ANNUAL WATER QUALITY REPORT

Reporting Year 2021

Presented By

Dartmouth Water Division

Este relatório contém informações importantes sobre a água potável. Ter alguém que traduzi-lo para você, ou falar com alguém que entende-lo.

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Continuing Our Commitment

Once again, we proudly present our annual water quality report. With a focus on customer service and efficient operations, we continue to strive for excellence through new water quality programs that will ensure reliable drinking water supplies for years to come. To maintain our commitment to you, we routinely collect and test water samples every step of the way, from the source waters right to your home or business, checking purity and identifying potential problems. We work only with state-certified laboratories that perform the required testing to maintain our quality assurance program. Staffed by highly trained scientists and technicians, these labs have the latest and most sophisticated instruments and can measure substances down to 1 part per trillion! We are committed to providing you with this information about your water supply because customers who are well informed are our best allies in supporting improvements necessary to maintain the highest drinking water standards.

This edition covers all testing completed from January through December 2021. We remain vigilant in meeting the challenges of source water protection, water conservation, and community education while continuing to serve the needs of all of our water users. Please visit our annual open house, held at the beginning of May, when we celebrate National Drinking Water Week.

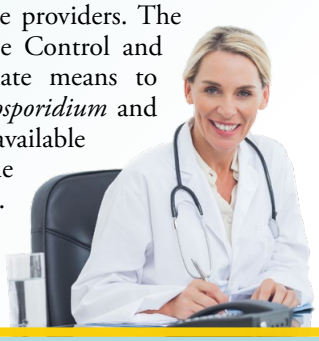
Water Conservation Tips

You can play a role in conserving water and save yourself money in the process by becoming conscious of the amount of water your household is using and looking for ways to use less whenever you can. It is not hard to conserve water. Here are a few tips:

- Automatic dishwashers use 15 gallons for every cycle, regardless of how many dishes are loaded. So get a run for your money and load it to capacity.
- Turn off the tap when brushing your teeth.
- Check every faucet in your home for leaks. Just a slow drip can waste 15 to 20 gallons a day. Fix it and you can save almost 6,000 gallons per year.
- Check your toilets for leaks by putting a few drops of food coloring in the tank. Watch for a few minutes to see if the color shows up in the bowl. It is not uncommon to lose up to 100 gallons a day from an invisible toilet leak. Fix it and you save more than 30,000 gallons a year.
- Use your water meter to detect hidden leaks. Simply turn off all taps and water-using appliances. Then check the meter after 15 minutes. If it moved, you have a leak.

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.



Where Does My Water Come From?

Dartmouth's water is supplied from 14 gravel-packed or naturally developed groundwater wells and one pumping station. Wells A, B, C, F-1, and F-2 have a combined capacity of 1,555 gallons per minute (gpm). These wells are located in the area of 299 Chase Road. Wells D, E-1, and E-2 have a combined capacity of 1,550 gpm. These wells are located in the area of 687 Chase Road. Wells V-1, V-2, V-3, Panelli-1, Panelli-2, Panelli-3, and Panelli Wellfield 4 have a combined capacity of 1,820 gpm. These wells are located in the area of 579 Old Westport Road. A map showing where the wells are located is available at the Water Division office at 751 Allen Street.

Purchased water from the City of New Bedford is treated at the Quittacas Water Treatment Plant and comes from a surface supply comprising five ponds. The principal storage area is the Little Quittacas Pond, located in the Town of Rochester. The other ponds are Great Quittacas, Pocksha, Assawompsett, and Long Pond, situated in the towns of Freetown, Lakeville, and Middleborough. Treatment consists of conventional filtration, disinfection, corrosion control, and fluoridation. Dartmouth pumps the water into our system via a facility located on Faunce Corner Road with a maximum rate of 4,000 gpm.

Community Participation

The Board of Public Works meets monthly. if you are interested in discussing water department issues with the board, please call the Department of Public Works at (508) 999-0740 and ask to be added to the agenda.

Questions?

Dartmouth Water is a division of the Department of Public Works. For more information about this report, or for any questions relating to your drinking water or this report, please call Steven M. Sullivan, Water and Sewer Superintendent, at (508) 999-0742.

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:

> "When the well is dry, we know the worth of water."
>
> —*Benjamin Franklin*

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.

Violation Information

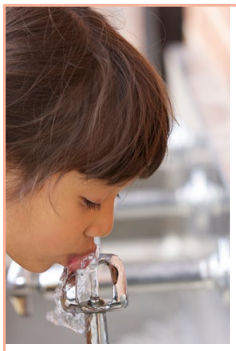
We routinely monitor for the presence of drinking water contaminants. Testing results from May to November 2021 show that our system exceeded the standard or maximum contaminant level (MCL) for five haloacetic acids (HAA5). The standard for HAA5 is 60 parts per billion (ppb). It is determined by averaging all samples collected at each sampling location for the past 12 months. The level of HAA5 averaged at our system's Reed Road location for November was 64 ppb.

