

ANNUAL WATER QUALITY REPORT

Reporting Year 2024



Presented By
Plymouth Water Division

Our Commitment

We are pleased to present to you this year's annual water quality report. This report is a snapshot of last year's water quality covering all testing performed between January 1 and December 31, 2024. Included are details about your source of water, what it contains, and how it compares to standards set by regulatory agencies. Our constant goal is to provide you with a safe and dependable supply of drinking water. We want you to understand the efforts we make to continually improve the water treatment process and protect our water resources. We are committed to ensuring the quality of your water and providing you with this information, because informed customers are our best allies.

Where Does My Water Come From?

Plymouth's municipal water supply consists of two aquifers and 13 gravel-packed wells at 11 locations throughout the town. The Plymouth Water Division spends over \$75,000 annually on testing to ensure water quality. We continue our mission to provide the highest-quality drinking water and fire protection at the lowest possible cost to the ratepayers. The Plymouth water system serves the entire northern section of town between Federal Furnace Road and the Kingston and Carver boundaries, Plymouth Center, Chiltonville, Manomet, and Cedarville areas east of Route 3 south to the Bourne town line.

What's a Cross-connection?

Cross-connections that contaminate drinking water distribution lines are a major concern. A cross-connection is formed at any point where a drinking water line connects to equipment (boilers), systems containing chemicals (air conditioning systems, fire sprinkler systems, irrigation systems), or water sources of questionable quality. Cross-connection contamination can occur when the pressure in the equipment or system is greater than the pressure inside the drinking water line (backpressure). Contamination can also occur when the pressure in the drinking water line drops due to fairly routine occurrences (main breaks, heavy water demand), causing contaminants to be sucked out from the equipment and into the drinking water line (backsiphonage).

Community water supplies are continuously jeopardized by cross-connections unless appropriate valves, known as backflow prevention devices, are installed and maintained. We have surveyed industrial, commercial, and institutional facilities in the service area to make sure that potential cross-connections are identified and eliminated or protected by a backflow preventer. We also inspect and test backflow preventers to make sure that they provide maximum protection.

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 can be particularly at risk from infections. These people should seek advice about drinking water from their health-care providers. U.S. Environmental Protection Agency (U.S. EPA)/Centers for Disease Control and Prevention (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 at (800) 426-4791 or epa.gov/safewater.

“Thousands have lived without love, not one without water.”

-W.H. Auden

Water Treatment Process

Groundwater is naturally corrosive, so we add sodium hydroxide to adjust the pH to 8.5. Chlorine is then added as a precaution against any bacteria that may be present. (We carefully monitor the amount of chlorine, adding the lowest quantity necessary to protect the safety of your water without compromising taste.) Finally, some wells get a phosphate blend (for iron and manganese sequestering) before pumping to water storage tanks and into your home or business.



MORE INFORMATION

For more information about this report, or for any questions relating to your drinking water, please call Drew Buckley, Plymouth Department of Public Works, Water Quality and Service Manager, at (508) 830-4162, ext. 12140.

Substances That Could Be in Water

In order to ensure that tap water is safe to drink, U.S. EPA and the Massachusetts Department of Environmental Protection (DEP) prescribe regulations that limit the amount of certain contaminants in water provided by public water systems. The Food and Drug Administration (FDA) and Massachusetts Department of Public Health regulations establish limits for contaminants in bottled water that must provide the same protection for public health.



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.

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. 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

A Source Water Assessment Plan (SWAP) is now available at our office. This plan is an assessment of the delineated area around our listed sources through which contaminants, if present, could migrate and reach our source water. It also includes an inventory of potential sources of contamination within the delineated area and a determination of the water supply's susceptibility to contamination by the identified potential sources.

According to the SWAP, our water system had a susceptibility rating of high. If you would like to review the SWAP, please feel free to contact our office during regular office hours.

