



ANNUAL WATER
QUALITY
REPORT

Water testing performed in 2008 and 2009

Presented By:
TOWN OF MEDFIELD

PWS ID#: 2175000

Meeting the Challenge

We are once again proud to present to you our annual water quality report. This report includes water quality data for both 2008 and 2009, as well as information about our compliance over the past two years. Last year's annual report contained several errors and omissions, which we are correcting in this combined report. Over the years, we have dedicated ourselves to producing drinking water that meets all state and federal drinking water standards. We continually strive to adopt new and better methods for delivering the best quality drinking water to you. As new challenges to drinking water safety emerge, we remain vigilant in meeting the challenges of source water protection, water conservation, and community education while continuing to serve the needs of all our water users.

Please share with us your thoughts about the information in this report. After all, well-informed customers are our best allies.

Important Health Information

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 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.



SWAP

The Source Water Assessment and Protection (SWAP) program, established under the federal Safe Drinking Water Act, requires every state to inventory land uses within the recharge areas of all public water supply sources; assess the susceptibility of drinking water sources to contamination from these land uses; and publicize the results to provide support for improved protection. A susceptibility ranking of high was assigned to the Medfield Water System using the information collected during the water system assessment by the Massachusetts Department of Environmental Protection (MassDEP). The complete SWAP report is available at the Water Department and online at www.mass.gov/dep/water/drinking/3175000.pdf. For more information, contact Ken Feeney at (508) 359-8505, ext. 600.

Information on the Internet

The U.S. EPA Office of Water (www.epa.gov/watrhome) and the Centers for Disease Control and Prevention (www.cdc.gov) Web sites provide a substantial amount of information on many issues relating to water resources, water conservation, and public health. Also, the MassDEP has a Web site (<http://www.mass.gov/dep/water/>) that provides complete and current information on water issues in Massachusetts, including valuable information about our watershed.

Substances That Might Be in Drinking Water

To ensure that tap water is safe to drink, the MassDEP 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. Food and Drug Administration (FDA) and Massachusetts Department of Public Health (DPH) regulations establish limits for contaminants in bottled water, which 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:

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 which 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.

Community Participation

The Board of Water and Sewerage meetings are held on the first and third Thursdays of each month at 7:00 p.m. at the Medfield Town House, 459 Main Street, Medfield, MA. Meetings are posted with the Town Clerk and are posted on the Medfield Web site at www.town.medfield.net.

Questions?

For more information about this report, or for any questions relating to your drinking water, please call Kenneth Feeney, Superintendent of Public Works, at (508) 359-8505, ext. 600, or email at kfeeney@medfield.net.

Where Does My Water Come From?

The origin of our water is five ground water 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.) The ground water supply is not exposed to air and is not subject to direct pollution and contamination like a river or reservoir (surface water). In fact, ground water is the highest quality of water available to meet the public health demand of water intended for human consumption. 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 76 miles of water main.

Water Conservation

You can play a role in conserving water and saving yourself money in the process by becoming conscious of the amount of water your household is using and by 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.

Radon

Radon is a radioactive gas that occurs naturally in some ground water. It may pose a health risk when the gas is released from water into air, as occurs during showering, bathing, or washing dishes and clothes. Radon gas released from drinking water is a relatively small part of the total radon in air. Radon is released into homes and ground water from soil. Sampling of our groundwater in 2007 showed an average radon concentration of 367 pCi/L. Inhalation of radon gas has been linked to lung cancer, however, the effects of radon ingested in drinking water are not yet clear. If you are concerned about radon in your home, tests are available to determine the total exposure level. For additional information on how to have your home tested, call (800) SOS-RADON.

How Long Can I Store Drinking Water?

The disinfectant in drinking water will eventually dissipate, even in a closed container. If that container housed bacteria prior to filling up with the tap water, the bacteria may continue to grow once the disinfectant has dissipated. Some experts believe that water could be stored up to six months before needing to be replaced. Refrigeration will help slow the bacterial growth.

Lead and Drinking Water

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 Town of Medfield 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 www.epa.gov/safewater/lead.

About Our Violations

The Town was notified by MassDEP that during the month of August 2009 the Town did not sample for chlorine residuals. The Town did sample for chlorine and conducted a series of resampling tests for total coliform, which was negative; however, the Town did not retest again for chlorine residuals. The Town is now aware that even with a resampling process, the Town must test for chlorine residuals.

The Town was issued a Notice of Noncompliance on December 22, 2009, because the 2008 Consumer Confidence Report was determined to be inadequate by the MassDEP. The Town is correcting this content by issuing a combined 2008 and 2009 CCR, which will be delivered to all customers on or before July 1, 2010.

The Town was issued a Notice of Noncompliance in September 2008 because the Water Department did not collect enough raw water samples for bacteria in May of that year and did not monitor for volatile organic contaminants in the second quarter of 2008. In response, we sampled for VOCs and posted public notice for both violations, returning to compliance on October 1.

