1999 WATER QUALITY REPORT
TOWN OF MEDFIELD, MASSACHUSETTS

Enjoying a cold drink of water at the fountain in front of the Medfield Town House.

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.

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

U.S. POSTAGE
PAID
BULKRATE
PERMIT #1
MEDFIELD

Resident
Medfield, MA 02052

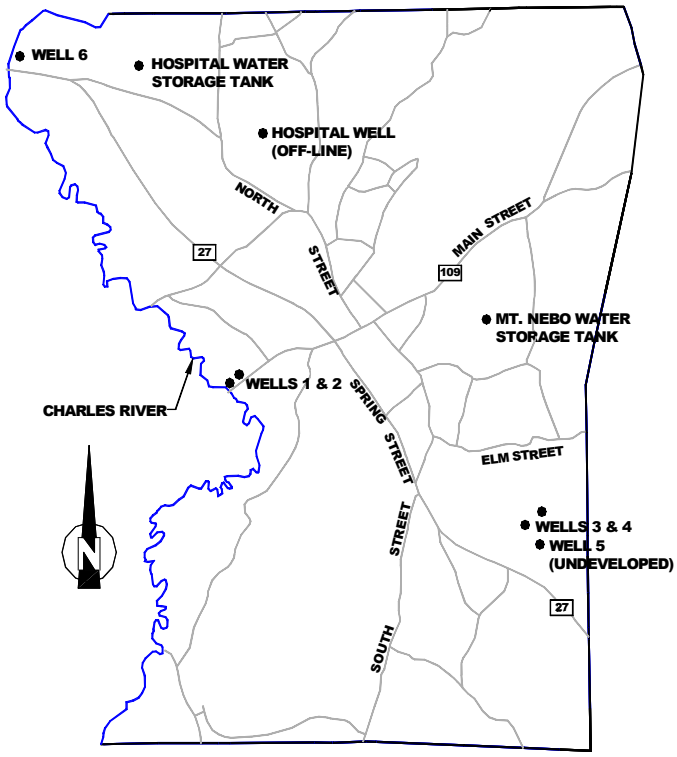
MEDFIELD'S WATER SYSTEM

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.

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 volatizes 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.



Medfield's Water System

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

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

Any Questions?

- **We are located at the Medfield Town House, 459 Main Street.**
- **Water and Sewer Department Administrative Secretary Mary Luciano, Telephone: 359-8505 (Ext. 601)**
- **Board of Water and Sewer Meetings:**
  - **1st and 3rd Tuesdays each month**
  - **7pm, Town House**

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 1999. 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	90TH 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. Leaching from wood preservatives.
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)	4.07	0.53 - 4.07	1.44	10	10	NO	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits.
Sodium (mg/L)	30	19.2 - 30	24.8	NR	NR	NO	Erosion of natural deposits.
ORGANIC CONTAMINANTS							
Bromoform (*u* g/L)	1.8	ND - 1.8	0.37	NR	NR	NO	By-product of drinking water chlorination.
Chlorodibromomethane (ug/L)	0.8	ND - 0.8	0.11	NR	NR	NO	By-product of drinking water chlorination.

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 = Environmental Protection Agency
MCL or 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 technology.
MCLG or 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.
ND = Substance not detected in the sample
NR = Not regulated by the EPA
***u*g/L** = Micrograms per liter or parts per billion (ppb)
mg/L = Milligrams per liter or parts per million (ppm)
Treatment Technique - 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 (*u*g/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.

IMPROVEMENTS TO THE TOWN'S WATER SYSTEM

Many significant improvements to the town's water system have been completed during 1999. The town continues to make progress in securing the former State Hospital well site and confirming both the quality and quantity of the water supply. The State Hospital desires to transfer ownership of the existing wellfield, pump house, the associated land and water rights to the town. The State Hospital does not want to operate and maintain the wellfield and would prefer to be a water customer of the town.

A draft ownership transfer agreement between the Massachusetts Board of Mental Health and the town is under review. Upon acceptance, it will lead to the transfer of the wellfield, pump house, the associated land and water rights to the Town of Medfield. The land area associated with the wellfield is over 50 acres which will be preserved as open space under the ownership of the town.

