



2014 Water Quality Report

For Customers in the Oxford System

Caring For Our Environment. Committed To Our Communities.



A Message from the Vice President



John Walsh
Vice President, Operations
Aquarion Water Company of MA

Dear Customer:

Safe, high-quality water is essential to many things – our individual health and well-being, community property values, a strong economic base for our entire area, and the integrity of our environment.

Accordingly, in 2014 we conducted more than 7,700 tests on the water we supply to our customers in Massachusetts. And we are proud to report that the water we supplied to you again met or surpassed each of the quality standards established by state and federal agencies.

Along with high-quality water, Aquarion is firmly committed to continuing its investment in the infrastructure in Oxford. In the fall of 2014, we successfully completed the first phase of our project to replace the water main on Main Street, north of Old Depot Road. In this first phase, we installed 1,300 feet of new water main to replace an old main that had experienced several breaks and had inadequate hydraulic capacity.

Over the next two years, we will continue this project, replacing a total of 5,400 feet of water main before we are done. This investment will help improve the reliability of our system by reducing the risk of water main breaks and increasing the system's capacity to move water to and from the Jevic Tank.

In more good news, Aquarion was pleased to announce earlier this year that our customers in Massachusetts would receive a 3.23% credit on their water bills throughout 2015 as the result of a federal tax credit.

We also were pleased to support a variety of local organizations and events this past year through sponsorship and participation. Some of the beneficiaries in 2014 included: the Oxford Little League, the Barton Center for Diabetes, the Oxford Lion's Club, Operation Santa, the Oxford Firefighters Association, and the Oxford Business Association. We also donated materials and took part in the installation of the new water service to the Oxford Animal Shelter.

In addition, we re-established our Customer Advisory Board in Oxford. This board comprises a group of residents and business leaders from Oxford who meet with us to provide ongoing feedback about our service. I want to thank them for their contribution and their support.

In closing, I'd like to thank all our employees for their excellent work in providing you with safe, clean water and dependable service. From all of us at Aquarion, it is a pleasure serving you and all of our customers in Oxford.

Please feel free to share with us your questions about water-related issues in town. Our customer service line is 1-800-732-9678, or you may contact us at our dedicated Oxford email address: oxford@aquarionwater.com.

Sincerely,

John Walsh
Vice President, Operations
Aquarion Water Company of MA



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Facts and Figures



Aquarion conducts an extensive quality testing program each year to ensure its 56,000 residents in Massachusetts have safe, clean drinking water. In 2014, we collected more than 1,700 water samples, on which we conducted more than 7,700 quality tests. These tests are designed to detect and measure the presence of more than 100 compounds, many of which occur through erosion of natural deposits. Constant testing enables us to confirm that the water we supply meets or exceeds state and federal standards.

The results reported in the table on the next page demonstrate the effectiveness of our ongoing efforts to protect the purity of Aquarion water every step of the way from the source to your tap.



Water Quality Table for Customers in the Oxford System

Your water has been tested for more than 100 compounds that are important to public health. Only 16 of these were detected, all of which were below the amounts allowed by state and federal law. Most of these compounds are either naturally occurring or introduced as treatment to improve water quality. Monitoring frequency varies

from daily to once every nine years per EPA regulation, depending on the parameter. Our testing encompasses the full range of regulated inorganic, organic and radiological compounds and microbiological and physical parameters. Results shown below are for detected compounds only.

