
2000 Water Quality Report

Town of Medfield, Massachusetts



The Town of Medfield's Water Department is committed to providing customers with a safe and reliable supply of high-quality drinking water that exceeds state and federal standards. To ensure delivery of a quality product, we perform extensive water quality monitoring and continue to make significant improvements to our water system. Safe water is vital to our community and informed consumers are our best allies in maintaining safe drinking water. This "Water Quality Report," required by the Safe Drinking Water Act, will be mailed to you annually and will explain where our water comes from, what our tests show about it, and other relevant information you should know about our drinking water.

Jonathan O'Toole, son of David and Janine O'Toole
David O'Toole, Jonathan's father, is one of the town's water system operators. Jonathan is 19 months old and enjoys going to see the trucks with his Dad at the DPW Garage.

Resident
Medfield, MA 02052

Town of Medfield
Board of Water and Sewerage
Medfield, MA 02052

U.S. POSTAGE
PAID
BULK RATE
PERMIT #1
MEDFIELD

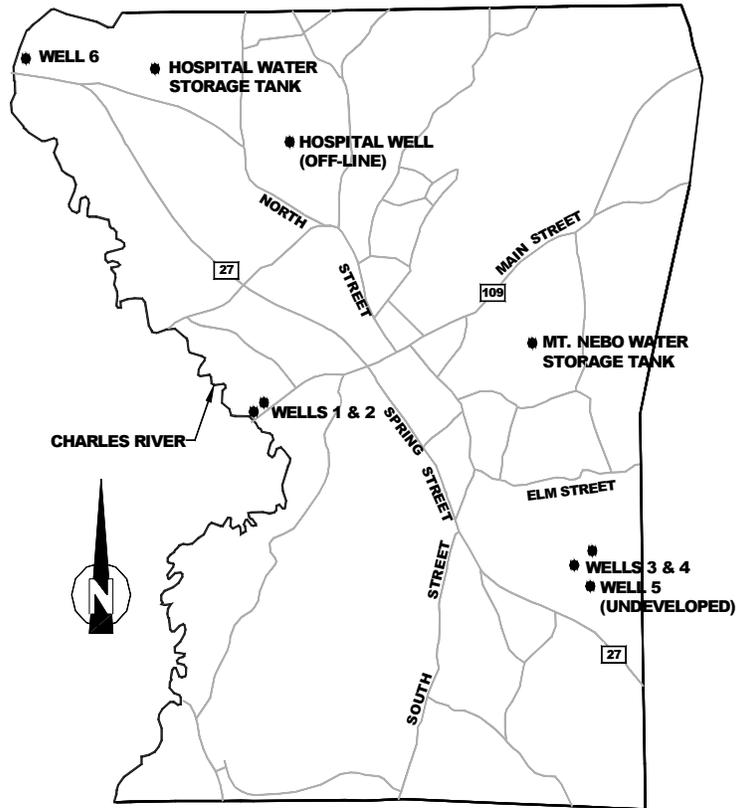
The Medfield Water System

Where's the water?



The origin of our water is from five groundwater supply wells referred to as wells 1, 2, 3, 4 and 6 (Note: Well 5 was not fully constructed due to high levels of iron and manganese in its water). Wells 1, 2 and 6 are located in the Charles River aquifer while wells 3 and 4 are located in the Neponset River aquifer. The water system also includes five pumping facilities for the distribution of water, two water storage tanks, and approximately 75 miles of water main.

Medfield's groundwater sources are all mildly acidic in their natural state, as is typical throughout New England. If the groundwater is not treated to remove the acidity, the water will have a tendency to corrode and dissolve the metal piping it flows through. This will eventually cause damage to the pipes and can also add harmful metals, such as lead and copper, to the water. For this reason, our source water receives treatment with sodium hydroxide to neutralize acidity at all five well sites before it enters the water system and is supplied to our customers. This treatment process is fully approved by the state. Testing throughout the system has shown that this treatment has been very effective at reducing the corrosion of water piping and preventing harmful metals, such as lead and copper, from dissolving into the water.



Medfield Water System Map

Additionally, two of Medfield's water supply wells (wells 1 and 2) are treated for the removal of trace amounts of tetrachloroethylene (PCE). PCE is used mainly by industry for cleaning and degreasing of metals, and as a solvent for dry cleaning. PCE is not found naturally in groundwater and its presence is typically associated with past discharges from industrial sites.