The town has been working on a comprehensive plan to address HAA5 concerns for several years. Ongoing distribution improvements have been underway throughout the town. Dartmouth converted from chlorine to chloramines as a means of disinfecting our water in March 2021. We have seen improvement and expect additional changes to alleviate this problem. Some people who drink water containing haloacetic acids in excess of the MCL over many years may have an increased risk of getting cancer.

During routine monitoring in July 2021, our public water system tested positive for total coliforms. On July 7, 2021, we were notified verbally by our laboratory of three total coliform-positive (E. coli-absent) samples collected on July 6, 2021. Repeat samples were collected on July 8, 2021, as required. One out of six repeat samples was also total coliform positive (E. coli absent). These two total coliform positive detections (more than 5 percent of our finished water samples) constituted a Revised Total Coliform Rule Treatment Technique Trigger (RTCR TTT). This RTCR TTT required an RTCR Level 1 Assessment be completed and submitted to the MADEP Southeast Regional Office by August 4, 2021.

On September 8, 2021, we were informed that one of our routine bacteria samples collected on September 7, 2021, tested positive for total coliforms. As required by the Ground Water Rule, we collected a sample from 579 Treatment Plant raw water for fecal contamination analysis. The 579 Treatment Plant raw water sample was positive for fecal contamination (E. coli). In response, we sent notices to all of our customers within 24 hours of learning of this positive sample. We first shut off the wells supplying this plant. We then tested the wells individually and found that two of the three wells, Panelli-1 and Panelli-3, were E. coli positive. These wells will remain off-line until we make this treatment plant 4-log compliant. It is unknown at this time when this will be completed.

Fecal indicators are microbes whose presence indicates that the water may be contaminated with human or animal wastes. Microbes in these wastes can cause short-term effects, such as diarrhea, cramps, nausea, headaches, or other symptoms. They may pose a special health risk for infants, young children, some of the elderly, and people with severely compromised immune systems.



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.

Source Water Assessment Program

Dartmouth

MADEP has prepared a Source Water Assessment Program (SWAP) report for the water supply sources serving the Dartmouth Water Division system. The SWAP report recommends that Dartmouth establish a wellhead protection committee and also commends the community for taking an active role in promoting source protection measures in the water supply protection areas. The SWAP report recommends that we continue to monitor Zone I and remove all non-water supply activities. The report also recommends that we educate residents on ways they can help protect drinking water sources and work with emergency response teams to ensure they are aware of the stormwater drainage in Zone II. Residents can help protect sources by practicing good septic system maintenance, supporting water supply protection initiatives at town meetings, properly disposing of hazardous household chemicals during hazardous materials collection days, and limiting pesticide and fertilizer use. The complete SWAP report is available at the Water Division on Allen Street and online at https://www.mass.gov/doc/dartmouth-water-division-swap-report/download. For more information, call Steven Sullivan at (508) 999-0742.

New Bedford

The SWAP program assesses the susceptibility of public water supplies to potential contamination by microbiological pathogens and chemicals. A susceptibility ranking of high was assigned to the New Bedford Water Division using the information collected during the assessment by MADEP. The complete SWAP report is available at the New Bedford Water Division Office, 1105 Shawmut Avenue, New Bedford. For more information, contact Ymane Galotti at (508) 763-2231.

Level 1 and 2 Assessment Update

Coliforms are bacteria that are naturally present in the environment and used as an indicator that other, potentially harmful, waterborne pathogens may be present or that a potential pathway exists through which contamination may enter the drinking water distribution system. We found coliforms, indicating the need to look for potential problems in water treatment or distribution. When this occurs, we are required to conduct assessments to identify problems and correct any problems that were found during these assessments.

During the past year, one Level 1 assessment was required for our water system. One Level 1 assessment was completed. In addition, we were required to take one corrective action, and we completed that action.

E. coli are bacteria whose presence indicates that the water may be contaminated with human or animal wastes. Human pathogens in these wastes can cause short-term effects, such as diarrhea, cramps, nausea, headaches, or other symptoms. They may pose a greater health risk for infants, young children, the elderly, and people with severely compromised immune systems. We found *E. coli* bacteria, indicating the need to look for potential problems in water treatment or distribution. When this occurs, we are required to conduct assessments to identify problems and correct any problems that were found during these assessments.

We were required to complete a Level 2 assessment because we found *E. coli* in our water system. In addition, we were required to take one corrective action, and we completed that action.