Substance (Units of Measure)	Highest Allowed by Law		Compliance	Test Date	Oxford System Detected Level	
	MCLG	MCL			Average	Range
Inorganic Compounds						
Arsenic (ppb)	0	10	YES	2012	3	ND < 1 – 4
Barium (ppm)	2	2	YES	2012	0.009	0.007 – 0.011
Copper (ppm)	1.3	AL = 1.3	YES	2013	0.84*	
Fluoride (ppm)	4.0	4.0	YES	2014	0.94	0.80 – 1.10
Lead (ppb)	0	AL = 15	YES	2013	2**	
Nitrate (ppm)	10	10	YES	2014	2.09	0.240 – 2.90
Perchlorate (ppb)	NA	2	YES	2014	0.18	0.06 – 0.23
Disinfectant						
Chlorine (ppm)	MRDLG 4	MRDL 4	YES	2014	0.73	0.37 – 1.05
Organic Compounds						
Total Trihalomethanes (ppb)	NA	80	YES	2014	34***	33 – 34
Total Haloacetic Acids (ppb)	NA	60	YES	2014	5***	5
Radiologicals						
Alpha Emitters (pCi/L)	0	15	YES	2010	ND < 2.8	ND < 2.8 – 3.6
Uranium (ppb)	0	30	YES	2010	ND < 1.0	ND < 1.0 – 1.1
Inorganic Compounds						
Chloride (ppm)	NA	SMCL = 250	NA	2014	66.9	36.0 – 130
Manganese (ppb)	HA = 300	SMCL = 50	NA	2014	45	ND < 2 – 1,000^
Sodium (ppm)	NA	ORSG = 20	NA	2014	29.6	16.0 – 58.0
Sulfate (ppm)	NA	SMCL = 250	NA	2014	ND < 5.0	ND < 5.0 – 8.0

Health Effects

Arsenic: While your drinking water meets the EPA's standard for arsenic, it does contain low levels of arsenic. The EPA's standard balances the current understanding of arsenic's possible health effects against the cost of removing arsenic from drinking water. The EPA continues to research the health effects of low levels of arsenic, which is a mineral known to cause cancer in humans at high concentrations and is linked to other health effects such as skin damage and circulatory problems.

Manganese: Manganese is a naturally occurring mineral found in rocks, soil, ground water, and surface water. Manganese is necessary for proper nutrition and is part of a healthy diet, but it can have undesirable effects on certain sensitive populations at elevated concentrations. Drinking water may naturally have manganese and, when concentrations are greater than 50 ug/L (parts per billion) the water may be discolored and taste bad. Over a lifetime, the EPA recommends that people drink water with manganese levels less than 300 ug/L and over the short term, it recommends that people limit their consumption of water with levels over 1,000 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.

Sodium: Sodium-sensitive individuals, such as those experiencing hypertension, kidney failure, or congestive heart failure, who drink water containing sodium should be aware of levels where exposures are being carefully controlled.

Understanding Your Water

Footnotes, Definitions and Sources

- < Less than
- AL** Action Level: The concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow.
- HA** Health Advisory
- 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 contamination.
- NA** Not Applicable
- ND** Not Detected
- ORSG** Office of Research and Standards Guideline - State of Massachusetts
- pCi/L** Picocuries per liter
- ppb** parts per billion, or micrograms per liter (ug/L)
- ppm** parts per million, or milligrams per liter (mg/L)
- SMCL** Secondary Maximum Contaminant Level
- *** 90th percentile value in copper monitoring. Result is representative of customer sampling stagnant water. No locations exceeded the action level for copper.
- **** 90th percentile value in lead monitoring. Result is representative of customer sampling stagnant water. No locations exceeded the action level for lead.
- ***** Reported value is the highest measurement for disinfection by-products in the distribution system. Values in the range are individual measurements.
- ^** Manganese levels in Well #1A ranged from 70 to 1,000 ppb. This well ran intermittently throughout the year and only contributed 7% of the total water delivered in the Oxford System. This water gets diluted with two other wells that have manganese levels ranging from none detected (< 2 ppb) to 170 ppb. Levels of manganese found in the distribution system ranged from none detected (< 2 ppb) to 190 ppb.

Sources of Contaminants for table on left

- Arsenic:** Erosion of natural deposits.
- Barium:** Erosion of natural deposits.
- Copper:** Corrosion of household plumbing systems.
- Fluoride:** Water additive that promotes strong teeth; erosion of natural deposits.
- Lead:** Corrosion of household plumbing systems.
- Nitrate:** Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits.
- Perchlorate:** Rocket propellants, fireworks, munitions, flares, blasting agents.
- Chlorine:** Water additive used to control microbes.
- Total Trihalomethanes:** By-product of drinking water chlorination.
- Total Haloacetic Acids:** By-product of drinking water chlorination.
- Alpha Emitters:** Erosion of natural deposits.
- Uranium:** Erosion of natural deposits.
- Chloride:** Naturally present in the environment.
- Manganese:** Erosion of natural deposits.
- Sodium:** Water treatment processes; use of road salt; naturally present in the environment.
- Sulfate:** Naturally present in the environment.



