

TOWN OF HOLLISTON DEPARTMENT OF PUBLIC WORKS – WATER DIVISION



703 WASHINGTON STREET, HOLLISTON, MA 01746

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508-429-0603

Public Water Supply ID # 2136000

2014 ANNUAL DRINKING WATER QUALITY REPORT

WATER SYSTEM

Your water system is routinely inspected and continuously monitored by the Massachusetts Department of Environmental Protection (MassDEP) to ensure that we provide the highest quality of water available, your system is operated by Massachusetts Certified Operators who oversee the routine operations of the system.

OPPORTUNITIES FOR PUBLIC PARTICIPATION

Water supply topics and concerns are addressed at Board of Selectmen's meetings, which are held bi-weekly at 7:30 PM in the Town Hall. If you would like to participate in discussions regarding your water quality, you may attend these meetings. Agendas are posted at the Town Hall, 703 Washington Street. Please contact the Water Department for information on meetings that contain water supply related agenda topics.

YOUR DRINKING WATER SOURCES

Where Does My Drinking Water Come From?

Holliston's water is drawn from six (6) groundwater supply wells located on properties owned and/or managed by the Holliston Water Department. The following is a list of the water supply sources, locations, and their total pumpage in 2014.

Source Name	DEP Source ID#	Gallons Pumped 2014	Location of Source
Well #1	2136000-01G	240,000	Off of Stoddard Park Road
Well #4	2136000-04G	13,754,000	Off of Washington Street
Well #5	2136000-05G	201,920,000	Off of Central Street
Well #6	2136000-06G	1,156,000	Off of Brook Street
Well #7	2136000-07G	80,720,000	Off of Mohawk Path
Well #8	2136000-08G	99,578,000	Off of Maple Street

Over 397 million gallons of water was pumped from the Town's water supply sources to the distribution system in 2014. Holliston Water Department currently has five water storage tanks that have a total holding capacity of 5.6 million gallons.

How Are These Sources Protected?

MassDEP has prepared a Source Water Assessment and Protection (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 moderate for Wells 1 and 8 and high for Wells 4, 5, and 6 were assigned using the information collected during the assessment by MassDEP.

Where Can I See The SWAP Report?

The complete SWAP report is available at the Water Department, Board of Health and online at <http://www.mass.gov/eea/docs/dep/water/drinking/swap/cero/2136000.pdf>. For more information contact Sean M. Reese, Holliston Director of Public Works 508-429-0603 or Email reeses@holliston.k12.ma.us

The Holliston Water System has emergency interconnections with both the Milford Water Company and the Ashland water system. The interconnection with the Milford Water Company's system is via an 8-inch asbestos cement (AC) water main in Route 16. The connection with Ashland is through an 8-inch AC water main in Cedar Street. In case of an emergency and with authorization, the Holliston Water Department can activate one or both of these interconnections.

The most recent sanitary survey of our system was conducted in October, 2014 by the MassDEP. The Holliston Water Department responded by eliminating any noted deficiencies, thus complying with the survey findings. The Water Department has an active Cross Connection Control Program and our staffing plan has been updated to comply with MassDEP.

How Is My Water Treated?

The Water Department makes every effort to provide you with safe drinking water. To improve the quality of the water delivered to you, we treat your drinking water in a number of different ways, depending on the source water quality. How we treat water from the different sources is described below. The water quality of our system is constantly monitored by us and MassDEP to determine the effectiveness of existing water treatment and to determine if any additional treatment is required. All chemicals used for the various treatment processes described above are approved for water treatment by one of the following organizations: National Sanitation Foundation (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.

Iron & Manganese Filtration Iron and manganese are often present in groundwater at levels that can discolor the water or cause it to have unpleasant odors and tastes. Even though the water may be safe to drink, it is preferable that the iron and manganese be treated. Wells #4, #6 and #7 are sources that receive filtration. The water pumped from these wells is filtered at water treatment plants to remove the iron and manganese. Removal generally requires a two-step process of oxidation and filtration. Oxidation is accomplished by adding an oxidant such as chlorine or potassium permanganate 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 (greensand) that is specifically designed to capture iron and manganese particles. Over time, filters clog and are cleaned using a high-flow backwash process. Chlorine is added for disinfection during the filtration process to provide a chlorine residual throughout the distribution system.

Disinfection Some ground water sources contain numerous microorganisms. Some of the microorganisms can cause people to become sick. To eliminate disease-carrying organisms, it is necessary to disinfect the water. Disinfection does not sterilize the water; it destroys the harmful organisms. Sterilization is too costly and kills all organisms, even though most are not harmful. The Town uses sodium hypochlorite as a disinfectant. Disinfection ensures the water is free of harmful organisms and is safe to drink.