The existing pump house and wells are no longer operational at the State Hospital wellfield. However, the town continues to work with its engineering consultant to verify the quality and quantity of the water supply, and to determine the most effective means of restoring the pumping facilities.

Several test wells have been installed and utilized to determine the capacity and quality of the water supply. All results have been very positive, indicating an abundance of high quality groundwater.

Presently, the town is permitting with the State Department of Environmental Protection (DEP) for the permanent installation and use of three new production wells to replace the existing wells which are no longer operational. It is planned to have all necessary well pumping permits approved by the DEP in the Fall of this year.

Existing State Hospital pump house. The State Hospital desires to transfer ownership of the existing wellfield, pump house, the associated land and water rights to the town.

Based on an initial assessment of the existing pump house structure, it appears that it can 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.

The town also completed a comprehensive leak detection survey in April of 1999. The survey resulted in the elimination of approximately 373,000 gallons per day of water leakage throughout the system.

A total of 549,985,447 gallons of water were pumped, treated and supplied to our customers during 1999. In addition to our daily maintenance and operation of the water system, we completed the installation of 20 new water services, and 10 new water hydrants during 1999.

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.

ADDITIONAL INFORMATION

As mentioned previously in this report, the town treats its groundwater to remove naturally occurring acidity. The town utilizes sodium hydroxide (a State and EPA approved potable water treatment chemical) to increase the water's alkalinity, thus neutralizing its natural acidity.

In April of this year, due to a mechanical failure of this treatment system at one of the well sites, water was distributed with higher than normal levels of sodium hydroxide to an isolated portion of the water system. As a result, some consumers in this portion of the water system received water with a high alkalinity (high pH) content. The water department worked continuously notifying consumers within the affected area, flushing water mains to remove the high pH water, testing the water for pH levels in the mains and at individual homes, and establishing and staffing an emergency hot-line for the affected water customers until the matter was resolved.

Once this matter was resolved, the town immediately proceeded with the design and construction of treatment safeguards to prevent the reoccurrence of such an event. Specifically, the town has completed the design and installation of pH alarms which will automatically notify the water department if higher than normal pH levels exist in the water system, prior to being distributed to the customers, and automatically shut down the responsible treatment process. This will prevent the reoccurrence of distributing water to customers with a high pH content.

WATER SAVING TIPS

A typical American family of four uses up to 260 gallons of water each day. By installing water saving devices, this same family can save up to 47,000 gallons of water per year. Here are some tips to help you conserve your water. This information was taken from *The Boston Sunday Globe*, May 21, 2000.

Bath:

- **Use an ultra-low flow toilet. This can cut water use in half.**
- **Install a low-flow shower head**

Laundry:

- **Run your washing machine only when full or adjust the capacity setting so you are not wasting water.**

Kitchen:

- **Use a low-flow aerator on your kitchen sink. Low-flow aerators can easily be installed on any faucet, and you can purchase one for about $5.00.**
- **Instead of running the water while you clean your dishes, fill your sink when washing dishes. This saves 8-15 gallons per day.**
- **Run your garbage disposal only when necessary.**

Drips and Leaks:

- **Be sure to repair any leaks in your home. A slow, steady drip uses 75 gallons of water per week, and a fast drip uses approximately 200 gallons per week.**

Lawn, garden and outdoor use:

- **Water lawns and gardens in the early morning or evening to reduce evaporation.**
- **Wet grass burns in the hot sun and is vulnerable to disease. Roots can maintain plenty of moisture even after many days without rain.**
- **Be sure your hose has a shut-off nozzle.**
- **Never water faster than it can be absorbed by your soil. For gardens and shrubs use a soaker hose to provide a slow trickle directly to the roots.**
- **Be sure sprinklers water only your lawn, not your pavement. Install a rain sensor to prevent watering during wet weather.**
- **Don't run the hose while washing your car. Use a bucket and then the hose to rinse at the end.**