Protecting water at the source

Even small quantities of pollutants may be enough to contaminate a drinking water supply. Examples of pollutants that may wash into surface water or seep into ground water include:

- ◆ Microbial contaminants from septic systems, agriculture and livestock operations, and wildlife;
- ◆ Inorganic contaminants such as salts and metals that can be naturally occurring or result from urban storm water runoff, industrial or domestic wastewater discharges, or farming;
- ◆ Pesticides and herbicides from sources such as agriculture, urban storm water runoff, and residential uses;
- ◆ Organic chemical contaminants, including synthetic and volatile organic chemicals, which are by-products of industrial processes; and
- ◆ Radioactive contaminants that can be naturally occurring.

Protecting your water at home:

Cross-Connection Control Program

Our Cross-Connection Control Program helps ensure that your drinking water is protected from possible contamination. A cross-connection, as defined by the Massachusetts Department of Environmental Protection (DEP), "is any actual or potential connection between a distribution pipe of potable water from a public water system and any waste pipe, sewer, drain, or other unapproved source that has the potential, through back pressure or back-siphonage, to create a health hazard to the public water supply and the water system within the premises."

Aquarion's DEP-certified cross-connection surveyors and testers routinely conduct surveys and test backflow prevention devices at our customers' facilities for regulatory compliance. If they find unprotected cross-connections, they will require installation of backflow prevention devices to protect the water distribution system.

The best protection against cross-connection contamination is to eliminate the link. Garden hoses are a leading cause of cross-connection contamination. At your home, you can



protect your family and the distribution system from potential contaminants by installing a simple, inexpensive backflow device called a Hose-Bibb Vacuum Breaker (HBVB) that mounts directly to your spigot.

You can help prevent water contamination

- ◆ Ensure that your septic system is working correctly.
- ◆ Use chemicals and pesticides wisely.
- ◆ Dispose of waste chemicals and used motor oil properly.
- ◆ Report illegal dumping, chemical spills, or other polluting activities to the MA DEP's Emergency Response Section at (888-304-1133), Aquarion Water (781-740-6690), or your local police.

Water conservation in your home

Our water supply is sufficient to meet your needs, but we still encourage you to conserve this precious natural resource for the good of our environment.

There are plenty of simple steps you can take to reduce your water consumption: fix faucet and toilet leaks; turn off the water while shaving or brushing your teeth; run full loads in your dishwasher and clothes washer; water your lawn in early morning; and use a broom to clean debris from your driveway instead of a hose.



Source Water Assessment Report

The Massachusetts DEP's Source Water Assessment Program (SWAP), which evaluates each water source to identify potential contamination, states that the sources that supply drinking water to the Oxford System have a high susceptibility to potential contamination. The SWAP report is available on the DEP website at mass.gov/dep/water/drinking/2226000.pdf.

Your Health Is Our Priority

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's Safe Drinking Water Hotline (**800-426-4791**).

Here is some additional information of interest about Aquarion's drinking water.

Where does your water come from?

All the water provided to Oxford customers is collected in four wells, treated, and delivered to homes and businesses through an extensive underground piping system. This system, located within the French River Watershed, serves approximately 6,100 people. The average amount of water delivered during 2014 was 615,000 gallons per day.

How is your water treated?

All water from the four wells is filtered naturally underground. The water then receives chemical treatment for disinfection, fluoridation to prevent tooth decay/cavities and pH adjustment to protect the piping system from corrosion.

Copper and Lead

Copper is an essential nutrient, but some people who drink water containing copper in excess of the action level* over a relatively short period 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. Major sources of copper in drinking water include corrosion of household plumbing systems and erosion of natural deposits.

