

ANNUAL WATER QUALITY REPORT

Reporting Year 2022



Presented By
Brockton Water Department



Este relatório contém informações importantes sobre a água potável. Ter alguém que traduzi-lo para você, ou falar com alguém que entenda-lo.

Este informe contiene información muy importante sobre su agua potable. Tradúzcalo o hable con alguien que lo entienda bien.

Cé rapport contient des information importantes concernant votre eau potable. Veuillez traduire, ou parlez avec quelqu' un qui peut le comprendre.



Our Mission Continues

We are once again pleased to present our annual water quality report covering all testing performed between January 1 and December 31, 2022. Over the years, we have dedicated ourselves to producing drinking water that meets all state and federal standards. We continually strive to adopt new methods for delivering the best-quality drinking water to you. As new challenges to drinking water safety emerge, we remain vigilant in meeting the goals of source water protection, water conservation, and community education while continuing to serve the needs of all our water users. Please remember that we are always available should you ever have any questions or concerns about your water.

Where Does My Water Come From?

The city's primary supply reservoir is Silver Lake, located in the towns of Pembroke, Kingston, Plympton, and Halifax. Since the early 1900s, Brockton has been served by this water supply. Withdrawals from both Furnace Pond in Pembroke and Monponsett Pond in Hanson and Halifax have been diverted by gravity to Silver Lake between October and May since the 1960s. The Silver Lake system has a watershed area of 11.07 miles. The Silver Lake water treatment facility, which has a capacity of 24 million gallons per day (mgd), treats water from Silver Lake and pumps it into the city's water distribution system.

The city receives supplemental water from the Aquaria desalination plant in Dighton. GS Inima Environment owns and operates the desalination plant, which treats water from the Taunton River. Water treated at this facility is piped to a meter vault on Pearl Street, where it connects to the city's water distribution system. The Aquaria desalination plant typically provides drinking water to the city during the summer months, when demand is highest, at an average rate of 1 to 2 mgd.

The city has historically obtained a small supply of water (approximately 0.5 mgd) from the Brockton Reservoir in Avon. The reservoir, built in 1880, became a water supply for Brockton when the nearby Woodland Avenue water treatment plant became operational in 1994. Brockton Reservoir, one of a small chain of ponds, is located in D. W. Field Park. It has a watershed of 2.64 miles. The Woodland Avenue water treatment plant has been inactive since spring 2021 due to the presence of per- and polyfluoroalkyl substances (PFAS) found in the Brockton Reservoir. On March 19, 2021, the city provided mailings to all residents summarizing the elevated levels of PFAS6 (the sum of six of these substances) at the Brockton Reservoir and Woodland Avenue water treatment plant.

Level 2 Assessment Update

Coliforms are bacteria that are naturally present in the environment and used as an indicator that other, potentially harmful, waterborne pathogens may be present or that a potential pathway exists through which contamination may enter the drinking water distribution system. During the past year, we missed repeat sampling for total coliforms and so were required to conduct two Level 2 Assessments. Two Level 2 assessments were completed. No corrective actions were required.

Additional Information

- The City of Brockton is proud to offer the Sensus Customer Portal, which allows residents to view their water usage and set up alerts if a water or dollar amount is exceeded. It can be found at brockton.ma.us/news/sensus-customer-portal/. To register, you will need your account number, which can be found on your water bill.
- Water use restrictions (water bans) can be found at www.brockton.ma.us and must be followed by properties with irrigation meters.
- The city's leak detection program regularly inspects 303 miles of water main in the distribution system. This program has helped maintain our annual water consumption, which was 8.56 mgd in 2022.
- In 2022 capital improvement projects to the city's water system included main replacement for Morse Avenue, Thomas Street, and Thomas Circle; replacement of the 20- and 24-inch-diameter valves along the twin 24-inch-diameter water transmission mains from East Bridgewater to the city limits; and replacement of the finished water pumps and variable frequency drives at the Silver Lake water treatment facility.

Lead in Home Plumbing

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. We are responsible for providing high-quality drinking water, but we 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 two 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 at (800) 426-4791 or at www.epa.gov/safewater/lead.

