

*For Customers in the Hingham,
Hull and North Cohasset 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:

Aquarion's highest priority is providing clean, safe water. So, I am pleased to present your system's water quality report, showing that the water we supplied throughout 2013 met or exceeded all the standards established by state and federal health agencies.

I am also pleased to announce that Massachusetts Department of Environmental Protection has awarded our system serving Hingham, Hull, and North Cohasset for outstanding performance in 2013. This award recognizes our water system as performing in the top 5% of public water supply systems in Massachusetts.

Along with high-quality water, Aquarion is firmly committed to continuing its investment in infrastructure. Our investments included significant upgrades to mechanical, electrical, and control systems at our water treatment plant, as well as water main replacements on Union and East streets in Hingham.

We also enjoyed the opportunity to provide water for a number of community events including The Taste of Hingham; South Shore Pan-Mass. kids bike race; Hingham's Fourth of July activities; the End-of-Summer Classic at Bare Cove Park; the Nantasket Beach Run to support the Hull Boosters; the Nantasket Seaside Race supporting the Hull Education Coalition; Hull's Endless Summer event; the annual Jingle Bell Race for Hingham's schools; Keeping the Beat, which supports Boston Children's Hospital; and the Thanksgiving Turkey Trot.

Additionally, Aquarion took an active role in helping to plan for future water demand in the community. During the past year, we worked closely with Hingham officials to analyze water needs and infrastructure in South Hingham, and we partnered with local environmental groups to produce a series of forums to help raise public awareness on various topics that affect our local watershed.

During the year, we also reconvened our Community Advisory Board, a group of citizens in Hingham, Hull and North Cohasset who meet with us to provide ongoing feedback about our service. Their suggestions this year were invaluable, and I want to thank them for their contribution.

In closing, I'd like to thank all our employees for their excellent work in providing you with safe, clean water and dependable service. And above all, I thank you and all our customers for the honor of serving you.

Sincerely,

John Walsh
Vice President, Operations
Aquarion Water Company of MA

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 2013, we collected nearly 1,700 water samples, on which we conducted more than 7,500 quality tests. These tests are designed to detect and measure the presence of at least 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.

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Water Quality Table for the Hingham, Hull and North Cohasset System

Understanding Your Water

Your water has been tested for more than 100 compounds that are important to public health. Only 14 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	Hingham, Hull and North Cohasset System Detected Level	
	MCLG	MCL			Average	Range
Inorganic Compounds						
Barium (ppm)	2	2	YES	2013	0.012	0.012 – 0.013
Copper (ppm)	1.3	AL = 1.3	YES	2012	0.63*	
Fluoride (ppm)	4.0	4.0	YES	2013	0.98	0.85 – 1.13
Lead (ppb)	0	AL = 15	YES	2012	3**	
Nitrate (ppm)	10	10	YES	2013	0.470	0.140 – 0.470
Perchlorate (ppb)	NA	2	YES	2013	0.07	0.05 – 0.10
Microbials						
Turbidity (NTU)	NA	TT = 1 max	YES	2013	0.10+	0.05 – 0.16
Turbidity (NTU)	NA	TT = 95% of samples <0.3	YES	2013		100%
Disinfectant						
Chlorine (ppm)	MRDLG 4	MRDL 4	YES	2013	0.63	0.01 – 1.67
Organic Compounds						
Total Trihalomethanes (ppb)	NA	80	YES	2013	60***	19 – 112
Total Haloacetic Acids (ppb)	NA	60	YES	2013	26***	2 – 63
Inorganic Compounds						
Chloride (ppm)	NA	SMCL = 250	NA	2013	75.0	75.0
Manganese (ppb)	NA	SMCL = 50	NA	2013	20	20 – 30
Sodium (ppm)	NA	ORSG = 20	NA	2013	53	25 – 53
Sulfate (ppm)	NA	SMCL = 250	NA	2013	44	44

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.
- 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
- NTU** Nephelometric Turbidity Units, a measure of the presence of particles. Low turbidity is an indicator of high-quality water.
- ORSG** Office of Research and Standards Guideline - State of Massachusetts
- 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
- TT** Treatment Technique: A required process intended to reduce the level of a contaminant in drinking water.
- *** 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 annual average of quarterly measurements for disinfection by-products in the distribution system. Values in the range are individual measurements.
- +** Reported value is the highest monthly average for turbidity reported from the surface water treatment plant effluent. Values in the range are individual measurements.