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.

Although *E. coli* was detected, the water system is not in violation of the *E. coli* MCL.

REGULATED SUBSTANCES

				Dartmouth Water Division			
SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	MCL [MRDL]	MCLG [MRDLG]	AMOUNT DETECTED	RANGE LOW-HIGH	VIOLATION	TYPICAL SOURCE
Barium (ppm)	2021	2	2	NA	NA	No	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits
Chlorine[1,2] (ppm)	2021	[4]	[4]	0.99	0.13–1.64	No	Water additive used to control microbes
Combined Radium (pCi/L)	2021	5	0	0.72	ND–1.20	No	Erosion of natural deposits
Fluoride (ppm)	2021	4	4	NA	NA	No	Water additive that promotes strong teeth
Haloacetic Acids [HAAs]–Stage 2[3] (ppb) **HAAs [10376 965 Reed Road]** (ppb)	2021	60	NA	71 63 72 64	56–110 16–110 44–74 22–33	Yes	By-product of drinking water disinfection
Nitrate (ppm)	2021	10	10	0.61	ND–0.61	No	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits
Perchlorate (ppb)	2020	2	NA	0.12	0.07–0.12	No	Inorganic chemicals used as oxidizers in solid propellants for rockets, missiles, fireworks, and explosives
PFAS6 (ppt)	2021	20	NA	3.52	ND–5.8	No	Industrial and manufacturing sources for moisture- and oil-resistant coatings on fabrics and other materials; Firefighting foams
Total Coliform Bacteria (positive samples)	2021	TT	NA	10	NA	Yes	Naturally present in the environment
Total Organic Carbon (TOC)[4] (ppm)	2021	TT	NA	NA	NA	No	Naturally present in the environment
TTHMs [total trihalomethanes]–Stage 2[1,3] (ppb)	2021	80	NA	54	40–83	No	By-product of drinking water disinfection
Turbidity[5] (NTU)	2021	TT	NA	NA	NA	No	Soil runoff
Turbidity (lowest monthly percent of samples meeting limit)	2021	TT = 95% of samples meet the limit	NA	NA	NA	No	Soil runoff

REGULATED SUBSTANCES

				New Bedford Water			
SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	MCL [MRDL]	MCLG [MRDLG]	AMOUNT DETECTED	RANGE LOW-HIGH	VIOLATION	TYPICAL SOURCE
Barium (ppm)	2021	2	2	0.0074	NA	No	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits
Chlorine[1,2] (ppm)	2021	[4]	[4]	1.70	0.97–2.32	No	Water additive used to control microbes
Combined Radium (pCi/L)	2021	5	0	0.5	NA	No	Erosion of natural deposits
Fluoride (ppm)	2021	4	4	0.7	0.4–0.8	No	Water additive that promotes strong teeth
Haloacetic Acids [HAAs]–Stage 2[3] (ppb) **HAAs [10376 965 Reed Road]** (ppb)	2021	60	NA	38	24.4–56.2	Yes	By-product of drinking water disinfection
Nitrate (ppm)	2021	10	10	NA	NA	No	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits
Perchlorate (ppb)	2020	2	NA	NA	NA	No	Inorganic chemicals used as oxidizers in solid propellants for rockets, missiles, fireworks, and explosives
PFAS6 (ppt)	2021	20	NA	0.74	ND–2.8	No	Industrial and manufacturing sources for moisture- and oil-resistant coatings on fabrics and other materials; Firefighting foams
Total Coliform Bacteria (positive samples)	2021	TT	NA	NA	NA	Yes	Naturally present in the environment
Total Organic Carbon (TOC)[4] (ppm)	2021	TT	NA	2.75	2.21–3.53	No	Naturally present in the environment
TTHMs [total trihalomethanes]–Stage 2[1,3] (ppb)	2021	80	NA	37.9	24–53.2	No	By-product of drinking water disinfection
Turbidity[5] (NTU)	2021	TT	NA	0.18	0.04–0.18	No	Soil runoff
Turbidity (lowest monthly percent of samples meeting limit)	2021	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.

