

**2014 Annual Drinking Water Quality Report for
Foxborough Water and Sewer Department
Town of Foxborough, Massachusetts
DEP PWS ID # 4099000**

This report is a snapshot of drinking water quality over the past year. Included are details about where your water comes from, what it contains, and how it compares to Federal standards.

I. PUBLIC WATER SYSTEM INFORMATION

Address: 40 South Street, Foxborough, MA 02035
Contact Person: Robert Worthley
Telephone #: (508) 543-1209
Fax #: (508) 543-6278
Internet Address:
www.foxboroughma.gov/Pages/FoxboroughMA_Water/index

We encourage public interest and participation in our community's decisions affecting drinking water. Regular Board meetings occur at least twice a month, at the Foxborough Water & Sewer Department office, 40 South Street, Foxborough, MA. The public is welcome. Please call the office at (508) 543-1209 to obtain specific dates and times of meetings.

Water System Improvements

Our water system is routinely inspected by the Massachusetts Department of Environmental Protection (MassDEP). MassDEP inspects our system for its technical, financial, and managerial capacity to provide safe drinking water to you. To ensure that we provide the highest quality of water available, your water system is operated by certified operators who oversee the routine operations of our system. As part of our ongoing commitment to you, last year we made several improvements to our system. We are excited to announce the completion of the Oak Street Water Treatment Plant. We upgraded source master meters. During the next year, we will continue with the installation of radio read meters, and the cleaning and reconditioning of wells. The Foxborough Water Department will continue the water saving rebate program that allows residents with older 5-to 8-gallon flush toilets to change to the up-to-date, water-saving 1.28-gallon or lower per flush toilets. Residents who wish to participate in the program must show proof of installation and will then receive a \$100 refund from the Town of Foxborough Water Department. A \$75 rebate is offered for washing machines with an Energy Star water factor of 4.0 or less. Please contact the Water Department for details.

The last Sanitary Survey was completed by the MassDEP in May 2015.

2. YOUR DRINKING WATER SOURCE

Where Does My Drinking Water Come From?

The Town of Foxborough is supplied solely from groundwater sources which are located in the Boston Harbor, Ten Mile River and Taunton River Basins. Water is pumped from 13 gravel-packed wells located in six different well fields throughout the Town of Foxborough. There is also a small section of town that is supplied from Mansfield, due to the location of water mains. In addition, there are also emergency connections with the Towns of Mansfield, Plainville, Sharon, Walpole and Wrentham.

Station 1:	Boston Harbor River Basin (01G,02G)	Station 4:	Taunton River Basin (12G)
Station 2:	Taunton River Basin (04G, 05G, 06G)	Station 5:	Boston Harbor River Basin (13G)
Station 3:	Taunton River Basin (07G, 08G, 09G, 10G)	Station 6:	Ten Mile River Basin (14G, 15G)

The Town of Foxborough in 1989 adopted a Water Resource Protection By-Law for protection of the Town's drinking water wells.

Our water system makes every effort to provide you with safe and pure drinking water. To improve the quality of the water delivered to you, we treat it to remove several contaminants.

- We add a disinfectant to protect you against microbial contaminants.
- We chemically treat the water to reduce lead and copper concentrations.
- We chemically treat and filter the water to reduce levels of iron and manganese.

MassDEP has prepared a Source Water Assessment Program (SWAP) Report for the water supply sources serving this water system. The SWAP Report assesses the susceptibility of public water supplies.

What is My System's Ranking?

A susceptibility ranking of high was assigned to this system using the information collected during the assessment by MassDEP. This ranking was assigned due to the presence of at least one high threat land use within the water supply protection area that could be a source of potential contamination by microbiological pathogens and chemicals. The Water Department also completed the Vulnerability Analysis and Emergency Response Plan Study. For further information, please contact the Water Dept.

Where Can I See The SWAP Report?

The complete SWAP report is available at the Water Department's website at http://www.foxboroughma.gov/Pages/FoxboroughMA_Water/SWAP.pdf. For more information, call Bob Worthley at (508) 543-1209.

Residents can help protect sources by:

Practicing good septic system maintenance; taking hazardous household chemicals to hazardous materials collection days; and by limiting pesticide and fertilizer use, etc.

3.**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:

Microbial contaminants, such as viruses and bacteria, may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife.