Substances That Could Be in Water

To ensure that tap water is safe to drink, the Department of Environmental Protection (DEP) and the U.S. Environmental Protection Agency (U.S. EPA) prescribe regulations limiting the amount of certain contaminants in water provided by public water systems. The Food and Drug Administration (FDA) and Massachusetts Department of Public Health (DPH) 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 and, in some cases, radioactive material and can pick up 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 which 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.

More information about contaminants and potential health effects can be obtained by calling the U.S. EPA's Safe Drinking Water Hotline at (800) 426-4791.

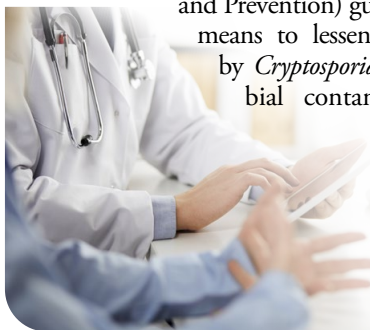
Source Water Assessment

The Brockton water system was evaluated in April 2003 by DEP and has remained relatively unchanged since then. This evaluation is called a Source Water Assessment Program (SWAP). The SWAP found that the watersheds for the Brockton water system are primarily a mix of underdeveloped forest (Silver Lake 42 percent, Brockton Reservoir 38 percent), residential development (Silver Lake 23 percent, Brockton Reservoir 14 percent), agriculture, industry, commercial uses, and protected open space. The Hubbard Avenue Well, an emergency source which has not been active since 1985, has an Interim wellhead protection area that contains predominantly residential (35 percent), commercial (21 percent), and industrial (8 percent) uses, with some forest. In the SWAP, the Brockton water system was commended for taking an active role in implementing source protection measures.

The SWAP is available for review and questions at the Brockton Water Department office. Further information on the SWAP is available at www.mass.gov/service-details/the-source-water-assessment-protection-swap-program.

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>.

QUESTIONS?

For more information about this report, or for any questions relating to your drinking water, please contact the Commissioner of Public Works at (508) 580-7865.

About Our Violations

We violated monitoring and reporting requirements of the drinking water regulations. Even though this was not an emergency, as our customers, you have a right to know what happened and what we did to correct this situation.

For September 2022, we had two total coliform positive samples (collected on different days) for which we failed to collect repeat samples within the required timeframe due to lack of notification of the detects by the laboratory. The failures to collect repeat samples within the required timeframe constituted Revised Total Coliform Rule (RTCR) Treatment Technique Triggers (TTT's). We failed to notify the Massachusetts Department of Environmental Protection (MassDEP) of these TTT's; failure to do so were reporting violations. We were required to submit a RTCR Level 2 Assessment by October 12, 2022.

For November 2022, we had a total coliform positive sample for which we failed to collect repeat samples within the required timeframe due to lack of notification by the laboratory. The failure to collect repeat samples within the required timeframe constituted another RTCR TTT. We failed to notify MassDEP of this TTT; failure to do so was a reporting violation. We were required to submit a RTCR Level 2 Assessment by December 1, 2022.

MassDEP notified us of the September & November 2022 total coliform positive samples in February 2023.

As we were not aware of the Level 2 Assessment requirements until February 2023, we failed to complete the assessments within the required timeframe. Failure to submit the assessments within the required timeframes constituted Treatment Technique Violations (TTV's) and resulted in additional reporting violations. We completed and submitted the required Assessments on March 22, 2023, and returned to compliance with the RTCR.

Coliforms are bacteria that are naturally present in the environment and are used as an indicator that other, potentially

harmful, waterborne pathogens may be present or that a potential pathway exists through which contamination may enter the drinking water distribution system. We found coliforms indicating the need to look for potential problems in water treatment or distribution. When this occurs, we are required to conduct assessment(s) to identify any problems that were found during these assessments.

During the past year, two Level 2 Assessment (one for September and one for November 2022) were required to be completed for our water system. Two Level 2 Assessments were completed. However, we failed to conduct the Assessments within the required timeframe.

We were not required to take specific corrective actions; no significant deficiencies were identified. We submitted a Plan to Prevent Future Non-Compliance on March 22, 2023, to MassDEP. We have a signed SOP with the laboratory detailing notification procedures, which includes direct verbal notification to the PWS of all total coliform results as soon as they are available. If no communication is received by the lab, the PWS will call the lab the following morning to obtain the results.