If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Lead in drinking water comes primarily from materials and components associated with service lines and home plumbing. Aquarion Water Company is responsible for providing high quality drinking water, but cannot control the variety of materials used in plumbing components. Fortunately, the Lead in Drinking Water Act, which took effect in January 2014, requires a significant reduction of the lead content in new plumbing components that contact drinking water. As a result, the lead content in new pipes, fittings, fixtures and solder must be reduced from 8% to 0.25%.

Customers can minimize the potential for lead exposure when water has been sitting for several hours by running the 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 epa.gov/safewater/lead.

Cryptosporidium

The EPA requires public water systems that use surface water sources to monitor for Cryptosporidium. This is a microbial pathogen found in lakes and rivers throughout the U.S. that can cause gastrointestinal illness if consumed. Aquarion continues to monitor its surface water sources and has not detected Cryptosporidium.

Immuno-compromised persons

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 about drinking water 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 (**800-426-4791**).

Disinfection By-Products

Disinfection by-products (DBPs) are chemicals formed during the disinfection process, when naturally occurring organic matter reacts with chlorine, which is added to water to eliminate bacteria and other microorganisms. Currently there are limits on two types of DBPs known as Total Trihalomethanes (TTHM) and Total Haloacetic Acids (THAA). Some people who drink water containing DBPs that exceed these limits over many years may experience problems with their livers, kidneys, or central nervous systems, and may have an increased risk of getting cancer.

The state has implemented new DBP regulations that change how compliance with the standards is determined. The intent is to increase protection against the potential health risks associated with DBPs. Aquarion Water Company continues to evaluate its systems to ensure compliance with DBP regulations.

* The concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow.

Your 2014 Water Quality Report

Customers who have questions about water quality can call us at **800-832-2373**; send an email to waterquality@aquarionwater.com; or visit aquarionwater.com.

For other questions, or to report discolored water or other service problems, call the Water Quality Management Department at **800-732-9678**.

Massachusetts Department of Environmental Protection:
mass.gov/dep/water/drinking.htm
U.S. Environmental Protection Agency's Safe Drinking Water
Hotline: **800-426-4791** or epa.gov/safewater

PWS ID# MA2226000
The Oxford System



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Honoring Our Customer Commitment

Aquarion prides itself on the way it listens and responds to customers to keep our service continually improving. We've been in the public water supply business since 1857, and we are committed to providing the 2,600



Oxford homes and businesses we serve with high-quality, reliable water service for years to come.

We reaffirmed this commitment by re-establishing our Oxford Customer Advisory Board (CAB) in 2014. The CAB comprises 14 leaders from the Oxford community who represent a cross-section of our customers, from residential to industrial to non-profit. Our CAB members provide us with direct feedback on our

service performance, our community partnerships and charitable giving, capital infrastructure investments, and town government relations.

Our CAB meeting this past October featured a talk by Fran King, manager of the Oxford and

Millbury water systems, and a customer discussion session.

The group quickly got to work delving into challenges, solutions and new approaches to Aquarion's community outreach, and we encouraged members to continue submitting ideas for future community activities.

Aquarion also distributed conservation kits to the members. The kits include a low-flow faucet aerator, toilet leak detection tablets and conservation tips to help customers avoid costly surprises on their water bills. Aquarion is supplying the leak detection kits to the Oxford Housing Authority as well, to help residents in its public housing units.

The Customer Advisory Board meets on a quarterly basis. Anyone interested in joining the discussion should email [Ronit Goldstein at ronitgoldstein@aquarionwater.com](mailto:Ronit.Goldstein@aquarionwater.com).

Visit Mystic Aquarium's Beluga Whales Live!

Aquarion is the sponsor of three cameras trained on the exciting Beluga whales exhibit at Mystic Aquarium in Connecticut, the only one of its kind in New England. Go to aquarionwater.com and click on the cameras at any time during daylight hours to watch the Aquarium's three belugas – Kela, Naku and Naluark – in the 750,000-gallon, arctic marine environment created just for them.



aquarionwater.com