



2015
Annual Drinking Water Quality Report
Hopkinton Water Department
 PWS ID No. 2139000

We are pleased to present to you this year's Annual Quality Water Report. This report is designed to inform you of the water quality and services we deliver to you every day. The Hopkinton Water Department's (Department) constant goal is to provide you with a safe and dependable supply of drinking water while continually improving the water treatment process and protecting our water resources. We want you to understand the efforts we make and are committed to providing you with the best water quality available. If you have any questions about this Report, or have any questions regarding your water utility, please contact **Eric Carty of the Hopkinton Department of Public Works at 508-497-9765**. We want our valued customers to be informed about their water utility. If you want to learn more, please attend any of our regularly scheduled meetings. The meetings are usually bi-monthly and held in the Town Hall. Please check the meeting schedule at Town Hall for dates and times.

Your Water System

The Hopkinton Municipal water system currently consists of 76 miles of water mains, 3,317 service connections, and a total of 709 fire hydrants. In 2015 we produced and delivered approximately 360,285,000 gallons of water. To promote water conservation, we continue to offer a water device retro-fit program. **Free** water efficient showerheads, aerators and toilet flaps are available at the Water Department.

Our water system uses ground water as its primary water source, in addition to water purchased from Ashland's Howe Street Water Treatment Facility (WTF). Our groundwater sources include the following eight wells.

<i>Source Name</i>	<i>DEP Source ID#</i>	<i>Source Type</i>	<i>Location of Source</i>
Fruit St. Well No. 1	2139000-01G	Groundwater	Off Fruit Street
Fruit St. Well No. 2	2139000-02G	Groundwater	Off Fruit Street
Fruit St. Well No. 3	2139000-03G	Groundwater	Off Fruit Street
Whitehall Well No. 4	2139000-04G	Groundwater	Off Donna Pass near Whitehall Reservoir
Whitehall Well No. 4	2139000-05G	Groundwater	Off Donna Pass near Whitehall Reservoir
Fruit St. Well No. 6	2139000-06G	Groundwater	Off Fruit Street
Well No. 7	2139000-07G	Groundwater	Off Alprilla Farm Road
Well No. 8	2139000-08G	Groundwater	Off Alprilla Farm Road

Is My Water Treated?

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. This includes a disinfectant to protect you against microbial contaminants and chemical treatment to reduce lead and copper concentrations. In addition to chemical treatment, water from the Howe St. WTF in Ashland is filtered.

Department Activity for 2015

The completion of Legacy Farms North water main has provided a significant flow improvement and system redundancy for the Ashland connection. We continued to repair leaks in the system and complete upgrades. Design plans for replacing the water main on Cedar St. and replacement of the Grove St. tanks has begun. The free water conservation and hose bibs programs to prevent backflows from outside faucets were also continued.

Substances Found in Your Drinking Water

The Hopkinton Water Department routinely monitors for constituents in your drinking water according to Federal and State regulations. As water travels over the land or underground, it may pick up substances or contaminants such as microbes, inorganic and organic chemicals, and radioactive substances. In 2015 alone we collected hundreds of water samples from the system. These tables show the results of our monitoring for the period of January 1st to December 31st, 2015. We are proud to report that last year your drinking water met all applicable health standards regulated by the state and federal government. The state requires us to monitor some contaminants lead and copper less than once per year because the concentrations of these contaminants do not change frequently. Please note, as a result of the less frequent mandatory testing, some of our data is more than one year old. A separate table is provided by the Town of Ashland for monitoring data from the Howe Street WTF.

Natural Source Water Constituents

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. It 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, 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, or farming.

Pesticides and herbicides -which may come from a variety of sources such as agricultural, 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 U.S. Environmental Protection Agency (EPA) prescribes regulations that limit the amount of certain contaminants in water provided by public water systems. The Food and Drug Administration (FDA) 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 at 800.426.4791**.

MCL's are set at very stringent levels. To understand the possible health effects described for many regulated constituents, a person would have to drink 2 liters of water every day at the MCL level for a lifetime to have a one-in-a-million chance of having the described health effect.