Corrosion Control Many New England water sources are naturally corrosive. The water from these sources tends to corrode and dissolve the metal pipes it flows through. This not only damages pipes, but it can also add metals such as lead and copper to the drinking water. For this reason, it is beneficial to add chemicals to the water to make the water noncorrosive. The Town adds controlled amounts of zinc orthophosphate to its water for corrosion control. Testing throughout the Town's water system has shown this treatment has been effective in reducing lead and copper in the drinking water.

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, which may come from sewage treatment plants, septic systems, agricultural livestock operations, domestic animal wastes 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, mining, and 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 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 Department of Environmental Protection (MassDEP) and U.S. Environmental Protection Agency (EPA) prescribe regulations that limit the amount of certain contaminants in water provided by public water systems. The Food and Drug Administration (FDA) and Massachusetts Department of Public Health (DPH) 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's Safe Drinking Water Hotline (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 and Prevention (CDC) guidelines on lowering the risk of infection by cryptosporidium and other microbial contaminants are available from the Safe Drinking Water Hotline (800)-426-4791.

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 (chlorine, chloramines, chlorine dioxide) 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 (chlorine, chloramines, chlorine dioxide) below which there is no known or expected risk to health.

MRDLG's do not reflect the benefits of the use of disinfectants to control microbial contaminants.

Treatment Technique (TT) -- A required process intended to reduce the level of a contaminant in drinking water.

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

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

ppm = parts per million, or milligrams per liter (mg/l)

pCi/l = picocuries per liter (a measure of radioactivity)

ND = Not detected; the contaminant value measured was not above the detection level of the test method.

ppb = parts per billion, or micrograms per liter (ug/l)

NTU=Nephelometric Turbidity Units

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.

WATER QUALITY TESTING RESULTS

WHAT DOES THIS DATA REPRESENT?

The water quality information presented in the tables below is from the most recent round of testing done in accordance with regulations. This data represents the quality of the water provided from Holliston's sources during 2014 unless noted. Reports of laboratory analysis for these samples were submitted to MassDEP as required. Only the detected contaminants are shown.

Each month the Holliston Water Supply collects treated water samples to monitor for the presence of bacteria within our distribution system. We are also required to sample untreated water from our sources so we can identify potential issues early. The first table below shows the results of our routine distribution sampling.

Bacteria	Highest % Positive in a month	Total # Positive	MCL	MCLG	Violation (Y/N)	Possible Source of Contamination
Total Coliform	7%	2	<5%	0	Y	Naturally present in the environment
E. coli	0	0	*	0	N	Human and animal fecal waste

* Compliance with the E. coli MCL is determined upon additional testing.

The Town of Holliston is on a reduced Lead and Copper sampling schedule. The next round of samples taken for lead and copper will be in September of 2015.

	Date Collected	90 TH percentile	Action Level	MCLG	# of sites sampled	# of sites above Action Level	Possible Source of Contamination
Lead (ppb)	09/20/12	3	15	0	31	0	Corrosion of household plumbing systems
Copper (ppm)	09/20/12	0.30	1.3	1.3	31	0	Corrosion of household plumbing systems

Regulated Contaminant	Date(s) Collected	Highest Detect	Range Detected	MCL	MCLG	Violation (Y/N)	Possible Source(s) of Contamination
Inorganic Contaminants							
Barium (ppm)	6/2014	0.04	0.01 to 0.04	2	2	N	Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits
Perchlorate (ppm)	5/2014 9/2014 10/2014 11/2014	1.1	ND to 1.1	2	N/A	N	Rocket propellants, fireworks, munitions, flares, blasting agents
Fluoride (ppm) *	Monthly	0.95	0.59 to 0.95	4	4	N	Water additive that promotes strong teeth.

Nitrate (ppm)	6/2014 9/2014 11/2014	6	1.1 - 6	10	10	N	Runoff from fertilizers; leaching from septic tanks; sewage; erosion of natural deposits
Radioactive Contaminants							
Radium- 226 and -228 combined (pCi/L)	Quarterly	1.3	0.08 - 1.3	5	0	N	Erosion of natural deposits
Gross Alpha (pCi/l)	Quarterly	2.9	ND 6 2.9	15	0	N	Erosion of natural deposits

* Fluoride also has a secondary contaminant level (SMCL) of 2 ppm. Fluoride is added in an effort to help prevent tooth decay / cavities.

Regulated Contaminant	Date(s) Collected	Highest RAA* Detected	Range Detected	MCL or MRDL	MCLG or MRDLG	Violation (Y/N)	Possible Source(s) of Contamination
Disinfectants and Disinfection By-Products							
Total Trihalomethanes (TTHMs) (ppb)	Quarterly in 2014	74	15 - 100	80	----	N	By-product of drinking water chlorination
Haloacetic Acids (HAA5) (ppb)	Quarterly in 2014	32	1 - 27	60	----	N	By-product of drinking water disinfection
Chlorine (ppm) (total)	Monthly in 2014	0.6	ND 6 1.5	4	4	N	Water additive used to control microbes

* Highest running annual average (RAA) is the highest average of four consecutive quarters.

