

ANNUAL WATER QUALITY REPORT

Reporting Year 2023

**Presented By
Plymouth Water Division**



PWS ID#: 4239000



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, 2023. Included are details about your sources 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?

The Town of Plymouth's municipal water supply consists of two aquifers and 13 gravel-packed wells at 11 locations throughout Plymouth. The Plymouth Water Division spends over \$75,000 annually testing its water 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.

Source Water Assessment

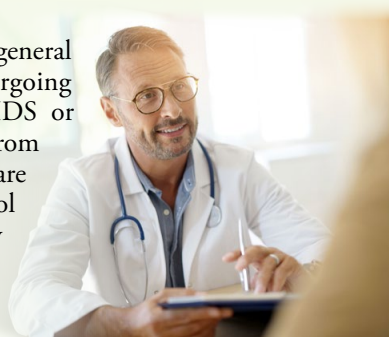


A source water assessment plan (SWAP) is now available at our office. This plan is an assessment of the delineated area around our listed sources through which contaminants, if present, could migrate and reach our source water. It also includes an inventory of potential sources of contamination within 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 at (508) 830-4162.

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. Environmental Protection Agency (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 <http://water.epa.gov/drink/hotline>.



QUESTIONS?

For more information about this report, or for any questions relating to your drinking water, please call Peter Gordon, Plymouth Department of Public Works, Water Division Superintendent, at (508) 830-4162, ext. 12141.

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. 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.

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).

Outside water taps and garden hoses tend to be the most common sources of cross-connection contamination at home. The garden hose creates a hazard when submerged in a swimming pool or attached to a chemical sprayer for weed killing. Garden hoses that are left lying on the ground may be contaminated by fertilizers, cesspools, or garden chemicals. Improperly installed valves in your toilet could also be a source of cross-connection contamination.

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. For more information on backflow prevention, contact the Safe Drinking Water Hotline at (800) 426-4791.

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 www.epa.gov/safewater/lead.



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.

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 are 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
Barium (ppm)	2023	2	2	0.059	0.005–0.059	No	Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits
Chlorine (ppm)	2023	[4]	[4]	0.81	0.02–0.81	No	Water additive used to control microbes
HAA5 (ppb)	2023	60	NA	1.40	ND–1.40	No	By-product of drinking water disinfection
Nitrate (ppm)	2023	10	10	1.9	0.18–1.9	No	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits
Tetrachloroethylene (ppb)	2023	5	0	2.13	ND–2.13	No	Discharge from factories and dry cleaners
TTHMs [total trihalomethanes]– Stage 2 (ppb)	2023	80	NA	43.95	4.42–43.95	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)	SITES ABOVE AL/TOTAL SITES	VIOLATION	TYPICAL SOURCE
Copper (ppb)	2023	1.3	1.3	0.242	0/31	No	Corrosion of household plumbing systems; erosion of natural deposits
Lead (ppb)	2023	15	0	2.5	0/31	No	Lead service lines; corrosion of household plumbing systems, including fittings and fixtures; erosion of natural deposits

SECONDARY SUBSTANCES							
SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	SMCL	MCLG	AMOUNT DETECTED	RANGE LOW-HIGH	VIOLATION	TYPICAL SOURCE
Fluoride (ppm)	2023	2.0	NA	0.11	ND–0.11	No	Erosion of natural deposits; water additive which promotes strong teeth; discharge from fertilizer and aluminum factories
Manganese (ppb)	2023	50 ¹	NA	51	ND–51	No	Leaching from natural deposits

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.

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).

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

UNREGULATED SUBSTANCES ²

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	AMOUNT DETECTED	RANGE LOW-HIGH	TYPICAL SOURCE
Bromodichloromethane (ppb)	2023	2.12	ND–2.12	Trihalomethane; by-product of drinking water chlorination
Chlorodibromomethane (ppb)	2023	2.00	ND–2.00	NA
Chloroform (ppb)	2023	1.99	ND–1.99	By-product of drinking water disinfection
Lithium (ppb)	2023	7.38	ND–7.38	NA
Perfluorobutanesulfonic Acid [PFBS] (ppb)	2023	0.0028	ND–0.0028	NA
Perfluorobutanoic Acid [PFBA] (ppb)	2023	0.0019	ND–0.0019	NA
Perfluorohexanoic Acid (PFHxA) (ppb)	2023	0.0016	ND–0.0016	NA
Perfluorooctanesulfonic Acid [PFOS] (ppb)	2023	0.0013	ND–0.0013	NA
Perfluorooctanoic Acid [PFOA] (ppb)	2023	0.0020	ND–0.0020	NA
Perfluoropentanoic Acid [PFPeA] (ppb)	2023	0.0022	ND–0.0022	NA
Sodium (ppm)	2023	110	22–110	NA

¹ Manganese is a naturally occurring mineral found in rocks, soil, groundwater, and surface water. Manganese 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 the U.S. EPA in determining their occurrence in drinking water and whether future regulation is warranted.

BY THE NUMBERS



5.1 TRILLION

The dollar value needed to keep water, wastewater, and stormwater systems in good repair.



12 THOUSAND

The average amount in gallons of water used to produce one megawatt-hour of electricity.



2

How often in minutes a water main breaks.



47.5 TRILLION

The amount in gallons of water used to meet U.S. electric power needs in 2020.



1.7 TRILLION

The gallons of drinking water lost each year to faulty, aging, or leaky pipes.



33

The percentage of water sector employees who will be eligible to retire by 2033.

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 the water to storage tanks and into your home or business.