Lead in Home Plumbing

There is no safe level of lead in drinking water. Exposure to lead in drinking water can cause serious health effects in all age groups, especially pregnant individuals, infants (both formula-fed and breastfed), and young children. Some of the health effects to infants and children include decreases in IQ and attention span. Lead exposure can also result in new or worsened learning and behavior problems. The children of persons who are exposed to lead before or during pregnancy may be at increased risk of these harmful health effects. Adults have increased risks of heart disease, high blood pressure, kidney, or nervous system problems. Contact your healthcare provider for more information about your risks.

Lead can cause serious health effects in people of all ages, especially pregnant people, infants (both formula-fed and breastfed), and young children. Lead in drinking water is primarily from materials and parts used in service lines and home plumbing. Plymouth Water Division is responsible for providing high-quality drinking water and removing lead pipes but cannot control the variety of materials used in the plumbing in your home. Because lead levels may vary over time, lead exposure is possible even when your tap sampling results do not detect lead at one point in time. You can help protect yourself and your family by identifying and removing lead materials within your home plumbing and taking steps to reduce your family's risk. Using a filter certified by an American National Standards Institute-accredited certifier to reduce lead is effective in reducing lead exposures. Follow the instructions provided with the filter to ensure it is used properly. Use only cold water for drinking, cooking, and making baby formula. Boiling does not remove lead from water.

Before using tap water for drinking, cooking, or making baby formula, flush your pipes for several minutes. You can do this by running your tap, taking a shower, or doing laundry or a load of dishes. If you have a lead service line or galvanized requiring replacement service line, you may need to flush your pipes for a longer period. If you are concerned about lead in your water, and wish to have your water tested, contact Plymouth Water Division at (508) 830-4162, ext. 12140. Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available at epa.gov/safewater/lead.

To address lead in drinking water, public water systems were required to develop and maintain an inventory of service line materials by October 16, 2024. Developing an inventory and identifying the location of lead service lines (LSL) is the first step for beginning LSL replacement and protecting public health. The lead service inventory may be accessed at <https://www.plymouth-ma.gov/1365/Lead-Service-Line-Inventory>. Please contact us if you would like more information about the inventory or any lead sampling that has been done.



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 is included, along with the year in which the sample was taken.

We participated in the fifth stage of the U.S. EPA's Unregulated Contaminant Monitoring Rule (UCMR5) program by performing additional tests on our drinking water. UCMR5 sampling benefits the environment and public health by providing the U.S. EPA with data on the occurrence of contaminants suspected to be in drinking water to determine if it needs to introduce new regulatory standards to improve drinking water quality. Unregulated contaminant monitoring data is available to the public, so please feel free to contact us if you are interested in obtaining that information. If you would like more information on the U.S. EPA's Unregulated Contaminant Monitoring Rule, please call the Safe Drinking Water Hotline at (800) 426-4791.

REGULATED SUBSTANCES								
SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	MCL [MRDL]	MCLG [MRDLG]	AMOUNT DETECTED	RANGE LOW-HIGH	VIOLATION	TYPICAL SOURCE	
2,4-D (ppb)	2024	70	70	0.266	ND–0.266	No	Runoff from herbicide used on row crops	
Barium (ppm)	2023	2	2	0.059	0.005–0.059	No	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits	
Total Chlorine (ppm)	2024	[4]	[4]	0.99	0.02–0.99	No	Water additive used to control microbes	
Gross Alpha Particle Activity (pCi/L)	2024	15	NA	0.6	ND–0.6	No	Erosion of natural deposits	
Fluoride (ppm)	2023	4	4	0.11	ND–0.11	No	Erosion of natural deposits; Water additive which promotes strong teeth; Discharge from fertilizer and aluminum factories	
HAAs5 (ppb)	2024	60	NA	4.92	ND–4.92	No	By-product of drinking water disinfection	
Nitrate (ppm)	2024	10	10	2.4	0.10–2.4	No	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits	
PFAS6 (ppt)	2024	20	NA	2.92	ND–2.92	No	Discharges and emissions from industrial and manufacturing sources associated with the production or use of moisture- and oil-resistant coatings on fabrics and other materials; Use and disposal of firefighting foams	
Combined Radium (pCi/L)	2024	5	NA	2.2	ND–2.2	No	Erosion of natural deposits	
Tetrachloroethylene (ppb)	2024	5	0	1.49	ND–1.49	No	Discharge from factories and dry cleaners	
TTHMs [total trihalomethanes] (ppb)	2024	80	NA	29.64	3.22–29.64	No	By-product of drinking water disinfection	

