

# ANNUAL WATER QUALITY REPORT

REPORTING YEAR 2020

*Presented By*





## Quality First

Once again, we are pleased to present our annual water quality report covering all testing performed between January 1 and December 31, 2020. As in years past, we are committed to delivering the best-quality drinking water possible. To that end, we remain vigilant in meeting the challenges of new regulations, source water protection, water conservation, and community outreach and education while continuing to serve the needs of all our water users. Thank you for allowing us the opportunity to serve you and your family.

We encourage you to share your thoughts with us on the information contained in this report. After all, well-informed customers are our best allies.

## Source Water Assessment for Pennichuck Water and Lowell Regional Water Utility

A Source Water Assessment Plan (SWAP) for Pennichuck Water is now available at the Pennichuck Water 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. If you would like to review the Source Water Assessment Plan, please feel free to call (800) 553-5191 or visit the DES Drinking Water Source Assessment Web site at <https://www.des.nh.gov/climate-and-sustainability/conservation-mitigation-and-restoration/source-water-protection/assessment>

### SUMMARY OF SUSCEPTIBILITY FACTORS

SOURCE NAME	DATE*	LOW MED HIGH
Harris Pond Reservoir	7/5/01*	6 - 3 - 2
Supply Pond/Springs	7/5/01*	6 - 3 - 2
Merrimack River	10/25/01*	2 - 4 - 5

### Source Water Assessment for Lowell Regional Water Utility

A Source Water Assessment Plan for the Lowell Regional Water Utility is available at the Lowell Regional Water Utility office. A susceptibility ranking of Higher was assigned to this system using the information collected during the assessment by the MADEP.

## 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 2 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](http://www.epa.gov/safewater/lead).

## The Benefits of Fluoridation

Fluoride is a naturally occurring element in many water supplies in trace amounts. In our system, the fluoride level is adjusted to an optimal level averaging 0.7 parts per million (ppm) to improve oral health in children. At this level, it is safe, odorless, colorless, and tasteless. There are over 3.9 million people using 140 Massachusetts water systems and 184 million people in the U.S. who receive the health and economic benefits of fluoridation.

## How Long Can I Store Drinking Water?

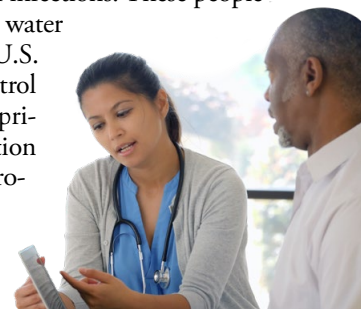
The disinfectant in drinking water will eventually dissipate even in a closed container. If that container housed bacteria before it was filled with tap water, the bacteria may continue to grow once the disinfectant has dissipated. Some experts believe that water could be stored up to six months before needing to be replaced. Refrigeration will help slow the bacterial growth.

## Community Participation

You are invited to participate in our public forum and voice your concerns about your drinking water. We meet the 1st and 3rd Tuesdays of each month beginning at 7 p.m. at our office at 87 Progress Ave, Unit Two.

## Important Health Information

Some people may be more vulnerable to contaminants in drinking water than the general population. Immunocompromised persons such as those with cancer undergoing chemotherapy, those 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 call Dale Thompson, Tyngsborough Water District Superintendent, at (978) 649-4577.



### What type of container is best for storing water?

Consumer Reports has consistently advised that glass or BPA-free plastics such as polyethylene are the safest choices. To be on the safe side, don't use any container with markings on the recycle symbol showing "7 PC" (that's code for BPA). You could also consider using stainless steel or aluminum with BPA-free liners.

### How much emergency water should I keep?

Typically, one gallon per person per day is recommended. For a family of four, that would be 12 gallons for three days. Humans can survive without food for one month but can only survive one week without water.

### How many community water systems are there in the U.S.?

About 53,000 public water systems across the United States process 34 billion gallons of water per day for home and commercial use. Eighty-five percent of the population is served by these systems.

## Where Does My Water Come From?

Our water is purchased from these sources:

- The City of Lowell water treatment facility, which treats and filters water from the Merrimack River
- The Pennichuck Water water treatment facility, which treats and filters water from the Merrimack River and Pennichuck Brook

## Substances That Could Be in Water

To ensure that tap water is safe to drink, the state Department of Environmental Protection (MADEP) 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 that 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 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.

