

# ANNUAL WATER QUALITY REPORT

REPORTING YEAR 2020



***Presented By***  
**City of Newburyport**  
**DPS Water Division**



## 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.

## Water Treatment Process

In order to meet State and Federal requirements for public drinking water, our drinking waters receive the following physical and chemical treatments before being supplied to our customers:

### Surface Water

- Pretreatment chemicals are added to coagulate impurities that are then settled out in larger sedimentation tanks.
- Water is then filtered through two 40-inch-deep mixed media filters to remove particles.
- Chlorine is added to disinfect water to prevent waterborne diseases.
- The pH of the water is raised to reduce the acidity of the water, helping to prevent internal plumbing corrosion.
- A corrosion inhibitor is used to minimize the pickup of lead and copper from household plumbing into the tap water.
- Sodium fluoride is added to help prevent tooth decay.

### Well Water

The well water does not require pretreatment chemicals for coagulation or filtration. It is, however, treated with chlorine, fluoride, corrosion inhibitor, and pH adjustment.

## Source Water Assessment

The State Department of Environmental Protection (DEP) prepared a Source Water Assessment Program (SWAP) Report for the water supply sources serving this water system. This report notes the key land uses within the water supply protection areas for each source and the potential contamination from these land uses. The watersheds for our sources are primarily a mixture of residential, agricultural, recreational, and forest land. The City of Newburyport has enacted a resource protection ordinance to protect our water supplies. Additionally, the City

has developed a surface water supply protection plan to help monitor and preserve our surface water sources. Residents can help protect the water sources by being careful in the use and storage of hazardous materials such as paints, solvents, pesticides, and fertilizers. The complete SWAP report is available at the Newburyport Water Treatment Plant, the Newburyport Board of Health, or online at <http://www.state.ma.us/dep>, our susceptibility rating is high. For more information, contact Tom Cusick at (978) 465-4466.

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## Community Participation

You are invited to participate in our public forum and discuss any topics about your drinking water. We meet monthly at the DPS Water & Sewer Operations Building, located at 16c Perry Way (Industrial Park). For details and virtual meeting information, check the City Web site at [www.cityofnewburyport.com](http://www.cityofnewburyport.com).

## 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).



## Substances That Could Be in Water

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

## Where Does My Water Come From?

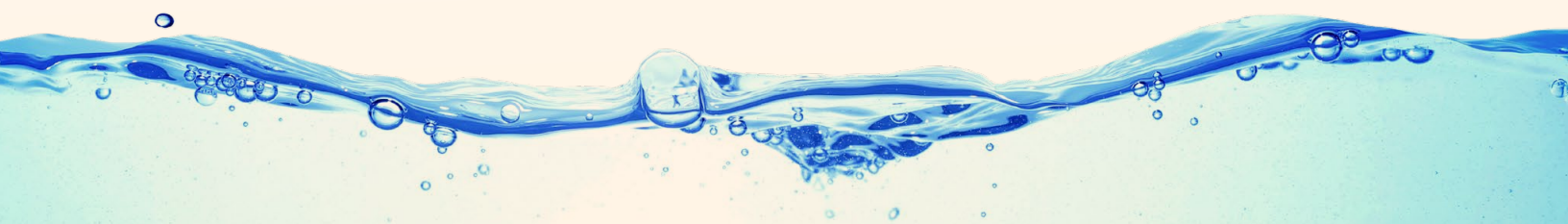
Our drinking water comes from both surface water and groundwater supplies. The surface supplies, which make up 80% of our water, are the Indian Hill Reservoir in West Newbury, the Artichoke Reservoirs in both West Newbury and Newburyport, and the Bartlett Spring Pond in Newburyport. Surface water is treated at the water treatment plant where color, turbidity, and bacteria are removed through filtration. The water is then treated for corrosion control, pH adjustment, disinfection, and fluoridation before delivery to our customers. Groundwater, which makes up 20% of our drinking water, is supplied by two gravel-packed wells (Well #1 and Well #2) located along Ferry Road in Newburyport.

## 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 Thomas D. Cusick, Jr., Water Treatment Operations Superintendent, at (978) 465-4466.



