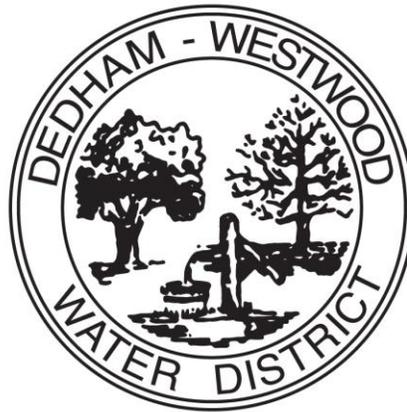


Dedham-Westwood Water District



2021 WATER QUALITY REPORT

MassDEP PUBLIC WATER SUPPLY ID No.: 3073000

Board of Water Commissioners

Dedham

Robert Alexander | Vice Chair
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Westwood

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The Water We Drink

Dedham-Westwood Water District (DWWD) is pleased to present our Annual Water Quality Report for the calendar year 2021. It is designed to inform you about the quality of your drinking water. We are committed to providing you with high quality drinking water which is so fundamental for our communities and way of life.

The Massachusetts Department of Environmental Protection (MassDEP) routinely inspects and evaluates our water system for its technical, financial, and managerial capacity to provide safe drinking water to you, our customers. To ensure that we provide the highest quality of drinking water available, Massachusetts Licensed Drinking Water Operators oversee the operations of your water system 24 hours a day. During 2021, \$4,375,000 was invested into the districts infrastructure, of which \$849,000 was provided through a ten-year interest free loan from the MWRA's Local Water System Assistance Program. Significant projects included new and replacement water mains on Eastern Avenue, Pine Street, Schiller Road, and Ridge Streets in Dedham and Carroll Court and a portion of the South Bound Lane of Providence Highway in Westwood. In total, over 6,100 linear feet of water mains were replaced within the distribution system along with the replacement of 25 hydrants, 55 gate valves, 27 water services and 695 water meters.

In 2021, the District made improvements at its White Lodge Treatment Plant in Westwood. The improvements included installation of a new Orthophosphate chemical feed system to help reduce internal corrosion within the supply pipes, new chemical feed pumps and piping for the existing Fluoride and Potassium Hydroxide dosing systems, insulation of the piping at well #1, and over 60 linear feet of 20-inch diameter discharge piping.

New Chemical Feed System



New Chemical Feed Pumps



The District also performed renovations at its office located at 50 Elm Street. These renovations included the complete remodeling of the interior of the building, which had not seen any major improvements since 1981. Most notably, these renovations made the facility fully ADA compliant.

Updated Front Desk and Customer entry



Main Office Improvements



Public Participation

We ask that all our customers help protect our water sources and use water wisely. Important educational information may be found with your bill or on our website. The Board of Water Commissioners, three from Dedham and three from Westwood, appointed by the Select Board of each town respectively, normally meet on the first and third Tuesdays of each month. The public is welcome to attend. If you have any questions about this report, please contact Executive Director, Blake Lukis, at 781-461-2776.

What is the Source of Dedham -Westwood Water?

Your drinking water supply is local. The source of your drinking water is groundwater, water that is present below the earth's surface in sand and gravel pore spaces, from seventeen wells. Four wells are in Westwood by the Neponset River near University Ave. and one well is located by Rock Meadow Brook near Dover Rd. In Dedham, one well is adjacent to the Neponset River near University Ave. and eleven wells are located by the Charles River near Bridge Street. We serve a population of about 41,630 through approximately 13,251 meters and customer service lines. The Dedham-Westwood Water District has emergency water connections with Boston, Norwood, Needham and the MWRA. Last year, we obtained about 4% of the water supply from the MWRA. For a copy of the 2021 MWRA Water Quality report, please call us or visit www.mwra.com.

How are the Sources of Drinking Water Protected?

The MassDEP prepared a Source Water Assessment Program (SWAP) Report for the water supply sources serving our water system. The purpose of the report was to determine the susceptibility of our drinking water sources to contamination sources so that protection efforts can be best targeted. The results of the assessment are detailed in the report, which is available online at <http://www.mass.gov/eea/docs/dep/water/drinking/swap/nero/3073000.pdf> or at our office. The report assigns a high susceptibility ranking to the DWWD sources due to hazardous materials storage and use, transportation

corridors and residential land use. The high threat activities listed by MADEP are those that typically use, produce, or store contaminants of concern, which if improperly managed, are potential sources of contamination. Both Dedham and Westwood have water resource and aquifer protection zoning bylaws to protect our drinking water sources. Residents and businesses are encouraged to take steps to protect drinking water sources—especially those living and working in proximity to the supply sources. Measures include proper use and disposal of hazardous materials like fertilizers and pesticides, properly disposing of pet waste and using environmentally friendly deicers.