The treatment of these wells has been completely successful in eliminating the PCE from the finished water. The treatment process consists of aerating the raw water, which volatilizes or "strips" off the PCE, followed by disinfection utilizing chlorine, to prevent bacteriological contamination. This treatment process is fully approved by the state and since its implementation; the finished water from these wells has been completely absent of PCE.

We are a registered Public Water Supplier (PWS) with the State:

- * PWS ID#: 3175000
- * PWS NAME: Medfield Water Department

We are located at the Medfield Town House, 459 Main Street.

The Water and Sewer Department Administrative Secretary is Mary Luciano, (Telephone 359-8505 x601).

The Board of Water and Sewer Meetings are held on the 1st and 3rd Tuesdays of each month at 7 p.m. at the Medfield Town House.

The Year in Review

The town worked throughout the year 2000 to improve the town's water system. The major projects the town has undertaken to improve the water system include:



Progress towards town acquisition of the Medfield State Hospital Well



Implementation of an automatic water meter reading system



Rehabilitation of the State Hospital Water Tank



Wetland protection measures



Groundwater protection measures



Water conservation efforts

They told me not to look down...



**View from top of the Mt. Nebo Water Storage Tank.
The tower has a nominal height of 97 vertical feet.**

In addition to the above efforts, a total of 429,068,963 gallons of water was pumped, treated and supplied to our customers in 2000, and we completed the installation of 33 new water services.

State Hospital Well Acquisition is Moving Ahead...

The State Hospital intends to transfer its water rights to Medfield along with the well, pump house and approximately 20 acres of land behind Colonial Road. This is subject to special legislation that has been filed with the State Legislature.

The existing pump house and wells are no longer operational at the State Hospital wellfield. The proposed replacement wellfield consists of three 8-inch naturally developed wells located approximately 50 feet apart. The town worked with its engineering consultant to perform an aquifer-testing program that determined the pumping capacity and water quality of the proposed replacement wellfield. The results of the aquifer-testing program were very positive, indicating an abundance of high quality groundwater.

The pump house structure will be cost effectively restored and used to house new pumping equipment associated with the replacement wells. The existing pump house, built in 1932, is constructed of brick and granite with a slate roof and will be an attractive addition to the town's water system. An article was recently approved at the April, 2001 Town Meeting for repairs to the pump station and for construction of new well pumping equipment that will supply up to 500,000 gallons per day.

New Metering System...

The town has installed a new water metering system to make the task of water billing more efficient. The system allows for remote water meter reading and automatic transfer of the data from the meter reader to a computerized water billing program. The new metering system was placed in service this Spring (2001).

The Year in Review

State Hospital Water Tank Gets a Face Lift...

The State Hospital Water Tank provides water storage and pressure to both the Hospital and the Town of Medfield. The interior and exterior of the State Hospital Water Tank was sand blasted and painted this past June for protection against corrosion and to ensure water quality. The Tank was completely drained so that the interior of the tank could be painted with special paint that protects it from internal corrosion. After the work in the interior of the tank was complete, the exterior of the tank was painted to maintain the structural integrity of the tank and improve its aesthetic value to the community. The State owns and operates the State Hospital Water Tank and therefore paid the project costs.



**Recently painted Medfield
State Hospital Water Tank**

Protecting the Wetlands...

Well Number Six is the most recent well in town to go on-line. It is located in the Northwest section of town, off of Route 27 (see Medfield's water system map). The Well went on-line in March of 1998 and has been providing an abundant, high quality source of water.

As required by the Town's permit with the State for Well Six, the Town initiated a wetland monitoring program to determine if the use of this well is affecting the surrounding wetlands. The wetland-monitoring program is underway to observe the behavior of the wetlands surrounding Well Number Six. The purpose of the monitoring program is to document any changes in the wetland plant community at this location. A baseline assessment of the wetlands at Well Number Six was done in October of 2000. A second assessment will be performed in July of this year. Annual monitoring will be conducted thereafter during mid-June to mid-July. This monitoring program will help the town to identify if Well Number Six has an impact on the surrounding wetlands and if so, will aid the Town in determining necessary adjustments to the operation of the well. Based on the monitoring completed to date, it is not evident that the operation of Well Six has affected the surrounding wetland.

You Don't See It, But We Know Its There...

Groundwater is the source of all Medfield's water supply. For this reason, the town makes certain to protect its groundwater resources. Medfield is proceeding with Stormwater Management measures as set forth by the Environmental Protection Agency. These measures will help to replenish groundwater supply and maintain the integrity of the town's groundwater. We don't see the groundwater on a day-to-day basis, but we know its there and we are working to protect it.

Conservation is Cool...