Health Effects

- Manganese:** Manganese is a naturally occurring mineral. At a level greater than 0.05 mg/L (50 ppb), the water will appear brown, taste unpleasant, and may leave black stains on fixtures or on laundry. While manganese is part of a healthy diet, it can be harmful if consumed in large concentrations.
- 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.

Sources of Contaminants for table on left

- 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:** Fireworks, munitions, flares, blasting agents.
- Turbidity:** Sediment particles; naturally occurring iron and manganese; soil runoff.
- Chlorine:** Water additive used to control microbes.
- Total Trihalomethanes:** By-product of drinking water chlorination.
- Total Haloacetic Acids:** By-product of drinking water chlorination.
- 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 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 backpressure 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.

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 water sources that supply drinking water to the Hingham, Hull and North Cohasset System have a high susceptibility to potential contamination. The report is available on the DEP website at mass.gov/dep/water/drinking/3131000.pdf.

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.

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 Massachusetts Department of Environmental Protection's Emergency Response Section (**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.



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?

The water delivered to Hingham, Hull and North Cohasset customers is collected in a reservoir and wells in Hingham and pumped to the Hingham/Hull District water treatment facility. Once treated, the water is then pumped to storage tanks, where it flows by gravity through 190 miles of pipe to our customers. This system, located in the Weir River Watershed, provides water for about 32,400 people during the winter and 47,000 in the summer.

The average amount of water delivered during 2013 was 3.4 million gallons per day. On average, 99,700 gallons per day was pumped through the Cohasset interconnection. In addition, the distribution system is interconnected with Weymouth's water supply system for use in emergencies.

How is your water treated?

All water from our wells and reservoir, except water from the Downing Street Well, is treated at our Hingham/Hull District water treatment facility. Treatment consists of adding chemicals that cause impurities to form into small particles. A clarification process removes most of these particles from the water, and then the water is filtered through granular-activated carbon and sand to remove remaining particles. Other chemicals are added to provide disinfection, fluoridation, and corrosion control in the water mains. The Downing Street Well water is filtered naturally underground, then chemicals are added for disinfection, fluoridation, and corrosion control. Cohasset water entering the system is treated similarly to water from the Hingham/Hull District water treatment facility.

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 did not detect Cryptosporidium in the reservoir that serves the Hingham/Hull System in our most recent testing.

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.

New DBP regulations that change how compliance with the standards is determined are coming into effect now. 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.

Your 2013 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#: MA4131000
The Hingham, Hull and
North Cohasset System



900 Main Street, Hingham, MA 02043

Reforestation Project Benefits Begin to Sprout

Everyone knows the wisdom of making lemonade from the lemons that life can dole out. But what do you do when a hurricane leaves over 100 acres of storm-shattered trees in its wake, many lying in a jumble on the ground? Especially when that forest had been protecting vital reservoirs for neighboring communities.

This was the question facing Aquarion Water Company in late 2012 after Hurricane Sandy swept through watershed land surrounding one of its major reservoirs.

Working with forest and wildlife experts, Aquarion developed a plan for "making lemonade" by enabling the landscape to transition to a richer, more diverse habitat than the one the hurricane destroyed.

The first step was to bring in teams of certified foresters to assess and clean up the devastation. They removed hundreds of fallen and broken trees and cut down some still-standing but storm-damaged white pine trees. This species had dominated the landscape but, as Sandy proved, it had made the forest notoriously vulnerable to high winds.

These efforts made room for the regeneration

of a native, mixed hardwood forest that will be much less susceptible not only to major storms, but also to diseases that can quickly wipe out forests made up of a single tree species. As the mixed forest grows, the landscape will transition naturally into wildlife-friendly "shrub habitat" that supports far more bird and animal species than the mature pine forest Hurricane Sandy destroyed.

Just ask the bald eagles. Two mature eagles and one youngster already have been spotted in the restored area. With its new mix of young trees and shrubs providing food and shelter, the regrowing forest will be valuable habitat for many bird species, such as the American Woodcock, Eastern Towhee, and Prairie Warbler, whose populations are in decline.

As the forest matures, naturalists from Aquarion and our partner organizations will monitor its progress closely. We'll also continue to manage the entire watershed so it can provide a lot more than the makings of lemonade. It's all part of Aquarion's mission to deliver the highest quality water to customers and help ensure the quality of life for generations to come.



Visit Mystic Aquarium's Beluga Whales Live!

Aquarion is now 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