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

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	AL	MCLG	AMOUNT DETECTED (90TH %ILE)	RANGE LOW-HIGH	SITES ABOVE AL/TOTAL SITES	VIOLATION	TYPICAL SOURCE
Lead (ppb)	2024	15	0	2.5	ND–14	0/37	No	Corrosion of household plumbing systems; Erosion of natural deposits
Copper (ppm)	2024	1.3	1.3	0.282	0.008–0.542	0/37	No	Corrosion of household plumbing systems; Erosion of natural deposits

SECONDARY SUBSTANCES

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	SMCL	MCLG	AMOUNT DETECTED	RANGE LOW-HIGH	VIOLATION	TYPICAL SOURCE
Manganese (ppb)	2024	50 ¹	NA	134	ND–134	No	Leaching from natural deposits



UNREGULATED SUBSTANCES²

Substance (Unit of Measure)	Year Sampled	Amount Detected	Range Low-High	Typical Source
Bromodichloromethane (ppb)	2024	1.43	ND–1.43	Trihalomethane; By-product of drinking water chlorination
Chlorodibromomethane (ppb)	2024	0.91	ND–0.91	NA
Chloroform (ppm)	2024	13.37	ND–13.37	By-product of drinking water disinfection
Sodium (ppm)	2023	110	22–110	NA
Hexafluoropropylene Oxide Dimer Acid [HFPO-DA; GenX] (ppb)	2024	0.0015	ND–0.0015	NA
Lithium (ppb)	2024	7.38	ND–7.38	NA
Perfluorobutanesulfonic Acid [PFBS] (ppb)	2024	0.0028	ND–0.0028	NA
Perfluorobutanoic Acid [PFBA] (ppb)	2024	0.0019	ND–0.0019	NA
Perfluoroheptanoic Acid [PFHpA] (ppb)	2024	1.25	ND–1.25	NA
Perfluorohexanoic Acid [PFHxA] (ppb)	2024	1.23	ND–1.23	NA
Perfluorooctanesulfonic Acid [PFOS] (ppb)	2024	1.82	ND–1.82	NA
Perfluorooctanoic Acid [PFOA] (ppb)	2024	2.92	ND–2.92	NA
Perfluoropentanoic Acid [PFPeA] (ppb)	2024	0.0022	ND–0.0022	NA

¹ Manganese is a naturally occurring mineral found in rocks, soil, groundwater, and surface water. It is necessary for proper nutrition and part of a healthy diet, but it can have undesirable effects on certain sensitive populations at elevated concentrations. U.S. EPA and DEP have established public health advisory levels for manganese to protect against concerns of potential neurological effects.

² 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.

About Our Violation

Plymouth Water Division failed to notify the DEP about a synthetic organic compound (SOC) detection within the required time frame. This sample, taken during the summer of 2024, showed a result below the maximum contaminant level (MCL) and did not pose an immediate health risk. However, the failure to notify DEP in a timely manner constitutes a violation of reporting requirements set by state regulations.



The delay in notifying the DEP was primarily due to an oversight by our state-certified laboratory, which did not inform us of the detection within the necessary time frame. As a result, the Plymouth Water Division was unable to meet the regulatory deadline for notifying DEP about the SOC detection.

While the detection was below the MCL and did not pose any health risks, we understand the importance of timely notification to DEP and the transparency this provides to the public. We are committed to maintaining the highest standards of water quality management and ensuring full compliance with all regulatory requirements going forward.

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.

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).

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

SMCL (Secondary Maximum Contaminant Level): These standards are developed to protect aesthetic qualities of drinking water and are not health based.