Is My Drinking Water Treated?

Licensed Drinking Water Operators continuously monitors the treatment of your drinking water with a multi-step process. The water is first aerated which helps oxidize minerals in the water such as iron and manganese. Next, the water is filtered to remove any suspended material. Chlorine is added to provide disinfection. The pH of the water is adjusted to an optimal level, so it is not corrosive to pipes and plumbing fixtures and Orthophosphate is added as a corrosion control measure. Finally, fluoride is added to prevent dental cavities.

Substances Found in Tap Water

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. Contaminants that may be present in source water include:

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

To ensure that tap water is safe to drink, the Department of Environmental Protection and the U.S. Environmental Protection Agency (EPA) prescribe regulations that 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 level of protection for public health. Drinking water, including bottled water, may be reasonably expected to contain at least small amounts of some contaminants. The presence of these contaminants does not necessarily pose 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. Immuno-compromised persons, such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders and some elderly and 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 appropriate means to lessen the risk of infection by

Cryptosporidium and other microbiological contaminants are available from the Safe Drinking Water Hotline (800-426-4791).

DWWD continues to urge MassDOT to take measures to reduce the amount of sodium and chloride they apply during deicing operations which ends up in the Public Water Supply Wells situated near the highway.

Cross Connection Program

A *cross connection* is any temporary or permanent arrangement or connection between a public water system or consumer's drinking water system and any source or system containing non-potable water or other substances. One example of a cross connection is the piping between a public water system and a customer's lawn irrigation sprinkler system. The garden hose causes the most common cross connection.

Backflow is the undesirable reversal of flow of non-potable water or other substances through a cross connection and into the piping of a public water system or consumer's potable water system. The best way to prevent backflow is to make sure there is no connection between potable and non-potable sources. Never submerge a hose in soapy water buckets, pools, tubs, sinks, drains or chemicals. Purchase and install a hose bib vacuum breaker for all threaded water fixtures. These inexpensive, easy to install devices are found at local hardware stores. Contact your plumber or call us at 781-329-7090 with any questions.

Hose Connection
Vacuum Breaker



Dedham-Westwood Water District has a Cross Connection Control Program. See the results for our 2021 program that we submit to the MADEP on our website- <http://www.dwwd.org/cross-connection-control-program> or call Stephanie Costa at 781-461-2778. We survey all non-residential properties that we supply for cross connections and we test all approved backflow prevention devices on approved cross connections.

Water Conservation

All water users are encouraged to conserve water. Additional information may be found on our website including our Rebate Program for low flow toilets and water efficient washing machines. We offer free low flow showerheads and faucet aerators at our office. We also offer free rain sensors for automatic sprinklers. Some general outdoor water conservation tips include using soaker hoses, using plenty of mulch, selecting landscaping that does well without supplemental watering, and repairing any leaks irrigation systems develop.

DWWD WATER QUALITY TEST RESULTS

The data presented in the following tables are from testing performed in 2021 on the Dedham-Westwood Water District Supply, unless otherwise noted. Over the course of a year, the District takes hundreds of water samples to ensure its quality and your safety. The tables below show only those parameters that were detected in the water.

DEFINITIONS TO HELP YOU UNDERSTAND TEST RESULTS:

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.

SMCL (Secondary Maximum Contaminant Level): These standards are developed to protect aesthetic qualities of drinking water and are not health based.

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 expected risk to health. MRDLGs do not reflect the benefits of the use of disinfectants to control microbial contaminants.

ND (Not Detected): Indicates that the substance was not found by laboratory analysis.

NA: Not Applicable

OSRG (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.

AL (Action Level): The concentration of a contaminant that, if exceeded, triggers treatment or other requirements, which a water system must follow.

90th Percentile: 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.

RAA (Running Annual Average): The average of four consecutive quarters of data.

ppm (parts per million or mg/L): 1 drop in 10 gallons, 1 inch in 16 miles, or one penny in \$10,000.

ppb (parts per billion or ug/L): 1 drop in 10,000 gallons, 1 inch in 16,000 miles, or one penny in \$10,000,000.

ppt (parts per trillion or ng/L): 1 drop in 10,000,000 gallons, 1 inch in 16,000,000 miles or one penny in \$10,000,000,000.

pCi/L: picocuries per liter (a measure of radioactivity)

REGULATED SUBSTANCES

PARAMETER units	Range	Max	Average	MCL	MCLG	Compliance achieved?	Source
¹ Fluoride ppm	0.37-0.63	0.63	0.55	4	4	Yes	Water additive which promotes strong teeth.
Nitrate ppm Collected on 1/29/21	0.14-0.68	0.68	0.41	10	10	Yes	Runoff from fertilizer use, leaching from septic tanks, sewage; erosion of natural deposits.
² Chlorine ppm	Range of treatment plant effluent values; 0.93-1.46. Range of individual distribution samples; 0.01-2.09	1.46; 2.09	Average of all treatment plant effluent values; 1.24.Highest quarterly running annual average; 0.81	MRDL=4	MRDLG=4	Yes	Water additive used to control microbes.
Perchlorate ppb Collected on 8-20-2021	ND-0.05	0.05	0.025	2.0	N/A	Yes	Rocket propellants, fireworks, munitions, flares, blasting agents.
PFAS6 ppt Collected monthly beginning 4-2021	9.60-18.3	18.3	17.47	20	---	Yes	Discharge 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.

