

2016 ANNUAL DRINKING WATER QUALITY REPORT

Halifax Water Department Halifax, Massachusetts DEP PWSID # 4118000

This report is a snapshot of drinking water quality that we provided last year. Included are details about where your water comes from, what it contains, and how it compares to state and federal standards. We are committed to providing you with information because informed customers are our best allies.

PUBLIC WATER SYSTEM INFORMATION

Address: 500 Plymouth Street
Contact Person: Keith Swanson, Water Superintendent
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Internet Address: http://www.town.halifax.ma.us/Pages/HalifaxMA_Water/index

Water System Improvements

Our water system is routinely inspected by the Massachusetts Department of Environmental Protection (DEP) 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 Massachusetts certified operators who oversee the routine operations of our system.

Opportunities for Public Participation

If you would like participate in discussions regarding your water quality, you are encouraged to attend any of our regularly scheduled meetings. We meet on the second Tuesday of each month at 7:00 p.m. at the Water Department Headquarters at 500 Plymouth Street.

YOUR DRINKING WATER SOURCE

Source Water Description

The Town of Halifax water distribution system includes four water supplies at two sources. The Richmond Park Well site includes two gravel-packed wells: Richmond Park Well No.1(MA DEP Source ID 4118000-01G) and Richmond Park Well No. 2 (MA DEP Source ID 4118000-02G). The wells, located off Plymouth Street near Pine Brook Drive, were constructed in 1965 and 1972, respectively. The Richmond Park Well site includes a treatment facility for iron and manganese removal along with disinfection and pH adjustment. The YMCA Camp Well site includes two gravel-packed wells: YMCA Camp Well No. 3 (MA DEP Source ID 4118000-03G and YMCA Camp Well No. 4 (MA DEP Source ID 4118000-04G). These wells, located at the end of Lingan Street were constructed in 1990 and 2004, respectively. The wells are treated at the YMCA Camp chemical feed building for disinfection and pH adjustment.

During 2016, the four wells provided 175,000,000 gallons of potable water to 2,824 residential, commercial, municipal and industrial accounts. These sources also supply water for fire protection. 753,000 gallons of this water was sold to the Town of Pembroke (PWS 4231000) in 2016.

The Town of Halifax distribution system consists of approximately 49 miles of water mains ranging in size from two to twelve inches in diameter. The Town has one water storage facility: the Plymouth Street Tank, which is an elevated steel tank located behind the Town Hall. The tank was constructed in 1960 and has a capacity of a half million gallons. The Tank was rehabilitated in late 2015.

Source Water Assessment

DEP 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 these drinking water sources to contamination. According to SWAP, our system has a susceptibility ranking of medium. The Halifax SWAP report is available at the Water Department Office at 500 Plymouth Street during regular office hours. In addition, the SWAP report is available in its entirety on line at <http://www.mass.gov/eea/docs/dep/water/drinking/swap/sero/418000.pdf>

Residents and Businesses Can Help Protect Halifax's Sources By:

- Practicing good septic system maintenance
- Supporting water supply protection initiatives at the next town meeting
- Taking hazardous household chemicals to hazardous materials collection days
- Limiting pesticide and fertilizer use

EDUCATIONAL INFORMATION

Water Main Flushing

Distribution mains convey water to homes, businesses and hydrants in your neighborhood. The water entering the mains is of high quality, however, water quality can deteriorate in areas of the distribution mains over time. Water main flushing is the process of cleaning the interior of water these mains by sending rapid flow of water through the pipes.

During flushing operations in your neighborhood, you should avoid tap water for household use. If you do use the tap, allow your cold water to run for a few minutes at full velocity before use and avoid using hot water to prevent sediment accumulation in your hot water tank.

Please contact us if you have any questions or if you would like more information on our water main flushing schedule.

SUBSTANCES FOUND IN TAP WATER

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.)

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.

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).

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

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.

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.

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

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

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

ND: Not Detected **N/A**: Not Applicable

WATER QUALITY TESTING RESULTS

What Does This Data Represent?

The water quality information presented in the following 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.