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

Pesticides and herbicides may come from a variety of sources such as agriculture, urban storm water runoff, and residential uses.

Organic chemical contaminants include synthetic and volatile organic chemicals that are by-products of industrial processes and petroleum production, and can also come from gas stations, urban storm water runoff, and septic systems.

Radioactive contaminants 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 Department and EPA prescribe regulations that limit the amount of certain contaminants in water provided by public water systems. FDA and the Massachusetts Department of Public Health 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 contamination. 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’s Safe Drinking Water Hotline (1-800-426-4791).”

“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 infants can be particularly at risk from infections. These people should seek advice from their health care providers. EPA/CDC guidelines on appropriate means to lessen the risk of infection by Cryptosporidium and other microbial contaminants are available from the Safe Drinking Water Hotline (1-800-426-4791).”

“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 Foxborough Water Department 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>.”

4.**IMPORTANT DEFINITIONS**

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 treatment 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 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 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.

Action Level (AL) – 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, 9 were at or below this level.

ppm = parts per million, or milligrams per liter (mg/l)
 ppb = parts per billion, or micrograms per liter (ug/l)
 ppt = parts per trillion, or nanograms per liter
 pCi/l = picocuries per liter (a measure of radioactivity)
 NTU = Nephelometric Turbidity Units

ND = Not Detected
 N/A = Not Applicable
 mrem/year = millirem per year (a measure of radiation absorbed by the body)

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

Massachusetts Office of Research and Standards Guideline (ORSG) – 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.

What Does This Data Represent?

The water quality information presented in the tables is from the most recent round of testing done in accordance with the regulations. All data shown was collected during the last calendar year unless otherwise noted in the tables.

MassDEP has reduced the monitoring requirements for volatile organic contaminants, inorganic contaminants, synthetic organic contaminants, arsenic, and perchlorate for several wells to less often than once per year because the sources are not at risk of contamination. The last samples collected for inorganic, synthetic organic, and arsenic samples were in 2009. Radioactive contaminants were sampled in 2012.

	Date(s) Collected	90 th Percentile	Action Level	MCLG	# of Sites Sampled	# of Sites above Action Level	Possible Source of Contamination
Lead (ppb)	2014	1	15	0	31	0	Corrosion of household plumbing systems; Erosion of natural deposits
Copper (ppm)	2014	0.33	1.3	1.3	31	0	Corrosion of household plumbing systems; Erosion of natural deposits; Leaching from wood preservatives

Kings Wood Montessori was tested on 8/27/14. Lead ranged from ND to 1 ppb, copper ranged from, 0.14 to 0.2 mg/L.

Hockmock YMCA was tested on 8/27/14. Lead ranged from 2 to 5 ppb, copper ranged from, 0.23 to 0.45 mg/L.

Total Coliform	Highest % Positive in a month	Total # Positive	MCL	MCLG	Violation (Y/N)	Source	Health Effects Language
E. coli in raw untreated water in Well #7 on 12/02/2014	Number of positive samples 1 Confirming samples 0	1	0	0	Yes Under the Groundwater Rule, Public Notice was given.	Human and animal fecal waste	<i>E. coli</i> 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.

Regulated Contaminant	Date(s) Collected	Highest Detected Level	Range Detected	MCL or MRDL	MCLG or MRDLG	Violation (Y/N)	Possible Source(s) of Contamination
Inorganic Contaminants							
Nitrate (ppm)	2014	3.39	0.89 – 3.39	10	10	NO	Runoff from fertilizer use; leaching from septic tanks; sewage; erosion of natural deposits
Perchlorate	2014	0.47	0.11 – 0.47	2	N/A	NO	Rocket propellants, fireworks, munitions, flares, blasting agents
Radioactive Contaminants							
Gross Alpha (pCi/l)	2012	1.86	-0.881-1.86	15	0	NO	Erosion of natural deposits
Radium 226 & (pCi/L)	2012	0.551	-0.116 – 0.551	5	0	NO	Erosion of natural deposits
Radium 228 (pCi/L)	2012	1.26	-0.053 – 1.26	5	0	NO	Erosion of natural deposits