				Dartmouth Water Division		New Bedford Water			
SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	AL	MCLG	AMOUNT DETECTED (90TH %ILE)	SITES ABOVE AL/ TOTAL SITES	AMOUNT DETECTED (90TH %ILE)	SITES ABOVE AL/ TOTAL SITES	VIOLATION	TYPICAL SOURCE
Copper (ppm)	2021	1.3	1.3	0.11	0/60	0.0169[6]	0/30	No	Corrosion of household plumbing systems; Erosion of natural deposits
Lead (ppb)	2021	15	0	0.011	4/60	2.3[6]	0/30	No	Lead service lines; Corrosion of household plumbing systems including fittings and fixtures; Erosion of natural deposits

SECONDARY SUBSTANCES (NEW BEDFORD WATER)

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	SMCL	MCLG	AMOUNT DETECTED	RANGE LOW-HIGH	VIOLATION	TYPICAL SOURCE
Aluminum (ppb)	2021	200	NA	0.13	NA	No	Erosion of natural deposits; Residual from some surface water treatment processes
Chloride (ppm)	2021	250	NA	26.8	NA	No	Runoff/leaching from natural deposits
Manganese[7] (ppb)	2021	50	NA	0.0085	NA	No	Leaching from natural deposits
Sulfate (ppm)	2021	250	NA	15.6	NA	No	Runoff/leaching from natural deposits; Industrial wastes
Total Dissolved Solids [TDS] (ppm)	2021	500	NA	102	NA	No	Runoff/leaching from natural deposits
Zinc (ppm)	2021	5	NA	0.0065	NA	No	Runoff/leaching from natural deposits; Industrial wastes

UNREGULATED SUBSTANCES[8]

		Dartmouth Water Division		New Bedford Water		
SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	AMOUNT DETECTED	RANGE LOW-HIGH	AMOUNT DETECTED	RANGE LOW-HIGH	TYPICAL SOURCE
Bromodichloromethane (ppb)	2021	4.4	ND–4.5	4.14	NA	By-product of drinking water disinfection
Chlorodibromomethane (ppb)	2021	1.6	ND–1.6	NA	NA	By-product of drinking water disinfection
Chloroform (ppb)	2021	33.5	ND–39.2	14.1	NA	By-product of drinking water disinfection
Dibromochloromethane (ppb)	2021	0.9	ND–1.4	NA	NA	By-product of drinking water disinfection
Sodium[9] (ppm)	1/4/2020	55.7	48.1–55.7	29[10]	NA[10]	Natural sources; Runoff from use as salt on roadways; By-product of corrosion control

OTHER UNREGULATED SUBSTANCES (DARTMOUTH WATER DIVISION)[8]

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	AMOUNT DETECTED	RANGE LOW-HIGH	TYPICAL SOURCE
Bromodichloroacetic Acid (ppb)	2021	4.25	ND–7.35	By-product of drinking water chlorination
Dichloroacetic Acid (ppb)	2021	37	9.5–50.7	By-product of drinking water chlorination
Monobromoacetic Acid (ppb)	2021	1.6	ND–1.6	By-product of drinking water disinfection
Monochloroacetic Acid (ppb)	2021	4.9	2.5–7.1	By-product of drinking water disinfection
Trichloroacetic Acid (ppb)	2021	18.2	4.1–41.8	By-product of drinking water chlorination

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.

Level 1 Assessment: A Level 1 assessment is a study of the water system to identify potential problems and determine (if possible) why total coliform bacteria have been found in our water system.

Level 2 Assessment: A Level 2 assessment is a very detailed study of the water system to identify potential problems and determine (if possible) why an *E. coli* MCL violation has occurred and/or why total coliform bacteria have been found in our water system on multiple occasions.

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.

Table Talk

Get the most out of the Testing Results data table with this simple suggestion. In less than a minute, you will know all there is to know about your water:

> For each substance listed, compare the value in the Amount Detected column against the value in the MCL (or AL, SMCL) column. If the Amount Detected value is smaller, your water meets the health and safety standards set for the substance.

Other Table Information Worth Noting

Verify that there were no violations of the state and/or federal standards in the Violation column. If there was a violation, you will see a detailed description of the event in this report.

If there is an ND or a less-than symbol (<), that means that the substance was not detected (i.e., below the detectable limits of the testing equipment).

The Range column displays the lowest and highest sample readings. If there is an NA showing, that means only a single sample was taken to test for the substance (assuming there is a reported value in the Amount Detected column).

If there is sufficient evidence to indicate from where the substance originates, it will be listed under Typical Source.

[1] The MCL and the average results are based on the highest running annual average; the range detected represents individual sample results.
[2] DPI commenced treatment of its filtered water with combined chlorine (chlorine and ammonia) on November 4, 2002. This is measured in terms of total chlorine.
[3] Some people who drink water containing trihalomethanes or haloacetic acids in excess of the MCL over many years may experience problems with their liver, kidneys, or central nervous system and may have an increased risk of getting cancer.
[4] 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.
[5] 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.
[6] Sampled in 2020.
[7] The U.S. EPA and MADEP have established public health advisory levels for manganese to protect against concerns of potential neurological effects and a 1-day and 10-day health advisory of 100 ppb for acute exposure.
[8] 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.
[9] MADEP maintains a guideline of 20 ppm for sodium.
[10] Sampled in 2021.