¹ Fluoride samples are analyzed daily at our two treatment facilities and monthly at an independent laboratory. Fluoride has a Secondary Maximum Contaminant Level (SMCL) of 2.0 ppm.

² Chlorine samples are taken multiple times a day from our water treatment facilities, as well as from various locations throughout the two towns on a weekly basis. It is added to your water for disinfection purposes, and as a safeguard against biological pathogens. The District buys water from the MWRA at times, therefore, chlorine values at sites throughout the system may have higher chlorine residual values than those of the treatment plant effluents.

UNREGULATED SUBSTANCES

The EPA has not established drinking water standards for the following parameters. The purpose of unregulated contaminant monitoring is to assist EPA in determining their occurrence in drinking water and whether future regulation is warranted.

PARAMETER (units) Dates collected	Range	Max	Average	MCL	SMCL	Source
Hardness as CaCO ₃ (ppm) 8/28/19	-----	127	127	No MCL	No SMCL	Erosion of natural deposits. Primarily composed of calcium and magnesium.
³ Sodium (ppm) Quarterly and 1/29/2021	66.8-115	115	94.1	No MCL. ORSG guideline = 20 ppm	No SMCL	Discharge from the use of or improper storage of sodium- containing deicing compounds. Also in water softening agents.
Calcium (ppm) Quarterly 2021	20.6-36.7	36.7	30.0	No MCL	No SMCL	Erosion of natural deposits
Iron (ppb) Quarterly 2021	ND-120	120	78	No MCL	300 ppb	Natural and industrial sources as well as aging and corroding distribution systems and household pipes.
Potassium (ppm) 8/28/19	-----	7.97	7.97	No MCL	No SMCL	Erosion of natural deposits.
Magnesium (ppm) Quarterly 2021	5.58-11.2	11.2	8.57	No MCL	No SMCL	Erosion of natural deposits.
Chloride (ppm) Quarterly 2021	161-246	246	201	No MCL	250 ppm	Discharge from the use of or improper storage of sodium or calcium-containing deicing compounds. Run off and leaching from natural deposits; seawater influence.
⁴ Manganese (ppb) Quarterly 2021	ND-23	23	8.2	No MCL. ORSG Lifetime health advisory=300 ppb and Acute HA = 1000 ppb	50 ppb	Natural sources as well as discharges from industrial use.

³ Some people who drink water containing sodium at high concentrations for many years could experience an increase in blood pressure.

⁴ Infants and children who drink water containing manganese at high concentrations may have learning and behavior problems. People with liver disease who drink water containing manganese at high concentrations may have neurological disorders.

Sulfate (ppm) Quarterly 2021	ND-13.9	13.9	5.1	No MCL	250 ppm	Erosion of natural deposits
pH Quarterly 2021	7.7-8.0	8.0	7.86	No MCL	6.5-8.5	Corrosion of household plumbing systems/ erosion of natural deposits.
Acetone (ppb) 10/15/2021	13.6	13.6	-----	No MCL. ORSG = 6300	No SMCL	Discharge from industrial production and use, in automobile exhaust, from landfills and natural sources
Perfluorobutane sulfonic acid (PFBS) (ppt) Collected monthly beginning April 2021	2.03-3.15	3.15	2.48	No MCL	No SMCL	Discharge 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.
Perfluorohexanoic acid (PFHxA) (ppt) Collected monthly beginning April 2021	2.32-5.0	5.0	3.43	No MCL	No SMCL	Discharge 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.

Understanding PFAS (per- and polyfluoroalkyl substances)

In October 2020, MassDEP published its PFAS public drinking water standard, called a Massachusetts Maximum Contamination Level (MMCL), of 20 nanograms per liter (ng/L) (or parts per trillion (ppt)) – individually or for the sum of the concentrations of six specific PFAS. These PFAS are perfluorooctane sulfonic acid (PFOS); perfluorooctanoic acid (PFOA); perfluorohexane sulfonic acid (PFHxS); perfluorononanoic acid (PFNA); perfluoroheptanoic acid (PFHpA); and perfluorodecanoic acid (PFDA). MassDEP abbreviates this set of six PFAS as “PFAS6.” This drinking water standard is set to be protective against adverse health effects for all people consuming the water.