Disinfectants and Disinfection By-Products							
Regulated Contaminant	Date Collected	Highest Running Annual Average	Range Detected	MCL or MRDL	MCLG or MRDLG	Violation	Possible Source of Contamination
Total Trihalomethanes (TTHMs) (ppb)	Quarterly in 2014	30.6	13.3– 50.1	80	----	NO	Byproduct of drinking water chlorination
Haloacetic Acids (HAA5) (ppb)	Quarterly in 2014	19.6	1.3 – 18.4	60	----	NO	Byproduct of drinking water chlorination
Chlorine (ppm) (free)	Monthly in 2014	1.22	nd- 1.65	4	4	NO	Water additive used to control microbes

Unregulated and Secondary Contaminants *1	Date(s) Collected	Result or Range Detected	Average Detected	SMCL	ORSG	Possible Source
Inorganic Contaminants						
Sodium (ppm) **2	2014	29.7 – 44	37.8	----	20	Natural sources; runoff from use as salt on roadways; by-product of treatment process

Other Organic Contaminants - When detected at treatment plant as VOC residuals, not TTHM compliance						
Bromodichloromethane (ppb)	2014	ND – 2.4	1.47	---	---	By-product of drinking water chlorination
Chloroform (ppb)	2014	0.5 – 5.6	2.54	---	---	By-product of drinking water chlorination

Chlorodibromomethane (ppb)	2014	ND – 1.4	0.83	---	---	By-product of drinking water chlorination
Secondary Contaminants ***3						
Iron (ppb)	2014	ND – 250	107	300	---	Naturally occurring, corrosion of cast iron pipes
Manganese (ppb)	2014	ND – 950	242	50	Health Advisory of 300 ppb	Erosion of natural deposits

“Unregulated contaminants are those for which EPA has not established drinking water standards. The purpose of unregulated contaminant monitoring is to assist EPA in determining their occurrence in drinking water and whether future regulation is warranted”.

Name	Range	Average
1,4-dioxane(ppb)	nd - 0.14	0.045
Chlorate(ppb)	88 - 1000	289.21
Chloromethane (ppb)	nd - 1.3	0.1083
chromium (total) (ppb)	nd - 0.2	0.025
chromium-6(ppb)	nd - 0.17	0.0825
Cobalt (ppb)	nd - 8.1	0.4208
Strontium (ppb)	69 - 210	114.21
Vanadium (ppb)	nd - 2.3	0.1208

Water Quality Table Footnotes

*1. Unregulated contaminants are those for which EPA has not established drinking water standards. The purpose of unregulated contaminant monitoring is to assist EPA in determining their occurrence in drinking water and whether future regulation is warranted.

**2. The ORSG for sodium is 20ppm. Above this level, 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 carefully being controlled.

***3. The U.S. Environmental Protection Agency has established a lifetime Health Advisory for manganese at 300 ppb and an acute Health Advisory at 1000 ppb.

6. COMPLIANCE WITH DRINKING WATER REGULATIONS

Does My Drinking Water Meet Current Health Standards? Yes.

E-COLI FOUND IN WELL #7

We routinely monitor for the presence of drinking water contaminants to ensure the safety of the water supply. On December 4, 2014 our water system was notified that a water sample collected on December 2, 2014 from our Lamson Road Well (07G) tested positive for *E.coli*, which is a fecal indicator. Fecal indicators are used to detect ground water sources that may be susceptible to fecal contamination which may contain harmful viruses or bacteria.

The water delivered to your taps through the distribution system is disinfected with chlorine to kill viruses and bacteria, including E.coli. **It is important to note that samples collected on December 2, 2014 in the distribution system did NOT detect any fecal contaminants.** Well #7 is one of eleven active wells that supplies drinking water to our system. In accordance with the federal Ground Water Rule (GWR) requirements, we notified you of the situation.

DRINKING WATER NOTICE Monitoring Requirements Not Met for Foxboro Water Department (DEP PWS #4099000)

We violated monitoring and reporting requirements of the drinking water regulations. Even though this was not an emergency, as our customers, you have a right to know what happened and what we did to correct this.

We are required to monitor your drinking water for specific man-made and naturally occurring contaminants on a regular basis. Results of regular monitoring are an indicator of whether or not our drinking water meets health standards. During the monitoring period listed below, we did not monitor and/or did not complete all monitoring for the contaminants listed below and therefore cannot be sure of the quality of our drinking water during that time.

