

# ANNUAL WATER QUALITY REPORT

Reporting Year 2021



*Presented By*  
**Town of Amherst**

此報告包含有關您的飲用水的重要資訊。請人幫您翻譯出來，或請能看懂此報告的人將內容說給您聽。

## 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. 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 protections, 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 Description

The Town currently has seven sources that contribute to meeting the water demand: Atkins Reservoir, the Pelham Reservoir System, the South Amherst Wells (#1 & #2), the Brown Well (#3), the Lawrence Swamp Well (#4), and the Bay Road Well (#5). Currently, the Atkins Reservoir and Well #4 are the primary water supplies, with Wells #1, #2, and #3 alternating as make-up water each day. These five sources supply approximately 90% of the total water produced. Historically, the Pelham Reservoir System and Well #5 operate during high-demand periods, or as needed, throughout the year. The Pelham Reservoir System is offline at this time; construction to replace this treatment plant is slated to begin soon.

In 2002, a Source Water Assessment Program (SWAP) was completed on the Amherst water system by MADEP. This SWAP report assesses the susceptibility of the Town's drinking water sources to contaminants and outlines recommendations for drinking water protection. A copy is available at the Department of Public Works and online at [https://www.mass.gov/doc/amherst-swap-repor/download?\\_ga=2.91095322.1866986482.1649950331-1912977195.1649950331](https://www.mass.gov/doc/amherst-swap-repor/download?_ga=2.91095322.1866986482.1649950331-1912977195.1649950331)

## 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 in 140 Massachusetts water systems and 184 million people in the U.S. who receive the health and economic benefits of fluoridation.

## Think Before You Flush!

Flushing unused or expired medicines can be harmful to your drinking water. Properly disposing of unused or expired medication helps protect you and the environment. Keep medications out of our waterways by disposing responsibly. To find a convenient drop-off location near you, please visit <https://bit.ly/3IeRyXy>.

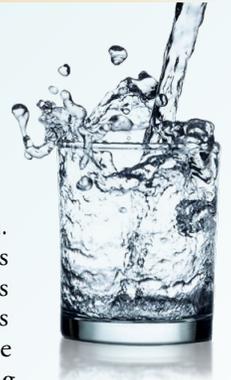


## Lead in Home Plumbing

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.

“When the well is dry, we know the worth of water.”

—Benjamin Franklin



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).

## 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 Guilford Mooring, Superintendent of Public Works, at (413) 259-3050.

## Substances That Could Be in Water

To ensure that tap water is safe to drink, the 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.



Fats, Oils, and Grease (F.O.G.) harden as they cool, and stick to the walls of sewer pipes, causing costly clogs and overflows that spill into our environment. To help prevent sewer system overflows, just pour oil and grease into a jar or can, and when it is full, dispose of it in the trash.



## Waste Per Quarter at 60 PSI Water Pressure

DIAMETER OF STREAM	GALLONS	CUBIC FEET	COST/ QUARTER*
3/16"	666,000	89,031	\$4,095.43
1/8"	296,000	39,400	\$1,812.40
1/16"	74,000	9,850	\$453.10

A continuous leak from a hole this size would waste this much water and money over a 3 month period.

\*Based on FY22 water rate of \$4.60 per 100 cu.ft.

Check out this website to see how much water you're wasting with leaky faucets: <http://anycalculator.com/drip.htm>

## 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]	Town of Amherst		Atkins Treatment Plant		Wells		VIOLATION	TYPICAL SOURCE
				AMOUNT DETECTED	RANGE LOW-HIGH	AMOUNT DETECTED	RANGE LOW-HIGH	AMOUNT DETECTED	RANGE LOW-HIGH		
Alpha Emitters (pCi/L)	2020	15	0	NA	NA	NA	NA	0.679	0–0.679	No	Erosion of natural deposits
Barium (ppm)	2021	2	2	NA	NA	0.0081	0–0.0081	0.131	0.0757–0.189	No	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits
Chlorine (ppm)	2021	[4]	[4]	0.56	0.1–3.0	2.5	1.6–3.0	0.4	0.0–1.0	No	Water additive used to control microbes
Combined Radium (pCi/L)	2020	5	0	NA	NA	NA	NA	0.329	0.165–0.329	No	Erosion of natural deposits
Fluoride (ppm)	2021	4	4	0.54	0.08–0.89	0.7	0.3–1.1	0.6	0.1–1.13	No	Water additive that promotes strong teeth
Haloacetic Acids [HAAs]–Stage 1 (ppb)	2021	60	NA	41.5	ND–70.7	NA	NA	NA	NA	No	By-product of drinking water disinfection
Nitrate (ppm)	2020	10	10	NA	NA	ND	ND	0.91	ND–2.52	No	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits
TTHMs [Total Trihalomethanes]–Stage 1 (ppb)	2021	80	NA	31.2	ND–62.6	NA	NA	NA	NA	No	By-product of drinking water disinfection
Turbidity <sup>1</sup> (NTU)	2021	TT	NA	NA	NA	0.08	0.03–0.19	NA	NA	No	Soil runoff
Turbidity (Lowest monthly percent of samples meeting limit)	2021	TT = 95% of samples meet the limit	NA	NA	NA	100	NA	NA	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
Lead (ppb)	2020	15	0	7.1	2/37	No	Lead services lines; Corrosion of household plumbing systems including fittings and fixtures; Erosion of natural deposits

### SECONDARY SUBSTANCES

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	SMCL	MCLG	Atkins Treatment Plant		Wells		VIOLATION	TYPICAL SOURCE
				AMOUNT DETECTED	RANGE LOW-HIGH	AMOUNT DETECTED	RANGE LOW-HIGH		
Manganese (ppb)	2020	50	NA	ND	NA	9.0 <sup>2</sup>	0–32.1 <sup>2</sup>	No	Leaching from natural deposits

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

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	Town of Amherst		Atkins Treatment Plant		Wells	
		AMOUNT DETECTED	RANGE LOW-HIGH	AMOUNT DETECTED	RANGE LOW-HIGH	AMOUNT DETECTED	RANGE LOW-HIGH
Sodium (ppm)	2021	NA	NA	9.02	9.02–9.02	18.15	7.84–35.8

<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 2021.

<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.



## 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.

## 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).

**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.