Unregulated contaminants are those for which there are no established drinking water standards. The purpose of unregulated contaminant monitoring is to assist regulatory agencies in determining their occurrence in drinking water and whether future regulation is warranted.

Unregulated and Secondary Contaminants	Date(s) Collected	Result or Range	Average	SMCL	ORSG	Possible Source
Manganese (ppb)	2014	ND - 84	22	50	300**	Erosion of natural deposits
Iron (ppb)	2014	ND 6 95	12	300	----	Naturally occurring, corrosion of cast iron pipes
Nickel (ppm)	6/2014	0.004	0.004	----	0.1	Discharge from industrial processes
Sodium (ppm)	6/2014	11 - 63	44	--	20	Natural sources; runoff from road salt
Other Organic Contaminants – When detected as treatment plant VOC residuals, not TTHM compliance						
Bromodichloromethane	Quarterly	0.5 - 5	1.6	----	----	By-product of drinking water chlorination
Chloroform (ppb)	Quarterly	18	18	----	----	By-product of drinking water chlorination
Chlorodibromomethane	Quarterly	1	0.7 - 1	----	----	By-product of drinking water chlorination

* The highest results for manganese and iron came from the Stoddard Park Well, which was taken offline on November, 2014. Our other sources had levels of iron and manganese that were well below the SMCL and ORSG.

** EPA and MassDEP have established public health advisory levels for manganese to protect against potential neurological effects.

COMPLIANCE WITH DRINKING WATER REGULATIONS IN 2014

Does My Drinking Water Meet Current Health Standards?

We are committed to providing you with the best water quality available. However some contaminants that were tested last year did not meet all applicable health standards regulated by the state and federal government. Due to contaminant violations of monthly MCL (maximum contaminant level) for Total Coliform during the period of February 2014 our system took the following corrective actions.

- We collected additional samples.
- We flushed the distribution system to eliminate coliform bacteria.

Health Effects Statements

Total Coliform: Coliforms are bacteria that are naturally present in the environment and are used as an indicator that other potentially harmful bacteria may be present. Coliforms were found in more samples than allowed and this was a warning of potential problems.

Nitrate: Nitrate in drinking water at levels above 10 ppm is a health risk for infants less than six months old. High nitrate levels in drinking water can cause blue baby syndrome. Nitrate levels may rise quickly for short periods of time because of rainfall or agricultural activity. If you are caring for an infant, you should ask for advice from your health care provider.

Sodium: Sensitive individuals, such as those experiencing hypertension, kidney failure, or congestive heart failure, should be aware of the sodium levels where exposures are being carefully controlled.

EDUCATIONAL INFORMATION

Do I Need To Be Concerned About Certain Contaminants Detected In My Water?

Lead - 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 Holliston 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>. Sampling results from September 2012 resulted in the Holliston water system meeting the regulations for lead and copper.

Manganese - EPA has established a lifetime health advisory (HA) value of 0.3 ppm for manganese to protect against concerns of potential neurological effects, and a One-day and 10-day HA of 1 ppm for acute exposure. However, it is advised that for infants younger than 6 months, the lifetime HA of 0.3 ppm be used even for an acute exposure of 10 days.

ADDITIONAL INFORMATION

Remember, water is a precious resource and it is everyone's responsibility to conserve it.

There is an outdoor water use restriction in place for the Summer of 2015. See the Town's website (townofholliston.us) for these water use restrictions.

Protecting our water sources is just as important as conserving drinking water. You play an important role in protecting your water resources. To help us protect your water sources:

- Use fertilizers, insecticides, and herbicides sparingly and follow the manufacturers' instructions.
- Never pour harsh chemicals or cleaners down your toilet or sink. Instead, dispose of them and other materials such as paints and thinners during household hazardous waste collection programs.
- If you have a septic system, have it pumped out every two years and do not use septic system cleaners.
- Immediately notify the DPW (or Police outside 7AM to 3:30PM M-F) if you notice anyone - trespassing or riding motorized vehicles near the wells, storage tanks or vandalizing any water supply facilities.

Protecting drinking water from contamination is also done using backflow prevention devices such as hose bibbs. These inexpensive devices can be installed on outside faucets to help prevent contaminated water from entering drinking water pipes in the event of a sudden drop in water pressure. Also, every in-ground sprinkler system must have a backflow device that is tested every year. These devices help prevent contaminants such as lawn fertilizers and pesticides from entering the drinking water supply piping. Commercial, industrial, institutional and municipal water customers also must have backflow devices. These devices must be tested (yearly or semiannually depending on the type of device) and the test report must be submitted to the Water Department. If you have questions about backflow devices please contact us.

If you have any questions or comments about this report contact the Department of Public Works - Water Division or Mr. Sean M. Reese, Director of Public Works at (508) 429-0603.