REGULATED CONTAMINANTS

Microbiological							
Contaminant	Highest # Positive in a month			MCL	MCLG	Violation (Y/N)	Possible Sources of Contamination
Total Coliform	1			1	0	N	Coliforms are bacteria that are naturally present in the environment and are used as an indicator that other, potentially harmful, waterborne pathogens may be present or that a potential pathway exists through which contamination may enter the drinking water distribution system.
Inorganics							
Contaminant	Dates Collected	Highest Result	Range Detected	MCL	MCLG	Violation (Y/N)	Possible Sources of Contamination
Chlorine (ppm)	2016			[MRDL-4]	[MRDLG-4]	N	Water additive used to control microbes
Nitrate (ppm)	2016	0.28	ND-0.28	10	10	N	Runoff from fertilized use; leaching from septic tanks, sewage; erosion of natural deposits
Perchlorate (ppb)	2014	0.28	0.07-0.28	2	N/A	N	Rocket propellants, fireworks, munitions, flares, blasting agents
Radioactive Contaminants							
Gross Alpha (pCi/l)	2014	1.1	1.1	15	0	N	Erosion of natural deposits
Combined Radium (pCi/l)	2014	0.93	0.93	50	0	N	
Volatile Organic Compounds							
Trihalomethane	2016	ND	ND	80	---	N	By-product of drinking water disinfection
Haloacetic Acids	2016	ND	ND	60	---	N	By-product of drinking water disinfection
Tetrachloroethylene	2016	0.8	ND-0.8	5	---	N	Discharge from factories and dry cleaners
Lead & Copper							
Contaminant	Dates Collected	90 th Percentile	Action Level (AL)	MCLG	# Sites Sampled	# Sites Above AL	Possible Sources of Contamination
Lead (ppb)	2014	12	15	0	22	2	Corrosion of household plumbing systems; erosion of natural deposits
Copper (ppm)	2014	0.46	1.3	1.3	22	0	Corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives

UNREGULATED CONTAMINANTS: Unregulated contaminants are those for which there are no 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.

Inorganic Contaminants						
Contaminant	Date Collected	Highest Result	Range Detected	SMCL	ORSG	Possible Sources of Contamination
Nickel (ppm)	2012	0.005	N/A	--	0.1	Discharge from industrial processes
Sodium (ppm)	2015	33.9	33.9	--	20	Natural sources; runoff from use of salt on roadways; by-product of water treatment process
Organic Contaminants						
MTBE – Methyl Tertiary Butyl Ether (ppb)	2016	2.2	ND-2.2	20-40	70	Fuel additive; leaks and spills from gasoline storage tanks
Other Organic Contaminants						
Bromodichloromethane (ppb)	2016	8.6	ND-8.6	--	--	By-product of drinking water chlorination.
Chlorodibromomethane (ppb)	2016	2.9	ND-2.9	--	--	
Chloroform (ppb)	2016	21.2	ND-21.2	--	--	
Secondary Contaminants						
Iron (ppb)	2013	520	390-650	300	--	Naturally occurring, corrosion of cast iron pipes
Manganese (ppb)	2016	286	128-286	50	--	Erosion of natural deposits

Source Waivers

MA DEP has granted the Halifax Water Department waivers for Inorganic and Synthetic Compounds at all four wells because the sources are not at risk for these contaminants.

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 Halifax 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>.

Sodium: 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.

Manganese: 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 µg/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 µg/L, nor should formula for infants be made with that water for longer than 10 days

MTBE: The Massachusetts Office of Research and Standards (ORSG) has adopted a guideline of 70 µg/L (ppb) as a health protective concentration for MTBE in drinking water. MTBE also has a secondary MCL of 20-40 ppb.

Trihalomethanes: Some people who drink water containing trihalomethanes in excess of the MCL over many years may experience problems with their liver, kidneys, or central nervous systems, and may have an increased risk of getting cancer.

Haloacetic Acids: Some people who drink water containing haloacetic acids in excess of the MCL over many years may have an increased risk of getting cancer.



Halifax Water

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ADDITIONAL INFORMATION

What is a Cross Connection and What Can I do about it?

Cross-connections that contaminate drinking water distribution lines are a major safety 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 of questionable quality. Cross connection contamination can occur when pressure in the equipment or system is greater than the drinking water line.

Outside water taps and garden hoses tend to be a common source of cross-connection contamination in the home. A garden hose creates a hazard when submerged in a swimming pool, left attached to a chemical sprayer or left lying on the ground contaminated by cesspools, fertilizers or garden chemicals. Using an attachment on your hose called a backflow prevention device can prevent this problem.

The Halifax Water Department recommends the installation of backflow prevention devices, such as a low cost hose bib vacuum breaker, for all inside and outside hose connections. You can purchase this at a hardware store or plumbing supply store. This is a great way for you to help protect the water in your home as well as the drinking water system in your town. For additional information on cross connections and on the status of your water systems cross connection program, please contact the Halifax Water Department at 781-293-1733.