

ANNUAL WATER QUALITY REPORT

Reporting Year 2021



Presented By
**Stoughton Water
Department**

We've Come a Long Way

Once again, we are proud to present our annual water quality report covering the period between January 1 and December 31, 2021. In a matter of only a few decades, drinking water has become exponentially safer and more reliable than at any other point in human history. Our exceptional staff continues to work hard every day—at all hours—to deliver the highest-quality drinking water without interruption. Although the challenges ahead are many, we feel that by relentlessly investing in customer outreach and education, new treatment technologies, system upgrades, and training, the payoff will be reliable, high-quality tap water delivered to you and your family.

Where Does My Water Come From?

Our water system includes seven groundwater supply wells and pumping stations, a connection to the Massachusetts Water Resources Authority (MWRA, on Island Street), four water storage tanks, and approximately 150 miles of water main. In addition, Stoughton maintains emergency pump stations to obtain water from the Towns of Canton and Brockton and two emergency interconnections to obtain water from the Towns of Easton and Sharon. About 96.5 percent of your drinking water is from Stoughton's own water resources, with the remaining 3.5 percent from the MWRA supply.

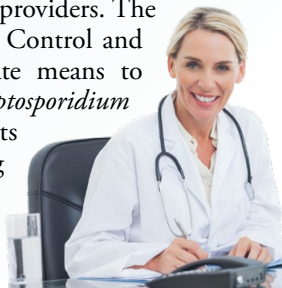
Stoughton's Water Treatment

To meet state and federal requirements for drinking water, our source water receives treatment before it is supplied to our customers. We treat our water for corrosion control, disinfect it, and filter iron and manganese, as detailed in the table in this report. The pH of the water is raised with potassium hydroxide to reduce its corrosivity in household plumbing. Disinfection is provided using liquid chlorine.



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>.



What are PFAS?

Per- and polyfluoroalkyl substances (PFAS) are a group of manufactured chemicals used worldwide since the 1950s to make fluoropolymer coatings and products that resist heat, oil, stains, grease, and water. During production and use, PFAS can migrate into the soil, water, and air. Most PFAS do not break down; they remain in the environment, ultimately finding their way into drinking water. Because of their widespread use and their persistence in the environment, PFAS are found all over the world at low levels. Some PFAS can build up in people and animals with repeated exposure over time.

The most commonly studied PFAS are perfluorooctanoic acid (PFOA) and perfluorooctane sulfonic acid (PFOS). PFOA and PFOS have been phased out of production and use in the United States, but other countries may still manufacture and use them.

Some products that may contain PFAS include:

- Some grease-resistant paper, fast food containers/wrappers, microwave popcorn bags, pizza boxes
- Nonstick cookware
- Stain-resistant coatings used on carpets, upholstery, and other fabrics
- Water-resistant clothing
- Personal care products (shampoo, dental floss) and cosmetics (nail polish, eye makeup)
- Cleaning products
- Paints, varnishes, and sealants

Even though recent efforts to remove PFAS have reduced the likelihood of exposure, some products may still contain them. If you have questions or concerns about products you use in your home, contact the Consumer Product Safety Commission at (800) 638-2772. For a more detailed discussion on PFAS, please visit <https://www.atsdr.cdc.gov/pfas/index.html>.

QUESTIONS? Want to know more about the Stoughton water supply system? Interested in participating in the decision-making process? Please contact Phil McNulty, PE, Water & Sewer Superintendent, at the Stoughton Public Works Department at (781) 344-2112 with any questions, comments, or concerns. We are located at 1748 Central Street.

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.

Violation Information

During the first quarter of 2021, we detected a range of 0.2 to 3 micrograms per liter ($\mu\text{g/L}$) of 2,4-D, which has a maximum contaminant level (MCL) of 70 $\mu\text{g/L}$. We failed to notify DEP, which is a reporting violation. We then increased our testing for synthetic organic chemicals for the third and fourth quarters. Sampling during both quarters produced no results above laboratory detection limits. Results of the analysis have been properly recorded as required by state and federal law. We have now returned to our three-year sampling plan schedule, as mandated by DEP. We do not believe that missing this reporting requirement had any impact on public health and safety. We have already taken the steps to ensure that adequate monitoring and reporting will be performed in the future so that this oversight will not be repeated.