The town developed a Water Conservation Plan for its water supply system, in November of 2000. The Conservation Plan provides general information about Medfield's water system including the number of customers and water usage trends. The plan also describes all of the current conservation efforts performed by the town and describes the resources Medfield has set in place in the event of a water emergency.

Also, as part of the Town's conservation efforts a system wide leak detection survey is conducted annually and any identified leaks are repaired immediately. In 2000, five leaks were detected in the Medfield State Hospital's water system and were consequently repaired. The Town also has a voluntary odd/even water ban in place from May to September. Homeowners with even numbered houses should not do outside watering on an odd date and homeowners with odd numbered houses should not do outside watering on an even date. Please use water wisely and support the town in its efforts to conserve water.

Substances in Your 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. It can pick up substances resulting from the presence of animals or from human activity. Contaminants 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, and wildlife.

Inorganic contaminants -such as salts and metals, which can be naturally-occurring or result from urban stormwater runoff, industrial, or domestic wastewater discharges, oil and gas production, or farming.

Pesticides and herbicides -which may come from a variety of sources such as agricultural, 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 can also come from gas stations, urban stormwater runoff, and septic systems.

Radioactive contaminants -which can be naturally occurring or be the result of oil and gas production and mining activities.

In order to ensure that tap water is safe to drink, the U.S. Environmental Protection Agency (EPA) prescribes regulations that limit the amount of certain contaminants in water provided by public water systems. The Food and Drug Administration (FDA) 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 water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the EPA Safe Drinking Water Hotline at 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, 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 guidelines on appropriate means to lessen the risk of infection by *Cryptosporidium* are available from the Safe Drinking Water Hotline at 800-426-4791.

Enjoying the View...



View of town center from the top of the Mt. Nebo Water Storage Tank.

Water Quality Summary

Our water is tested extensively to assure that it is safe and healthy. We test for hundreds of potential contaminants in accordance with state and federal standards. Of these numerous tests, listed below are the only contaminants detected in Medfield's drinking water in 2000. It is important to note that *none* of these contaminants were detected at levels higher than the state and federal standards for drinking water.

CONTAMINANT	90 TH PERCENTILE	# OF SITES EXCEEDED	# OF SITES SAMPLED	ACTION LEVEL	MCLG	VIOLATION (YES/NO)	POSSIBLE SOURCE OF CONTAMINATION
Copper (mg/L)	0.3	0	30	1.3	1.3	NO	Corrosion of household plumbing system; Erosion of natural deposits.
Lead (mg/L)	0.01	0	30	0.015	0.015	NO	Corrosion of household plumbing system; Erosion of natural deposits.

CONTAMINANT	Highest Level Detected	Range Detected	Average Detection	Highest Level Allowed (MCL)	Ideal Goals (EPA's MCLGs)	VIOLATION (YES/NO)	POSSIBLE SOURCE OF CONTAMINATION
INORGANIC CONTAMINANTS							
Nitrate (mg/L)	3.05	ND - 3.05	0.76	10	10	NO	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits.
ORGANIC CONTAMINANTS							
Bromoform (ug/L)	2	ND - 2.0	0.22	NR	NR	NO	By-product of drinking water chlorination.
Chlorodibromomethane (ug/L)	0.8	ND - 0.8	0.08	NR	NR	NO	By-product of drinking water chlorination.
Tetrachloroethylene (ug/L)	0.7	ND - 0.7	0.07	5	0	NO	Discharge from factories and dry cleaners.

Important Definitions:

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

EPA is the abbreviation for the Environmental Protection Agency

Maximum Contaminant Level (MCL): 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 technology.

Maximum Contaminant Level Goal (MCLG): 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.

Maximum Residual Disinfectant Level (MRDL): The highest level of a disinfectant (chlorine, chloramines, chlorine dioxide) allowed in drinking water. There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants.

Maximum Residual Disinfectant Level Goal (MRDLG): The level of a drinking water disinfectant (chlorine, chloramines, chlorine dioxide) below which there is no known or expected risk to health. MRDLG's do not reflect the benefits of the use of disinfectants to control microbial contaminants.

ND = Substance not detected in the sample

NR = Not regulated by the EPA

ug/L = Micrograms per liter or parts per billion (ppb)

mg/L = Milligrams per liter or parts per million (ppm)

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

Measurements: In this report, one milligram per liter (mg/L) means that one milligram of a substance can be detected in a liter of water or one microgram per liter (ug/L) means that one microgram of a substance can be detected in a liter of water. To put this into perspective, one milligram per liter (mg/L) is approximately one drop per 10 gallons of water.