## 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. Some contaminants are measured more than once a year and they will be reported as a range. Within that range, you may see an average or maximum reported limit based on State and Federal regulations for that particular contaminant.

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.

We participated in the 4th stage of the U.S. EPA's Unregulated Contaminant Monitoring Rule (UCMR4) program by performing additional tests on our drinking water. UCMR4 sampling benefits the environment and public health by providing the EPA with data on the occurrence of contaminants suspected to be in drinking water, in order to determine if the EPA 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.

The City has participated in the MA sponsored free PFAS assessment testing program in the beginning of 2021. At this time there is NO MCL violation and we are continuing to monitor for PFAS under state regulations.

### REGULATED SUBSTANCES

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	MCL [MRDL]	MCLG [MRDLG]	AMOUNT DETECTED	RANGE LOW-HIGH	VIOLATION	TYPICAL SOURCE
<b>Barium</b> (ppm)	2020	2	2	0.010	NA	No	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits
<b>Chlorine</b> (ppm)	2020	[4]	[4]	1.89	0.75–1.89	No	Water additive used to control microbes
<b>Fluoride</b> (ppm)	2020	4	4	1.0	0.07–1.00	No	Water additive that promotes strong teeth
<b>Haloacetic Acids [HAAs]</b> (ppb)	2020	60	NA	18	11–24	No	By-product of drinking water disinfection
<b>Nitrate</b> (ppm)	2020	10	10	1.51	0.29–1.51	No	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits
<b>Perchlorate</b> (ppb)	2020	2	NA	0.23	0.10–0.23	No	Inorganic chemicals used as oxidizers in solid propellants for rockets, missiles, fireworks, and explosives
<b>TTHMs [Total Trihalomethanes]<sup>1</sup></b> (ppb)	2020	80	NA	68	27–120	No	By-product of drinking water disinfection
<b>Total Organic Carbon<sup>2</sup></b> (ppm)	2020	TT	NA	3.4	1.3–3.4	No	Naturally present in the environment
<b>Turbidity<sup>3</sup></b> (NTU)	2020	TT	NA	0.32	0.02–0.32	No	Soil runoff
<b>Turbidity</b> (Lowest monthly percent of samples meeting limit)	2020	TT = 95% of samples meet the limit	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)	2018	1.3	1.3	0.09	0/30	No	Corrosion of household plumbing systems; Erosion of natural deposits
<b>Lead</b> (ppb)	2018	15	0	0.0	0/30	No	Lead services lines; Corrosion of household plumbing systems including fittings and fixtures; Erosion of 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 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

**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.

**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.

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

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

## SECONDARY SUBSTANCES

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	SMCL	MCLG	AMOUNT DETECTED	RANGE LOW-HIGH	VIOLATION	TYPICAL SOURCE
Odor (TON)	2020	3	NA	2	1–2	No	Naturally occurring organic materials
pH (Units)	2020	6.5–8.5	NA	8.0	7.2–8.0	No	Naturally occurring

## UNREGULATED SUBSTANCES<sup>4</sup>

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	AMOUNT DETECTED	RANGE LOW-HIGH	TYPICAL SOURCE
Bromodichloromethane (ppb)	2019	4.2	0–4.2	By-product of drinking water disinfection
Chlorodibromomethane (ppb)	2019	1.6	0–1.6	By-product of drinking water disinfection
Chloroform (ppb)	2019	4.7	0–4.7	By-product of drinking water disinfection
Sodium <sup>5</sup> (ppm)	2020	55	NA	Naturally occurring deposits; Road salts; Water treatment chemicals

<sup>1</sup> Some people who drink water containing trihalomethanes in excess of the MCL over many years may experience problems with their livers, kidneys, or central nervous systems, and may have an increased risk of getting cancer.

<sup>2</sup> The value reported under Amount Detected for TOC is the lowest ratio between the percentage of TOC actually removed to the percentage of TOC required to be removed. A value of greater than 1 indicates that the water system is in compliance with TOC removal requirements. A value of less than 1 indicates a violation of the TOC removal requirements.

<sup>3</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>4</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.

<sup>5</sup> The Massachusetts Department of Environmental Protection maintains a guideline level of 20 ppm for sodium.