## Test Results

Our water is monitored for many different kinds of substances on a very strict sampling schedule. Also, the water we deliver must meet specific health standards. Here, we show only 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 often 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]	Tyngsborough Water District		Pennichuck Water		Lowell Regional Water Utility		VIOLATION	TYPICAL SOURCE
				AMOUNT DETECTED	RANGE LOW-HIGH	AMOUNT DETECTED	RANGE LOW-HIGH	AMOUNT DETECTED	RANGE LOW-HIGH		
<b>Barium</b> (ppm)	2020	2	2	NA	NA	0.0110	NA- 0.0110	NA	NA	No	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits
<b>Chlorine</b> (ppm)	2020	[4]	[4]	1.28	0.13–1.28	0.90	0.60–0.90	1.42	0.75–1.42	No	Water additive used to control microbes
<b>Chlorite</b> (ppm)	2020	1	0.8	NA	NA	NA	NA	0.30	0.17–0.30	No	By-product of drinking water disinfection
<b>Combined Radium</b> (pCi/L)	2015	5	0	NA	NA	0.5	NA–0.5	NA	NA	No	Erosion of natural deposits
<b>Fluoride</b> (ppm)	2020	4	4	NA	NA	NA	NA	1.02	0.59–1.02	No	Water additive that promotes strong teeth
<b>Haloacetic Acids [HAAs]</b> (ppb)	2020	60	NA	12	7.8–12	14.0	1.0–14.0	12	8–12	No	By-product of drinking water disinfection
<b>Nitrate</b> (ppm)	2020	10	10	NA	NA	0.54	0.30–0.54	0.329	NA–0.329	No	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits
<b>PFAS6</b> (ppt)	2020	20	NA	NA	NA	NA	NA	8.14	ND–8.14	No	Discharges and emissions from industrial and manufacturing sources associated with the production or use of PFAS, including production of moisture- and oil-resistant coatings on fabrics and other materials; Use and disposal of products containing these PFAS, such as fire-fighting foams
<b>TTHMs [Total Trihalomethanes]</b> (ppb)	2020	80	NA	42	11–42	60.0	7.0–60.0	51	27–51	No	By-product of drinking water disinfection
<b>Total Organic Carbon</b> (ppm)	2020	TT	NA	NA	NA	0.88	ND–0.88	NA	NA	No	Naturally present in the environment
<b>Turbidity<sup>1</sup></b> (NTU)	2020	TT	NA	NA	NA	0.26	NA	0.20	0.028–0.20	No	Soil runoff
<b>Turbidity</b> (Lowest monthly percent of samples meeting limit)	2020	TT = 95% of samples meet the limit	NA	NA	NA	100%	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	AL	MCLG	AMOUNT DETECTED (90TH %ILE)	SITES ABOVE AL/TOTAL SITES	VIOLATION	TYPICAL SOURCE
<b>Copper</b> (ppm)	2020	1.3	1.3	0.047	0/20	No	Corrosion of household plumbing systems; Erosion of natural deposits
<b>Lead</b> (ppb)	2020	15	0	2.3	0/20	No	Corrosion of household plumbing systems; Erosion of natural deposits

## SECONDARY SUBSTANCES

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	SMCL	MCLG	Tyngsborough Water District		Pennichuck Water		Lowell Regional Water Utility		VIOLATION	TYPICAL SOURCE
				AMOUNT DETECTED	RANGE LOW-HIGH	AMOUNT DETECTED	RANGE LOW-HIGH	AMOUNT DETECTED	RANGE LOW-HIGH		
Manganese (ppb)	2018	50	NA	8	NA-8	36.0 <sup>2</sup>	NA-36.0 <sup>2</sup>	NA	NA	No	Leaching from natural deposits
pH (Units)	2020	6.5-8.5	NA	NA	NA	7.69	NA-7.69	8.0	7.7-8.0	No	Naturally occurring

## UNREGULATED AND OTHER SUBSTANCES <sup>3</sup>

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	Pennichuck Water		Lowell Regional Water Utility		TYPICAL SOURCE
		AMOUNT DETECTED	RANGE LOW-HIGH	AMOUNT DETECTED	RANGE LOW-HIGH	
Bromodichloromethane (ppb)	2020	NA	NA	7.5	1.9-7.5	By-product of drinking water disinfection
Chloroform (ppb)	2020	NA	NA	16.6	7.4-16.6	By-product of drinking water disinfection
MTBE (ppb)	2020	NA	NA	0.5	ND-0.5	Gasoline additive
Perfluorodecanoic Acid (ppt)	2019	NA	NA	0.95	NA-0.95	Man-made chemical; Used in products to make them resistant to stains, grease, heat, and water
Perfluorononanoic Acid (PFNA) (ppt)	2019	NA	NA	<2.0	NA-<2.0	Man-made chemical; Used in products to make them resistant to stains, grease, heat, and water
Perfluorooctanoic Acid (ppt)	2020	3.47	2.19-3.47	NA	NA	Industrial processes; found in fire-fighting foam, landfills, and wastewater treatment and septic systems
Sodium (ppm)	2020	47.2	NA-47.2	54.0	NA-54.0	Erosion of natural deposits and road salt
Sulfate (ppm)	2020	6	NA-6	6.0	NA-6.0	Naturally occurring

<sup>1</sup>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.

<sup>2</sup>Sampled in 2020

<sup>3</sup>Unregulated contaminants are those for which the U.S. EPA has not established drinking water standards. The purpose of monitoring unregulated contaminants is to assist the EPA in determining their occurrence in drinking water and whether future regulation is warranted.

## 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 that, if exceeded, triggers treatment or other requirements that 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.

**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.

**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.

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