We're proud that your drinking water meets or exceeds all Federal and State requirements. We have learned through our monitoring and testing that some constituents have been detected. The EPA has determined that your water **IS SAFE** at these levels.

Definition of Terms:

Action Level - the concentration of a contaminant that, if exceeded, triggers treatment or other requirements that a water system must follow.

Non-Detects (ND) - laboratory analysis indicates that the constituent is not present or is present below current technology.

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.

Maximum Contaminant Level - The "Maximum Allowed" (MCL) is 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 - The "Goal" (MCLG) is 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.

Million Fibers per Liter (MFL) – A measure of asbestos fibers longer than 10 µm.

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.

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.

Parts per million (ppm) or Milligrams per liter (mg/l) - one part per million corresponds to one minute in two years or a single penny in \$10,000.

Parts per billion (ppb) or Micrograms per liter - one part per billion corresponds to one minute in 2,000 years, or a single penny in \$10,000,000.

Picocuries per liter (pCi/L) – a measure of radiation

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

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

Inorganic Contaminants								
Contaminant	Violation Y/N	Dates Collected	Highest Detected	Range Detected	Average	MCLG	MCL	Likely Source of Contamination
Asbestos (MFL)	NO	2012	0.78	NA	0.78	7	7	Decay of asbestos cement water mains; erosion of natural deposits
Barium (ppm)	NO	2015	0.013	0.008-0.013	0.01	2	2	Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits
Fluoride	NO	2015	0.2	ND – 0.2	0.1	4	4	Erosion of natural deposits; Water additive which promotes strong teeth; Discharge from fertilizer and aluminum factories
Nitrate (ppm)	NO	2015	2.4	0.06 – 2.4	1.3	10	10	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits
Radioactive Contaminants								
Gross Alpha (pCi/L)	NO	2015	0.88	0.51 – 3.11	1.12	0	15	Erosion of natural deposits
Radium 226 & 228 (pCi/L) (combined values)	NO	2015	0.20	0.16 – 0.20	0.18	5	0	Erosion of natural deposits
Disinfection By-Products Measured in the System								
Total Trihalomethanes (ppb)	NO	2015	41	9 – 41	25	0	80	By-product of drinking water chlorination
Haloacetic Acids (ppb)	NO	2015	3.2	ND – 3.2	1.6	0	60	By-product of drinking water chlorination
Bacteria								
Contaminant	Violation Y/N	Highest # Positive in a Month	MCL	MCLG	Likely Source of Contamination			
Total Coliform	NO	1	1	0	Naturally present in the			
Fecal Coliform or E. coli	NO	0	0	0	Human and animal fecal			
Lead and Copper								
Contaminant	Violation Y/N	Dates Collected	90 th Percentile	Action Level	# of Sites Sampled	# Sites above AL	Likely Source of Contamination	
Copper (ppm)	NO	2014	1.0	1.3	20	0	Corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives	
Lead (ppb)	NO	2014	10	15	20	2	Corrosion of household plumbing systems, erosion of natural deposits	

(1) Fluoride has a secondary contaminant level (SMCL) of 2 ppm to better protect human health.

Lead & Copper

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 Hopkinton 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>.

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						
Contaminant	Date Collected	Range Detected	Average	SMCL	ORSG	Likely Source of Contamination
Sodium (ppm)	2015	23 – 60	41	---	20	Natural sources; runoff from use as salt on roadways; by-product of treatment process
Sulfate (ppm)	2013	7.6	7.6	250	---	Runoff/leaching from natural deposits, industrial wastes
Iron (ppb)	2015	ND – 6,660	603	300	---	Leaching from natural deposits, industrial wastes
Manganese (ppb) Well No. 1 Well No. 2 Well No. 5	2015	14 – 36 4 – 1,008 164 - 173	28 591 167	50	Health Advisory of 300 ppb*	Leaching from natural deposits
Nickel (ppm)	2013	ND-0.0037	0.001	----	0.1	Discharge from industrial processes
Organic Contaminants						
Chlorodibromomethane (ppb)	2015	ND – 0.52		----	----	By-product of drinking water chlorination

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

Well 2 is operated in conjunction with Well 1 and 6 to reduce the impact of manganese entering the water system.