## Newburyport 2021 Rain Barrel Program

The City of Newburyport has partnered with the Great American Rain Barrel Company in Hyde Park, MA, to offer rain barrels to residents at a discount to help conserve water and save money.

The barrel comes complete with overflow fittings, drain plug, screw-on cover, and a threaded spigot with a choice of two ports to use with either a watering can or a garden hose. The rain barrel arrives with simple instructions for fast and easy installation. Newburyport is offering the Great American Rain Barrel in three earth-tone colors or unpainted. As a resident, you are eligible to purchase rain barrels at the discounted rate of \$69.00 versus the retail price of \$119.

To take advantage of this community-program discount, please go to

[www.greatamericanrainbarrel.com](http://www.greatamericanrainbarrel.com), click on “Community Programs”, and select Newburyport, or send email to [info@tgarb.com](mailto:info@tgarb.com), or call (800) 251-2352.

Barrels will be available for pick up on Thursday, June 24th, 5:00-7:00 p.m. at the Recycling Center, Colby Farm Lane, Newburyport, MA.

Deadline to purchase: June 17th at midnight



**SAVE MONEY, COLLECT RAINWATER  
PROTECT A NATURAL RESOURCE  
WITH A RAIN BARREL FROM  
THE GREAT AMERICAN RAIN BARREL**

**Newburyport 2021 Rain Barrel Program**  
*When You Buy a Rain Barrel, you will:*

- Decrease your water bill by up to 40%.
- Have an alternate source of water during droughts.
- Have a healthy, chlorine and chemical-free water source for plants and gardens.
- Improve residential storm management.
- Slow pollution from runoff.
- Lower municipal water demands & save energy at treatment plants.

**About The Great American Rain Barrel:**

- 100% re-purposed, food grade, UV protected and BPA free barrels. *Produced in Massachusetts.*
- Most durable rain barrels on the market: 3/16" wall thickness.
- Will last for years when properly drained & stored for winter. Pay for themselves in one year.
- Screen filtered to keep mosquitoes out.
- Several rain barrels can be linked together — easy 5-minute setup
- Available Colors: Forest Green, Earth Brown, and Nantucket Grey. Also available unpainted.

**How to Purchase Your Rain Barrel:**

Rain Barrels are available for purchase by residents at the discounted price of \$69.00.

**How to Order:** <https://www.greatamericanrainbarrel.com/community>

**Pick-Up:** Thursday June 24th 5:00-7:00PM Recycling Center, Colby Farm Lane Newburyport, MA

**Deadline:** June 17th, Midnight

## Testing for *Cryptosporidium*

*Cryptosporidium* is a microbial parasite found in surface water throughout the U.S. Although filtration removes *Cryptosporidium*, the most commonly used filtration methods cannot guarantee 100% removal. Our monitoring indicates the presence of these organisms in our source water. Current test methods do not allow us to determine if the organisms are dead or if they are capable of causing disease. Symptoms of infection include nausea, diarrhea, and abdominal cramps.

Most healthy individuals are able to overcome the disease within a few weeks. However, immunocompromised people have more difficulty and are at greater risk of developing severe, life-threatening illness. Immunocompromised individuals are encouraged to consult their doctors regarding appropriate precautions to prevent infection. *Cryptosporidium* must be ingested for it to cause disease, and it may be passed through other means than drinking water.

EPA required public water systems using surface water to conduct sampling for *Cryptosporidium* in source waters. This sampling is used to determine if additional treatment will be necessary to provide protection from microbials. Systems are placed in one of four categories (bins) based on their microbial results. The Newburyport Water Division has been placed in the lowest bin, meaning that no additional treatment will be required.

Sampling conducted for a 2-year period ending in March 2010 (48 total samples collected) showed the presence of a single *Cryptosporidium* oocyst/L in one sample collected. All of the remaining samples were negative. These sample results are the reason for the placement of our water system in the lowest bin classification.

The next sampling period began in October 2016. At that time, we resumed Round 2 testing. The testing was conducted on a monthly basis for a two-year period ending in 2018 as required by EPA. There are no additional positive tests to report.