During the third quarter of 2021, Muddy Pond, one of our eighty water sources, had a quarterly average of 21.97 parts per trillion (ppt) of a newly regulated group of perfluoroalkyl or polyfluoroalkyl substances (PFAS) known as PFAS6. This exceeded the MCL of 20 ppt for these substances. Upon being notified of this violation by DEP, we promptly informed all consumers. We have tried blending the source waters to obtain a better result for the short term and are looking into a long-term action plan. We will continue to monitor PFAS and notify the public quarterly if needed. Some people who drink water containing these PFAS in excess of the MCL may experience certain adverse effects. These could include effects on the liver, blood, immune system, thyroid, and fetal development. These PFAS may also elevate the risk of certain cancers.

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.

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
2,4-D (ppb)	2021	70	70	3	ND–3	No	Runoff from herbicide used on row crops
Barium ¹ (ppm)	2021	2	2	0.01	0.008–0.01	No	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits
Combined Radium (pCi/L)	2021	5	0	1.26	0.59–1.26	No	Erosion of natural deposits
Fluoride ¹ (ppm)	2021	4	4	0.81	0.24–0.81	No	Water additive which promotes strong teeth
Haloacetic Acids [HAAs] ² (ppb)	2021	60	NA	30.2	3.7–30.2	No	By-product of drinking water disinfection
Nitrate ³ (ppm)	2021	10	10	4.08	0.05–4.08	No	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits
Perchlorate (ppb)	2021	2	NA	0.69	0.15–0.69	No	Inorganic chemicals used as oxidizers in solid propellants for rockets, missiles, fireworks, and explosives
PFAS6 (ppt)	2021	20	NA	21.97	18.3–23.2	Yes	Industrial and manufacturing sources associated with moisture- and oil-resistant coatings on fabrics and other materials; Firefighting foams
TTHMs [total trihalomethanes] ⁴ (ppb)	2021	80	NA	43.6	6–43.6	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 (ppm)	2021	1.3	1.3	0.98	2/60	No	Corrosion of household plumbing systems; Erosion of natural deposits
Lead (ppb)	2021	15	0	4	1/60	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
Aluminum (ppb)	2021	200	NA	0.13	ND–0.13	No	Erosion of natural deposits; Residual from some surface water treatment processes
Chloride (ppm)	2021	250	NA	87	44.8–87	No	Runoff/leaching from natural deposits
Copper (ppm)	2021	1.0	NA	0.14	ND–0.14	No	Corrosion of household plumbing systems; Erosion of natural deposits
Manganese (ppb)	2021	50	NA	26	ND–249	No	Leaching from natural deposits
Odor (TON)	2021	3	NA	2	ND–2	No	Naturally occurring organic materials
pH (units)	2021	6.5-8.5	NA	72	6.9–7.2	No	Naturally occurring
Sulfate (ppm)	2021	250	NA	11	ND–11	No	Runoff/leaching from natural deposits; Industrial wastes
Total Dissolved Solids [TDS] (ppm)	2021	500	NA	240	189–240	No	Runoff/leaching from natural deposits
Zinc (ppm)	2021	5	NA	0.007	ND–0.007	No	Runoff/leaching from natural deposits; Industrial wastes

¹ MWRA test results.

² Includes data from MWRA (3.7 - 30.2 ppb) and Stoughton's wells (12.1 - 27.1 ppb).

³ Includes the results from MWRA (0.05 - 0.83 ppm) and Stoughton's wells (0.37 - 4.08 ppm).

⁴ Includes the results from MWRA (6 - 34.8 ppb) and Stoughton's wells (23.4 - 43.6 ppb).

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).

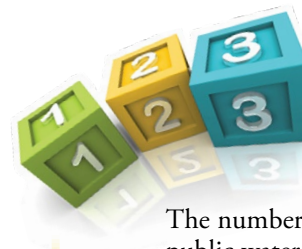
ppm (parts per million): One part substance per million parts water (or milligrams per liter).

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.

TON (Threshold Odor Number): A measure of odor in water.

BY THE NUMBERS



The number of Americans who receive water from a public water system.

300
MILLION

1
MILLION

The number of miles of drinking water distribution mains in the U.S.

The number of gallons of water produced daily by public water systems in the U.S.

34
BILLION

135
BILLION

The amount of money spent annually on maintaining the public water infrastructure in the U.S.

The number of active public water systems in the U.S.

151
THOUSAND

199
THOUSAND

The number of highly trained and licensed water professionals serving in the U.S.

The age in years of the world's oldest water, found in a mine at a depth of nearly two miles.

2
BILLION