Sodium

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

Manganese

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_ccl_magnese_dwreport.pdf

SWAP: Source Water Assessment Protection: **What Is My System's Ranking?** A susceptibility ranking of **moderate** was assigned to this system using the information collected during the assessment by the DEP. **Where Can I See The SWAP Report?** The complete SWAP report is available at the Hopkinton Water Department and online at the MassDEP website - <http://www.mass.gov/dep/water/drinking/2139000.pdf>. For more information, call Eric Carty 508-497-9765. We ask that you please be cognizant that any pesticides, herbicides or chemical lawn care you use could potentially make their way into your water supply. We ask that you please use organic products that are available at home improvement stores and Weston Nurseries.

We also ask that you refrain from storing oil, gasoline, paints and other potential hazards, in old containers or drums that may leak. If you have these items and need to dispose of them, please contact the DPW at 508-497-9740. Each spring a hazardous waste collection is held and these products can be disposed of properly during this time. We thank you for your assistance in preserving and protecting our precious water supplies. If you have any questions, please feel free to give me a call.

Backflow Prevention

With the expanding use of irrigation systems using town water, and other potential backflows present, we are compelled to present information on cross-connections. Examples around the home include: hand held fertilizer applicators, laundry sink spigot below the overflow of the sink, and buried irrigation piping. Leaving your running hose submerged in the pool while filling is also a potential backflow. The Department has instituted a **free** hose bib program while supplies are available. These bibs can be attached to your outside silcock and will prevent the backflow or back-siphonage of potentially dangerous chemicals into your home. Commercially these include: water for an equipment process, filling of hydro-seeding trucks, and fire sprinklers. A sudden loss in water pressure due to a main break could result in non-potable or contaminated water being introduced into the distribution system. If a person plans to perform these activities a backflow prevention device should be utilized. Commercial applications are already protected and annually inspected by the DPW. We are requesting that each homeowner be aware of the potential danger. For more information please visit our Website or contact our CC coordinator, Jed Fenneuff.

Water Quality Summary – Howe Street Water Treatment Facility, Ashland							
Secondary Substances							
Contaminant	Violation Y/N	Date Collected	Amount Detected	Range Detected	SMCL	Likely Source of Contamination	
Color (units)	NO	2015	0.2	0 – 8.0	15	Naturally occurring organic material	
Manganese ⁽¹⁾ (ppb)	NO	2015	9	0 – 40	Health Advisory of 300 ppb	Leaching from natural deposits	
Iron (ppb)	NO	2015	12	0 - 100	300	Leaching from natural deposits, industrial wastes	
pH (units)	NO	2015	7.3	6.6–8.86 ⁽³⁾	6.5 – 8.5	Naturally occurring	
Regulated Substances							
Contaminant	Violation Y/N	Date Collected	Highest Detected	Range Detected	MCLG [MDRL]	MCL [MDRL]	Likely Source of Contamination
Bromate (ppb)	NO	2015	10	0-10	0	10	By-product of drinking water disinfection
Chloramines (ppm)	NO	2015	2.40	0.28 – 2.40	[4]	[4]	Water additive used to control microbes
Nitrate (ppm)	NO	2015	1.12	0.0 – 2.8	10	10	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits
Tetrachloroethylene (ppb)	NO	2015	0.52	0 – 0.52	0	5	Discharge from factories and dry cleaners
Turbidity	NO	2015	0.09	0.009 – 0.9	TT	NA	Soil Runoff
Unregulated Contaminant Monitoring Regulation							
Substance (unit of measure)	Date Collected	Amount Detected	Range Detected	Typical Source			
Chromium (ppb)	2014	0.8	0 – 0.8	Naturally occurring element			
Hexavalent Chromium (ppb)	2014	0.15	0.07 – 0.15	Naturally occurring element			
Strontium (ppb)	2014	69	48 - 69	Naturally occurring element			
Vanadium	2014	0.2	0 – 0.2	Naturally occurring element			

(1) A US EPA has established a lifetime health advisory (HA) value of 300 ppb for manganese to protect against concerns of potential neurological effects, and a one-day and 10-day HA of 1000 ppb for acute exposure.

Important Health Note

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 at 800.426.4791.

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