For more information or questions regarding these violations, please contact Kenneth Feeney, (508) 359-8505, ext. 600.

Sampling Results

During the past two years we have taken hundreds of water samples in order to determine the presence of any radioactive, biological, inorganic, volatile organic, or synthetic organic contaminants. The table below shows only those contaminants that were detected in the water. We feel it is important that you know exactly what was detected and

how much of the substance was present in the water.

The state allows us to monitor for certain substances less 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.

INORGANIC CONTAMINANTS	DATE(S) COLLECTED	HIGHEST RESULT OR HIGHEST RAA*	RANGE DETECTED	MCL OR MRDL	MCLG OR MRDLG	VIOLATION (Y/N)	POSSIBLE SOURCES
Nitrate (ppm)	3/08 2/09 & 3/09	2.81 3.08	.56 - 2.81 .35 - 3.08	10	10	N	Runoff from fertilizer use; leaching from septic tanks; natural deposits
Fluoride (ppm)	9/07	0.12	--	4	4	N	Erosion of natural deposits
Perchlorate (ppb)	8/07 9/09	0.15 0.20	ND - 0.15 0.05 - 0.2	2	--	N	Rocket propellants, fireworks, munitions, flares, blasting agents
Radioactive Contaminants							
Radium 226 & 228 (pCi/l)	2/04	1.2	--	5	0	N	Decay of natural and manmade deposits
Disinfection Contaminants							
Haloacetic Acids (HAA5s) (ppb)	Quarterly in 2008	1*	ND - 4.6	60	--	N	Byproduct of drinking water chlorination
Haloacetic Acids (HAA5s) (ppb)	Quarterly in 2009	1*	ND - 5.1	60	--	N	Byproduct of drinking water chlorination
Total Trihalomethanes (TTHMs) (ppb)	Quarterly in 2008	1*	ND - 2.4	80	--	N	Byproduct of drinking water chlorination
Total Trihalomethanes (TTHMs) (ppb)	Quarterly in 2009	1*	ND - 0.7	80	--	N	Byproduct of drinking water chlorination
Chlorine (ppm)	12-16 Per Month in 2008	0.03*	ND - 0.16	4	4	N	Water additive used to control microbes
Chlorine (ppm)	16 Per Month in 2009	0.04*	ND - 0.25	4	4	N	Water additive used to control microbes

* Highest RAA = highest running annual average of four consecutive quarters.

BACTERIA	HIGHEST # POSITIVE SAMPLES IN A MONTH	MCL	MCLG	VIOLATION (Y/N)	POSSIBLE SOURCES
Total Coliform 2008 Total Coliform 2009	1 ND	1	0	N	Naturally present in the environment
Fecal Coliform or E. Coli 2008 Fecal Coliform or E.Coli 2009	ND ND	*	0	N	Human and animal fecal waste

* Compliance with the fecal coliform/E. coli MCL is determined upon additional repeat testing.

LEAD AND COPPER	DATE COLLECTED	90TH PERCENTILE	ACTION LEVEL (AL)	MCLG	# OF SITES SAMPLED	# OF SITES ABOVE AL	EXCEEDS AL (Y/N)	POSSIBLE SOURCES
Lead (ppb)	9/07	9	15	0	30	1	N	Corrosion of household plumbing
Copper (ppm)	9/07	0.54	1.3	1.3	30	0	N	Corrosion of household plumbing

* Lead and copper compliance is based on the 90th percentile value, which is the highest level found in 9 out of every 10 homes sampled. This number is compared to the action level for each contaminant.

UNREGULATED AND SECONDARY CONTAMINANTS	DATE COLLECTED	RANGE DETECTED	AVERAGE	SMCL	ORSG	POSSIBLE SOURCES
Sulfate (ppm)	3/08 3/09	ND - 19 ND - 17	12 10	250	--	Natural sources
Sodium (ppm)	3/08	27 - 35	29	--	20	Natural sources; runoff from road salt
Iron (ppb)	3/08 1/09, 2/09 & 3/09	ND - 20 ND - 20	5 4	300	--	Naturally occurring; corrosion of cast iron pipes
Manganese (ppm)	3/08 1/09, 2/09 & 3/09	ND - 150 ND - 210	38 42	50	--	Erosion of natural deposits
Radon (pCi/l)	3/07	12 - 746	368	--	10,000	Natural sources
1,1-Dichloroethane (ppb)	Quarterly in 2009	ND - 0.5	0.06	--	--	Discharge from industrial chemical factories

* Sodium-sensitive individuals, such as those experiencing hypertension, kidney failure, or congestive heart failure, should be aware of the levels of sodium in their drinking water where exposures are being carefully controlled.

Definitions

90th Percentile: Out of every 10 homes sampled, 9 were at or below this level.

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

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.

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).

SMCL: Secondary maximum contaminant level. These standards are developed to protect the aesthetic qualities of drinking water and are not health based.

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.