The table below lists the contaminants we did not properly test for and/or report to the Department of Environmental Protection (DEP) during the required monitoring period.

Monitoring Period	Contaminate Group
2/1/2015 - 2/28/2015	HALOACETIC ACIDS
2/1/2015 - 2/28/2015	TOTAL TRIHALOMETHANES

In response to monitoring and reporting violations of the Massachusetts Drinking Water Regulations, our system is taking the following corrective actions:

1. We are notifying our customers of the violations by providing this public notice to you as well as submitting a copy of this public notice to the MassDEP and local board of health.
2. Sample Collection: We have already collected and analyzed samples for the contaminants listed above and have submitted copies of the sampling results to the DEP. These contaminants were collected AFTER the required monitoring period on March 9, 2015.
3. We will continue to collect samples for all contaminants according to our most recent sampling schedule.

For more information or questions regarding this notice, please contact Robert Worthley at (508) 543-1209.

"Manganese is a naturally occurring mineral found in rocks, soil and groundwater, and surface water. Manganese is necessary for proper nutrition and is part of a healthy diet, but can have undesirable effects on certain sensitive populations at elevated concentrations. The United States Environmental Protection Agency (EPA) and MassDEP have set an aesthetics-based Secondary Maximum Contaminant Level (SMCL) for manganese of 50 ug/L (micrograms per liter), or 50 parts per billion, and health advisory levels. In addition, EPA and MassDEP have also established public health advisory levels. ***Drinking water may naturally have manganese and, when concentrations are greater than 50 µg/L, the water may be discolored and taste bad. Over a lifetime, EPA recommends that people drink water with manganese levels less than 300 µg/L and over the short term, EPA recommends that people limit their consumption of water with levels over 1000 ug/L, primarily due to concerns about possible neurological effects. Children up to 1 year of age should not be given water with manganese concentrations over 300 ug/L, nor should formula for infants be made with that water for longer than 10 days.***"

See: http://www.epa.gov/safewater/ccl/pdfs/reg_determine1/support_cc1_magnese_dwreport.pdf

To help alleviate the concerns with manganese, The Foxborough Water Department is removing iron and manganese by utilizing the Witch Pond and Oak Street Water Treatment Plants. Other sources are blended with the filtered water using the wells having the lowest manganese first, as needed, to meet seasonal demands. Treatment with a blended sodium phosphate is used for sequestration, and corrosion control. Unidirectional flushing of the distribution system will continue to be conducted in the spring and fall, as weather permits.

RADON

"Radon is a radioactive gas that you cannot see, taste, or smell. It is found throughout the United States. Radon can move up through the ground and into a home through cracks and holes in the foundation. Radon can build up to high levels in all types of homes. Radon can also get into indoor air when released from tap water from showering, washing dishes, and other household activities. Compared to radon entering the home through soil, radon entering the home through tap water will be (in most cases) a small source of radon in indoor air. Radon is a known human carcinogen. Breathing air containing radon can lead to lung cancer. Drinking water containing radon may also cause increased risk of stomach cancer. If you are concerned about radon in your home, test the air in your home. Testing is inexpensive and easy. Fix your home if the level of radon in your air is 4 picocuries of radon per liter of air (pCi/l) or higher. There are simple ways to fix a radon problem that aren't too costly. For additional information, call your state radon program or call EPA's Radon Hotline, 800.SOS.RADON."

TREATMENT

Iron & Manganese Removal (Oxidation and Filtration)

Iron and manganese are often present in groundwater at levels that can discolor the water, or cause it to take on unpleasant odors or tastes. Even though the water may still be safe to drink, it is preferable that the iron and manganese be removed.

Removal requires a two-step process of oxidation and filtration. Oxidation is accomplished by adding chlorine to the water. This causes the iron and manganese to form tiny particles. Once this happens, the water passes through special filters consisting of material that is specifically designed to capture iron and manganese particles. Over time, filters start to clog and need to be cleaned using a high-flow backwash process.

Sequestration (for iron & manganese) The sources that are not filtered are sequestered. Treatment consists of adding polyphosphates to water. This results in a chemical reaction, known as sequestration, which prevents the iron and manganese from forming nuisance particles.

To eliminate disease carrying organisms, it is necessary to disinfect the water. Disinfection destroys harmful organisms. The Foxborough Water Department uses sodium hypochlorite, a form of chlorine, as its primary disinfectant. Disinfection with chlorine has been proven effective at ensuring that water is free of harmful organisms and safe to drink.

