No	Erosion of natural deposits

2018 CCR Detected Regulated Contaminants Table

VOLATILE ORGANIC CHEMICALS

Contaminant	Highest Level Allowed (EPA's MCL)	Ideal Goal (EPA's MCLG)	City of Baltimore Distribution System		Violation**	Major Sources
			Highest Result	Range		
Total THMs	80 ppb	NA	111	17 – 115	No	By-product of drinking water chlorination
HAA(5)	60 ppb	NA	76	2– 76	No	By-product of drinking water chlorination

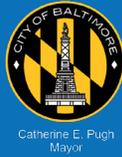
TURBIDITY

Contaminant	Highest Level Allowed (EPA's MCL)	Ideal Goal (EPA's MCLG)	Ashburton Plant		Montebello Plants		Violation	Major Sources
			Highest Result	Lowest %	Highest Result	Lowest %		
Turbidity	1NTU	None	0.08 NTU	100 %	0.62 NTU	100 %	No	Soil Run-off

BACTERIA IN TAP WATER

Contaminant	Highest Level Allowed (EPA's MCL)	Ideal Goal (EPA's MCLG)	Highest Monthly Percentage of Samples With Total Coliform Present	Violation	Typical Sources
Total Coliform (for systems that collect > 40 samples/month)	5% of monthly samples are positive	0	1.65%	No	Naturally present in the environment
CHLORINE	4 ppm	4 ppm	Running Annual Average of Samples Computed Quarterly	No	Water additive to disinfect supply
			0.62 ppm (Based on 4,931 distribution system samples collected in 2018)		

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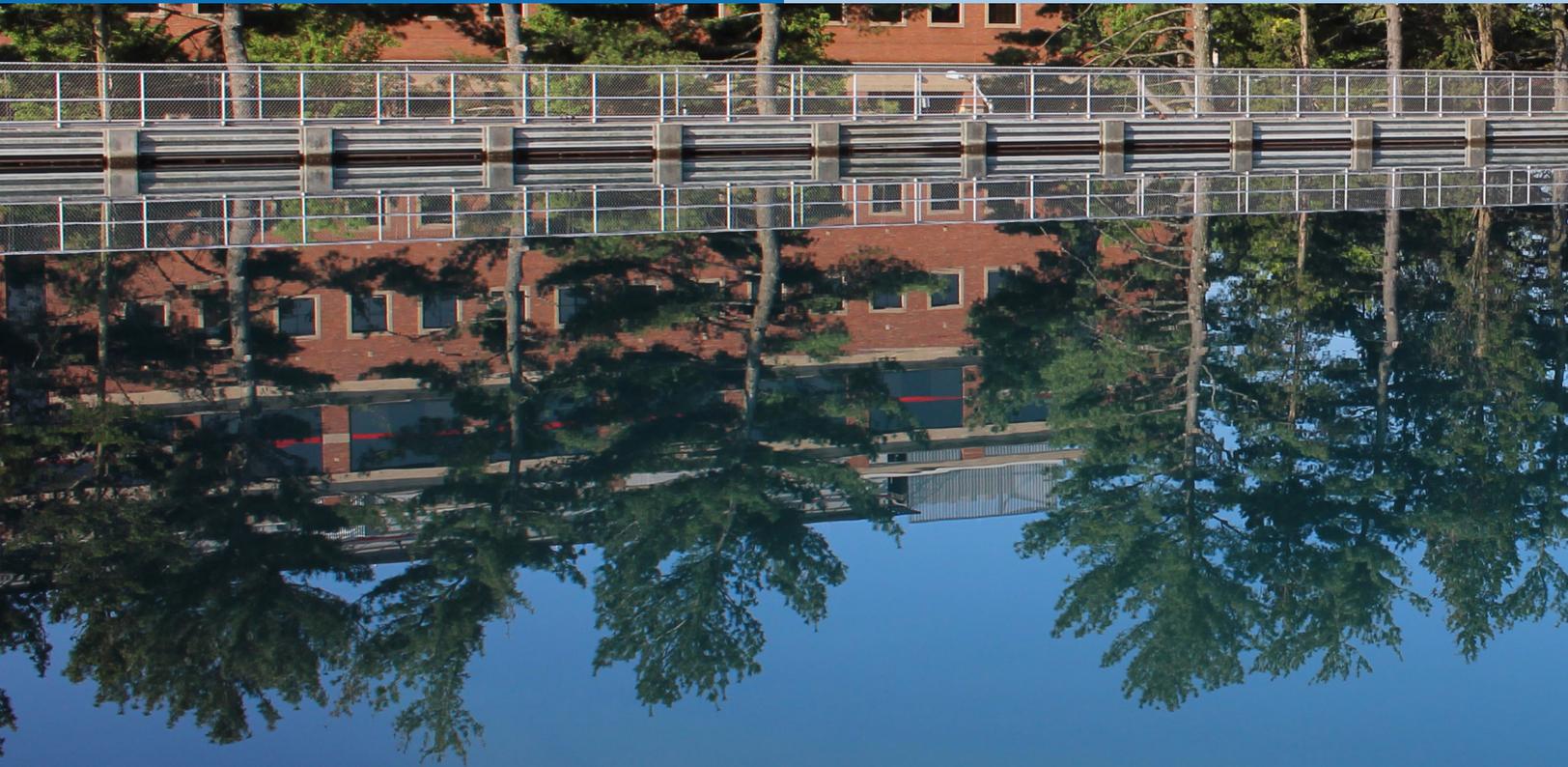
Protecting Baltimore's Water Supply

Baltimore uses surface water from rainfall and snowmelt as its water source. This water, approximately 75 billion gallons at available capacity, is collected and stored in the City's Liberty, Loch Raven, and Prettyboy reservoirs. The City water supply is also linked to the Susquehanna River, which flows from Cooperstown, N.Y., to Havre de Grace, Md. Water from the Susquehanna River is only used in time of drought.

The reservoirs are surrounded by mostly native woodlands, which filter out pollutants and prevent soil erosion and runoff. These watershed lands were established for the sole purpose of protecting our drinking water supply. Although the reservoirs are the property of the City, all the surrounding jurisdictions have a stake in their well-being.

You Can Help with Water System Security

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. For other suspicious activities that may appear non-threatening such as persons videotaping or photographing facilities, equipment or structures, please call 410-517-3600.



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