2021 Annual Water Quality Report
Fitchburg DPW – Division of Water Supply
Fitchburg, Massachusetts
MA DEP PWS ID# - 2097000

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FITCHBURG CITY CLERK

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Opportunity for Public Involvement: Meetings of the Fitchburg Water & Wastewater Commission are typically held at 5:00 p.m. on the third Wednesday of each month at the Fitchburg Legislative Building, 700 Main Street, Fitchburg, MA 01420

The Fitchburg DPW - Division of Water Supply is pleased to present you with our 2021 annual water quality report, also called a Consumer Confidence Report (CCR), that provides details about your drinking water. Within this report you will find information about where your water comes from, what it contains, and how it compares to State and Federal drinking water standards. Your water system is routinely inspected by the Massachusetts Department of Environmental Protection (MA DEP) to determine that it has the technical, financial, and managerial capacity to provide safe drinking water to you. To ensure that we provide the highest quality of water possible, your water system is operated by Massachusetts certified operators who oversee the day to day operations of the water system. We are proud to report that, after having completed more than 10,000 tests over the course of the year, your drinking water met or exceeded all State and Federal standards during 2021. We did have a single monitoring violation (summarized below) in which we inadvertently did not collect one of the quarterly samples for volatile organic compounds.

Fitchburg's Drinking Water Sources

The City of Fitchburg has a total of 7 surface water reservoirs from which it can withdraw water. Together they have a storage capacity of more than 4.8 billion gallons of water! The following table lists the City's reservoirs and their location.

Source Name	MA DEP Source ID #	Source Type	Location of Source
Bickford Pond	2097000-09S	Surface Water	Hubbardston/Princeton
Fitchburg Reservoir	2097000-11S	Surface Water	Ashby
Lovell Reservoir	2097000-04S	Surface Water	Fitchburg
Mare Meadow Reservoir	2097000-06S	Surface Water	Hubbardston/Westminster
Meetinghouse Reservoir	2097000-01S	Surface Water	Westminster
Scott Reservoir	2097000-02S	Surface Water	Fitchburg
Wachusett Lake	2097000-03S	Surface Water	Westminster

Is Fitchburg's Water Treated?

The City makes every effort to provide you with safe and pure drinking water. The City has two filtration plants, the J.A. Provencial and Regional Water Treatment Facilities, which treat and distribute water to Fitchburg residents. Water is also supplied to the Town of Westminster from the Regional Water Treatment Facility. Each of the plants utilize a two-step filtration process to remove any contaminants such as sediment, algae, and bacteria from the source waters. A disinfectant (chlorine) is added to protect you against microbial contaminants and the water is also treated to reduce the potential for lead and copper to leach from building plumbing systems. Fluoride is also added in minimal concentrations to aid in dental health and hygiene. Water quality at the treatment facilities is constantly monitored by us and MA DEP to verify the effectiveness of the existing water treatment systems and to determine if any additional treatment is needed.

- ***Este informe contiene informacion importante acerca de su agua potable. Haga que alguien lo traduzea para usted, o hable con alguien que lo entienda.***

Source Water Assessment and Protection (SWAP) Program

Massachusetts Department of Environmental Protection (MA DEP) has completed a source water assessment and protection (SWAP) program report for the City's water supply sources. SWAP reports assess the susceptibility of public water supply sources. MA DEP's 2002 SWAP report ranked Fitchburg's reservoirs as having high susceptibility. The susceptibility of a water source to contamination does not imply poor water quality. Actual water quality is best reflected by the results of regular water tests. Fitchburg protects its drinking water by monitoring the water for chemicals, treating, filtering, and disinfecting the water supply, and by protecting the land surrounding the reservoirs. The full source water assessment report, which explains the MA DEP ranking, can be seen online at **http://www.mass.gov/eea/docs/dep/water/drinking/swap/cero/2097000.pdf**, or copies of this report can be obtained by calling the Fitchburg Division of Water Supply at (978) 345-9616 ext. 2.

Substances Found in Drinking Water

In nature, all water contains some impurities – there is no such thing as "naturally pure water." Sources of drinking water, both bottled and tap, include reservoirs, lakes, ponds, rivers, streams, 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 substances resulting from animal or human activity. Some of these substances are harmless while others are not. Drinking water suppliers use treatment methods that are appropriate for the quality of their "source water" to ensure that the water supplied to their customers is safe to drink.