Many drinking water sources in New England are naturally corrosive (i.e., they have a pH of less than 7.0). So, the water they supply has a tendency to corrode and dissolve the metal piping it flows through. This not only damages pipes, but can also add harmful metals, such as lead and copper, to the water. For this reason it is beneficial to add chemicals that provide a protective pipe coating and make the water neutral or slightly alkaline. This is done by adding combinations of water treatment chemicals. The Foxborough Water Department adds a blend of phosphates to its water. This is often referred to as an inhibitor and is what coats the inside of the pipe. It contains a small concentration of phosphate. Potassium hydroxide raises the water's pH to a non-corrosive level. Testing throughout the water system has shown that this treatment has been effective at reducing lead and copper concentrations.

All chemicals used are approved for water treatment by one of the following organizations: National Sanitation Foundation (now known as NSF International), or UL, both accredited by the American National Standards Institute (ANSI). Chemicals also have to meet performance standards established by the American Water Works Association (AWWA).

Contamination from Cross Connection

Cross-connections that could contaminate drinking water distribution lines are a major concern. A cross-connection is formed at any point where a drinking water line connects to equipment (boilers), systems containing chemicals (air conditioning systems, fire sprinkler systems, irrigation systems) or water sources that are not regulated. Cross-connection contamination can occur when the pressure in the equipment or system is greater than the pressure inside the drinking water line (backpressure). Contamination can also occur when the pressure in the drinking water line drops due to fairly routine occurrences (main breaks, heavy water demand), causing contaminants to be sucked out from the equipment and into the drinking water line (backsiphonage). Outside water taps and garden hoses tend to be the most common sources of cross-connection contamination at home. The garden hose creates a hazard when submerged in a swimming pool or when attached to a chemical sprayer for weed killing. Garden hoses that are left lying on the ground

may be contaminated by fertilizers, cesspools or garden chemicals. Improperly installed valves in your toilet could also be a source of cross-connection contamination. Community water supplies are continually jeopardized by cross-connections unless appropriate valves, known as backflow prevention devices, are installed and maintained. We have surveyed all industrial, commercial, and institutional facilities in the service area to make sure that all potential cross-connections are identified and eliminated or protected by a backflow device. Each backflow device is tested and inspected according to the frequency specified by MassDEP based on the type of device to make sure that it is providing maximum protection. For more information, visit our Web site at (www.foxboroughma.gov/Pages/FoxboroughMA_Water/CrossConnection).

National Primary Drinking Water Regulation Compliance

The Foxborough Water and Sewer Department, 40 South Street, Foxborough, MA 02035 prepared this report. If you have any questions, please do not hesitate to call Robert B. Worthley, Water Superintendent at (508) 543-1209.

Office hours are Monday, Wednesday and Thursday 8:30 A.M. to 4:00 P.M.; Tuesday – 8:30 A.M. to 4:00 P.M. and 5:00 P.M. to 8:00 P.M. and Friday – 8:30 A.M. to 12:30 P.M. Fax Number: (508) 543-6278. For water problems outside of normal hours, please call the Foxborough Police Department at (508) 543-1212.

Notice of Seasonal Water Use Restrictions

Our annual watering restrictions are in effect again this year. However, this year we are faced with an even bigger conservation challenge while the Hill Street tank is being rehabilitated. This has left us with a very limited reserve water supply. While it is our hope that we can continue to allow our customary odd-even watering schedule, without thoughtful consumption from all of our customers, an all-out ban may need to be enforced, in order to ensure an adequate supply of water for fire protection and all consumers.

Currently, we are still allowing sprinkler usage at night between the hours of 6:00 p.m. to 9:00 p.m., on Mondays and Thursdays for odd-numbered addresses, and on Tuesdays and Fridays for even-numbered addresses. Also, the Department of Environmental Protection has issued its own set of restrictions for Foxborough, which bans **all** non-essential outdoor water use between the hours of 9 a.m. and 5 p.m.

Thank you in advance for your continued cooperation. If you have any questions concerning these restrictions, please call the Foxboro Water Department at (508) 543-1209.

**Water Department
Town of Foxborough
40 South Street
Foxborough, MA 02035**

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