ORGANIC DISINFECTION BYPRODUCTS

PARAMETER (units) Dates collected	Range of Individual Site Results ppb	Maximum Quarterly Running Annual Average (How compliance is calculated) ppb	MCL ppb	MCLG	Compliance Achieved?	Source
Total Trihalomethanes (ppb) Quarterly 2021	33-118	83	80	0	NO*	By-product of drinking water chlorination
Haloacetic Acids (ppb) Quarterly 2021	17-60	46	60	0	YES	By-product of drinking water chlorination

We routinely monitor for the presence of drinking water contaminants. Testing results from October 7, 2021, show that our system exceeded the standard, or maximum contaminant level (MCL), for TTHM. The standard for TTHM is 80 parts per billion (ppb). It is determined by averaging all samples collected at each sampling location for the past 12 months. The level of TTHM averaged at our sampling location on Lyons Street in Dedham, that exceeded the MCL for the period from January 1, 2021, through December 31, 2021, was 83 ppb. A Public Notification was provided to all DWWD customers regarding this exceedance in November of 2021.

We attribute the exceedance to a few different factors, both relating directly to the weather patterns we saw in the summer of 2021. The significant rain that we saw starting in July increased the level of dissolved natural organic matter in our water supply, which required the District to increase the level of chlorine needed to ensure adequate disinfection levels within the distribution system. Secondly, the rain impacted the amount of water we typically see used resulting in a longer residence time the water had within the distribution system. Since TTHM's are created when disinfection chemicals (chlorine) interact with organic matter, both the increased organic levels and longer residence time for the two to interact, played a significant role in the exceedance.

Although non-compliance is a significant concern, due to the swift action on temporary corrective measures, we were happy to report that the District came back into compliance at its next sampling period in January of 2022. The District is continuing its short term measures by flushing, blending with MWRA water and reduced chlorine addition as we work towards a long-term solution which will require the procurement and installation of mixers, aerators, and vents within the water storage tanks, which will help reduce the TTHM levels.

There is nothing you need to do. You do not need to boil your water or take other corrective actions. If a situation arises where the water is no longer safe to drink, you will be notified within 24 hours. If you have a severely compromised immune system, have an infant, are pregnant, or are elderly, you may be at increased risk and should seek advice from your health care providers about drinking this water. Some people who drink water containing trihalomethanes 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.

LEAD AND COPPER RESULTS

Presented below is data from our spring and fall 2019 sampling events. A total of 61 samples were collected at DEP approved sites. The state allows us to monitor for some contaminants less than once per year because the concentrations of these contaminants do not change frequently. Some of our data, though representative, are more than one year old.

Detected Parameter (units)	EPA's Action Level for sampling of customer homes with the highest risk	Maximum contaminant level goal	Results	Compliance Achieved?	Source
⁵ Lead (ppb)	90% of all homes tested must be below 15 ppb	0 ppb	90% of all homes tested measured below 3 ppb in the spring sampling event, and below 2 ppb in the fall sampling event.	Yes	Corrosion of household plumbing; erosion of natural deposits. There was 1 site with a value above the AL of 15 ppb in the fall sampling event.
⁶ Copper (ppm)	90% of all homes tested must be below 1.3 ppm	1.3 ppm	90% of all homes tested measured below 0.14 ppm in the spring sampling event, and below 0.10 ppm in the fall sampling event.	Yes	Corrosion of household plumbing; erosion of natural deposits; leaching from wood preservatives. There were NO sites with values above the copper AL of 1.3 ppm

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 Dedham Westwood Water District is responsible for providing high quality drinking water but 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 or at <http://www.epa.gov/safewater/lead>.

Special Recognition

The District would like to thank both Bob Eiben and Eileen Commane for their dedicated services to the District over their many years of service. General Manager, Robert Eiben, retired at the end of 2021 after 36 years of service and Executive Director, Eileen Commane, retired in September of 2021 after 13 years at the District. Bob and Eileen have both made valuable contributions to the District and the Board and Staff of the District would like to thank them for their guidance through the years. Additionally, we thank the DWWD Employees and the Town of Dedham and Westwood employees and boards for their support.

⁵ Infants and children who drink water containing lead in excess of the action level could experience delays in their physical or mental development. Children could show slight deficits in attention span and learning abilities. Adults who drink this water over many years could develop kidney problems or high blood pressure.

⁶ Copper is an essential nutrient, but some people who drink water containing copper in excess of the action level over a relatively short amount of time could experience gastrointestinal distress. Some people who drink water containing copper in excess of the action level over many years could suffer liver or kidney damage. People with Wilson's Disease should consult their personal doctor.