We Failed to Notify MassDEP of the above Treatment Technique Violations and Reporting Violations and we failed to provide Public Notice within the required timeframe.

Please share this information with all people who drink this water, especially those who may not have received this notice directly (for example, people in apartments, nursing homes, schools, and businesses). You can do this by posting this notice in a public place or distributing copies by hand or mail.

There is nothing you need to do at this time. You do not need to boil your water or take other actions.

For more information or questions regarding this notice, please contact: Michael D Sessine at 781-679-0677.

Definitions

90th %ile: Out of every 10 homes sampled, 9 were at or below this level. This number is compared to the Action Level to determine lead and copper compliance.

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

Level 2 Assessment: A Level 2 assessment is a very detailed study of the water system to identify potential problems and determine (if possible) why an *E. coli* MCL violation has occurred and/or why total coliform bacteria have been found in our water system on multiple occasions.

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.

NTU (Nephelometric Turbidity Units): Measurement of the clarity, or turbidity, of water. Turbidity in excess of 5 NTU is just noticeable to the average person.

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).

ppt (parts per trillion): One part substance per trillion parts water (or nanograms per liter).

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

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.

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.

REGULATED SUBSTANCES

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	MCL [MRDL]	MCLG [MRDLG]	AMOUNT DETECTED	RANGE LOW-HIGH	VIOLATION	TYPICAL SOURCE
Barium (ppm)	2022	2	2	0.012	NA	No	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits
Dalapon (ppb)	2018	200	200	1.3	NA	No	Runoff from herbicide used on rights of way
Gross Alpha (pCi/L)	2021	15	0	0.840	NA	No	Erosion of natural deposits
Haloacetic Acids [HAAs]–Stage 2 (ppb)	2022	60	NA	27	7.9–27	No	By-product of drinking water disinfection
Nitrate (ppm)	2022	10	10	0.11	NA	No	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits
Perchlorate (ppb)	2022	2	NA	0.12	NA	No	Inorganic chemicals used as oxidizers in solid propellants for rockets, missiles, fireworks, and explosives
PFAS6 (ppt)	2022	20	NA	2.91 ¹	NA	No	Discharges and emissions from industrial and manufacturing sources associated with the production or use of these PFAS, including production of moisture- and oil-resistant coatings on fabrics and other materials; Additional sources include the use and disposal of products containing these PFAS, such as firefighting foams
TTHMs [total trihalomethanes]–Stage 2 (ppb)	2022	80 ²	NA	69	42–69	No	By-product of drinking water disinfection
Turbidity³ (NTU)	2022	TT	NA	0.24	0.05–0.24	No	Soil runoff
Turbidity (lowest monthly percent of samples meeting limit)	2022	TT = 95% of samples meet the limit	NA	100	NA	No	Soil runoff

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

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	MCL	MCLG	AMOUNT DETECTED (90TH %ILE)	SITES ABOVE AL/TOTAL SITES	VIOLATION	TYPICAL SOURCE
Copper (ppm)	2020	1.3	1.3	0.065	0/32	No	Corrosion of household plumbing systems; Erosion of natural deposits
Lead (ppb)	2020	15	0	3	0/32	No	Corrosion of household plumbing systems; Erosion of natural deposits

UNREGULATED SUBSTANCES ⁴

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	AMOUNT DETECTED	RANGE LOW-HIGH	TYPICAL SOURCE
Bromodichloromethane (ppb)	2022	3.0	NA	NA
Chlorodibromomethane (ppb)	2022	1.0	NA	NA
Chloroform (ppb)	2022	13	NA	NA
Sodium (ppm)	03/02/2022	28.00	NA	NA

¹ Detected in Silver Lake finished water.

² Some people who drink water containing trihalomethanes in excess of the MCL over many years may experience problems with their liver, kidneys, or central nervous system and may have an increased risk of getting cancer.

³ Turbidity is a measure of the cloudiness of the water. It is monitored because it is a good indicator of the effectiveness of the filtration system.

⁴ Unregulated contaminants are those for which the U.S. EPA has not established drinking water standards. The purpose of unregulated contaminant monitoring is to assist U.S. EPA in determining their occurrence in drinking water and whether future regulation is warranted.