Contaminants that may be present in source water (both tap and bottled) include:

- Microbial contaminants - such as viruses and bacteria, which may come from wildlife, septic systems, sewage treatment plants, and livestock operations.
- Inorganic contaminants - such as salts and metals, that can be naturally-occurring or result from storm water runoff, wastewater discharges, or industry.
- Pesticides and herbicides - that may come from a variety of sources such as agriculture, urban storm water runoff, and residential landscaping/household uses.
- Organic chemical contaminants - including synthetic and volatile organic chemicals, which are by-products of industrial processes and petroleum production, and can also come from gas stations, urban storm water runoff, and septic systems.
- Radioactive Contaminants - which can be naturally-occurring or be the result of oil and gas production and/or mining activities.

In order to ensure that tap water is safe to drink, the Massachusetts Department of Environmental Protection (MA DEP) and the U.S. Environmental Protection Agency (EPA) institute regulations that the limit 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. All drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that the water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the EPA's Safe Drinking Water Hotline (800-426-4791).

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 some infants can be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. EPA/Centers for Disease Control and Prevention (CDC) guidelines on lowering the risk of infection by cryptosporidium and other microbial contaminants are available from the Safe Drinking Water Hotline (800-426- 4791).

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. The Fitchburg Division of Water Supply is responsible for providing high quality drinking water, but cannot control the variety of materials used in plumbing components. When water has been sitting in your home's plumbing system for several hours, you can minimize the potential for lead exposure by flushing your tap for 2 to 3 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 or at **http://www.epa.gov/safewater/lead**.

Cross-Connections

A cross connection is a connection between a drinking water pipe and a source of pollution or contaminants. The contaminants or pollution can even come from your own home. For example, when applying fertilizer to a lawn or plants some people use a container that attaches directly to the garden hose. If the water pressure drops due to use of a fire hydrant or water main break while the container with the fertilizer in it is still attached to the hose, fertilizer can be siphoned back (this is called backsiphonage) into the water pipes in your home (and also the drinking water mains in the street) through the garden hose. Using a backflow prevention device on your hose called a hose bibb vacuum breaker will prevent this from occurring. Hose bibb vacuum breakers consist of a spring-loaded check valve that seals against an atmospheric outlet when the water supply is turned on. When the water is turned off, the device vents to atmosphere, thus protecting against backsiphonage conditions. You can purchase these at hardware or plumbing supply stores and it is an inexpensive and great way for you to help protect the water in your home as well as the drinking water system in your community. More elaborate backflow prevention devices are required on water supply lines to industrial and commercial buildings where cross connections exist and also on fire sprinkler systems. For additional information on cross connections, how to purchase a hose bibb vacuum breaker, or the status of your water system's cross connection program, please contact our Backflow Prevention/Water Meter office at 978-345-9616 ext. 2.

Fitchburg's Water Quality Testing Results

We are required to monitor our drinking water for specific contaminants on a regular basis. If we fail to monitor the water or to report results on time; we are in violation of the regulations. The water quality information presented in the table on the last page is generated from the results of more than 10,000 water tests that were completed in 2021 (unless otherwise noted in the table). MA DEP has granted Fitchburg a waiver from testing for arsenic on an annual basis as past results indicated no evidence of this contaminant being present in our water supplies. We did have a single monitoring violation (summarized below) in which we inadvertently did not collect one of the quarterly samples for volatile organic compounds. With that exception, your drinking water met or exceeded all EPA and MA DEP standards for 2021.

Definitions of abbreviations used in the tables:

90th Percentile: Out of every 10 homes/locations sampled, 9 were at or below this level.
MCL (Maximum Contaminant Level): The highest level of a contaminant that is allowed in drinking water. MCLs are set as close to 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, such as chlorine, 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, such as chlorine, 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.
TT (Treatment Technique): A required process intended to reduce the level of a contaminant in the drinking water.
AL (Action Level): The concentration of contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow.
ppm (parts per million): A unit of measure, equal to milligrams per liter - about one drop in one 55- gallon barrel of water.
ppb (parts per billion): A unit of measure, equal to micrograms per liter – about one drop in 1,000 55-gallon barrels of water.
NTUs (Nephelometric Turbidity Units): the cloudiness or haziness of a fluid caused by suspended solids that are usually invisible to the naked eye
ND = Not Detected
SMCL (Secondary Maximum Contaminant Level): These standards are developed to protect the aesthetic qualities of drinking water and are not health based.
Unregulated contaminants: Contaminants for which there are no established drinking water standards. The purpose of unregulated contaminant monitoring is to assist regulatory agencies in determining their occurrence in drinking water and whether future regulation is warranted.
Manganese Advisory: The EPA has established a lifetime health advisory (HA) value of 300 ppb for manganese to protect against concerns of potential neurological effects, and a one-day and 10-day HA of 1000 ppb for acute exposure.
ORSG (Massachusetts Office of Research and Standards Guideline) – This is the concentration of a chemical in drinking water, at or below which, adverse health effects are unlikely to occur after chronic (lifetime) exposure. If exceeded, it serves as an indicator of the potential need for further action.
pCi/L = picocuries per liter (a measure of radioactivity)

Drinking Water Monitoring Violation

We had a single drinking water violation in that we inadvertently failed to collect a required sample in a timely manner, which is a monitoring and reporting violation. Because we did not collect the required sample, we did not know whether the contaminants were present in your drinking water at that time, and are unable to tell you whether your health was at risk during that time. The contaminants for which monitoring was not done are listed in the table below, with the period during which samples should have been taken, the number of samples each contaminant required, the number taken, and when the required sampling was conducted.

2021 MONITORING VIOLATION					
Contaminant	Monitoring Period	Number of Samples Required	Number of Samples Collected	Date Sampling Conducted	Health Effects
Volatile Organic Contaminants	7/1/21-9/30/21	1	0	11/21/21	Unknown for the missed sampling period.

2021 TESTING RESULTS FOR BACTERIA						
Regulated Contaminant	Highest % Positive in any Month	Total # Positive	MCL	MCLG	Violation YES/NO	Possible Source(s) of Contamination
Total Coliform	0%	0	<5%	0	NO	Naturally present in the environment
E. Coli (a)	0%	0	(a)	0	NO	Animal and human fecal waste

(a) Compliance with the Fecal Coliform/E. Coli MCL is determined upon additional repeat testing if coliform bacteria are detected.

2021 TESTING RESULTS FOR TURBIDITY					
Turbidity	MCL	Lowest Monthly % of Samples	Highest level detected	Violation YES/NO	Possible Source(s) of Contamination
Daily Turbidity Compliance (NTU)	1.0 NTU	-------	0.30 NTU	NO	Soil runoff
Monthly Compliance	At least 95% < 0.35 NTU	100.00%	0.30 NTU	NO	

- Turbidity is a measure of the cloudiness of water. We monitor it because it is a good indicator of water quality and a measure of the effectiveness of our treatment process.
- Monthly turbidity compliance is related to a specific treatment technique (TT). Our system filters the water so that at least 95% of our samples each month must be below the turbidity limits specified in the regulations.

MOST RECENT (2019) TESTING RESULTS FOR LEAD AND COPPER								
Regulated Contaminant	Date(s) Collected (b)	90th Percentile	Action Level	MCLG	# of sites sampled	# of sites above AL	Violation YES/NO	Possible Source(s) of Contamination
Lead (ppb)	8/26/19 – 8/30/19	3 ppb	15 ppb	0	30	0	NO	Corrosion of household plumbing systems; erosion of natural deposits
Copper (ppm)	8/26/19 – 8/30/19	0.2 ppm	1.3 ppm	1.3	30	0	NO	Corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives

2021 TESTING RESULTS FOR REGULATED CONTAMINANTS							
Regulated Contaminant	**Date(s) Collected**	**Highest level allowed MCL or MRDL**	**Highest level detected**	**Range detected**	**Goals MCLG MRDLG**	**Violation YES/NO**	**Possible Source(s) of Contamination**
Chlorine Residual (ppm)	Continuous monitoring	4.0 ppm	0.77 ppm	0.48 ppm - 0.77 ppm	4.0 ppm	NO	Disinfection of drinking water
Chlorobenzene (ppb)	4/26/21 – 11/21/21	100.0	1.7 ppb	ND – 1.7	100.0	NO	Discharge from and agricultural chemical factories
Haloacetic Acids (HAA5) (ppb)	Quarterly	60.0 ppb (running annual average)	33.0 ppb (running annual average)	26.0 ppb - 53.0 ppb	----	NO	By-product of drinking-water chlorination
Trihalomethanes (TTHMs) (ppb)	Quarterly	80.0 ppb (running annual average)	66.0 ppb (running annual average)	56.0 ppb - 79.0 ppb	----	NO	By-product of drinking-water chlorination
Barium (ppm)	4/26/21	2.0 ppm	0.009 ppm	0.008 - 0.009 ppm	2.0 ppm	NO	Erosion of natural deposits; discharge of drilling wastes; discharge from metal refineries
Fluoride (ppm)	Continuous monitoring	4.0 ppm	0.70 ppm	0.50 ppm - 0.70 ppm	4.0 ppm	NO	Erosion of natural deposits; water additive for dental health; discharge from fertilizer and aluminum factories
Nitrate (ppm)	4/15/19, 4/16/19	10.0 ppm	0.082 ppm	0.053 - 0.082 ppm	10 ppm	NO	Runoff from fertilizer use; septic system effluent; erosion of natural deposits
PFAS6 (ppb)	4/5/21 – 11/23/21	20.0 ppb	4.34 ppb	ND - 4.34 ppb	N/A	NO	Discharges and emissions from industrial and manufacturing sources associated with the production or use of these PFAS, including production of moisture and oil resistant coatings on fabrics and other materials. Additional sources include the use and disposal of products containing these PFAS, such as fire-fighting foams.
Radium 226 & 228 (pCi/L), combined	4/23/17	5 pCi/L	0.80 pCi/L	0.49 pCi/L - 0.80 pCi/L	0	NO	Erosion of natural deposits

2021 TESTING RESULTS FOR UNREGULATED AND SECONDARY CONTAMINANTS						
Unregulated and Secondary Contaminants	**Date(s) Collected**	**Result or Range Detected**	**Highest Detected or Average Detected**	**SMCL**	**ORSG**	**Possible Source(s) of Contamination**
Inorganic Contaminants						
Sodium (ppm)	4/26/21	22 - 30	26	---	20	Discharge from the use and improper storage of sodium-containing de-icing compounds or in water-softening agents
Strontium (ppb)	3/9/15, 6/2/15, 9/2/15, 12/2/15	18.0 ppb – 38.0 ppb	28.0 ppb	----	----	Erosion of natural deposits
Organic Contaminants						
Bromodichloromethane (ppb)	4/26/21 - 11/21/21	2.0 – 4.9	4.9	0.5	---	Trihalomethane, by-product of drinking water chlorination
Chloroform (ppb)	4/15/19 - 10/29/19	7.0 – 29.8	29.8	---	70	By-product of drinking water chlorination
Dibromodichloromethane (ppb)	4/15/19 - 4/16/19	ND – 1.5	0.75	---	---	By-product of drinking water chlorination
Perfluorohexanoic acid (ppb) (PFHxA)	4/5/21 - 11/23/21	1.92	1.92	---	---	Manmade chemical; used in products to make them resistant to stains, grease, heat, and water
Secondary Contaminants						
Aluminum (ppm)	11/21/21	28.0 – 237.0	133	200	200	By-product of treatment process
Chloride (ppm)	11/21/21	13 – 29	21.0	---	250	Road de-icing chemicals; use of inorganic fertilizers; septic system effluent; animal feeds
Color (C.U.)	11/21/21	<5	<5	15	---	Naturally occurring organic material
Copper (ppm	11/21/21	ND – 0.024	0.021	15	---	Naturally occurring
Manganese (ppm)	11/21/21	ND – 0.051	0.051	0.05	0.30	Erosion of natural deposits
Odor (T.O.N.)	11/21/21	ND	ND	3 T.O.N.	---	Erosion of natural deposits; leaching from wood preservatives
pH	11/21/21	6.8 – 6.9	6.90	6.5 - 8.5	---	-----
Total Dissolved Solids (TDS) (ppm)	11/21/21	64 – 68	66	500	---	Erosion of natural deposits
Zinc (ppm)	11/21/21	ND – 0.039	0.020	5	---	Erosion of natural deposits; leaching from plumbing materials