



Presented By  
Abington/Rockland  
Joint Water Works



ANNUAL  
WATER  
QUALITY  
REPORT

WATER TESTING PERFORMED IN 2015

## Meeting the Challenge

Once again, we are proud to present our annual drinking water report, covering all drinking water testing performed between January 1 and December 31, 2015. Over the years, we have dedicated ourselves to producing drinking water that meets all state and federal standards. We continually strive to adopt new methods for delivering the best quality drinking water to your homes and businesses. As new challenges to drinking water safety emerge, we remain vigilant in meeting the goals of source water protection, water conservation, and community education while continuing to serve the needs of all of our water users.

Please remember that we are always available to assist you, should you ever have any questions or concerns about your water.

## Community Participation

You are invited to participate in our public meetings. This participation will provide you with the opportunity to voice your concerns or become actively involved in decisions affecting your drinking water. Please check the town hall bulletin boards, or contact the office at (781) 878-0901 to determine the time and location of the scheduled meetings.

## Important Health Information

Some people may be more vulnerable to contaminants in drinking water than the general population. Immunocompromised 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 may be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. The U.S. EPA/CDC (Centers for Disease Control and Prevention) guidelines on appropriate means to lessen the risk of infection by *Cryptosporidium* and other microbial contaminants are available from the Safe Drinking Water Hotline at (800) 426-4791 or <http://water.epa.gov/drink/hotline>.



## Substances That Could Be in Water

To ensure that tap water is safe to drink, the Department of Environmental Protection (DEP) and the U.S. Environmental Protection Agency (U.S. EPA) prescribes regulations limiting 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, which must provide the same protection for public health. Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of these contaminants does not necessarily indicate that the water poses a health risk.

The 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. Substances 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, or wildlife;

**Inorganic Contaminants**, such as salts and metals, which can be naturally occurring or may 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 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 which may also come from gas stations, urban stormwater runoff, and septic systems;

**Radioactive Contaminants**, which can be naturally occurring or may be the result of oil and gas production and mining activities.

More information about contaminants and potential health effects can be obtained by calling the U.S. EPA's Safe Drinking Water Hotline at (800) 426-4791.

## The Source Water Assessment and Protection

The Source Water Assessment and Protection program (SWAP) assesses the susceptibility of public water supplies to potential contamination by microbiological pathogens and chemicals. This system was assigned a susceptibility ranking of high using the information collected during the assessment by the Massachusetts Department of Environmental Protection. The SWAP report notes the following key area as possible sources of contamination: residential land uses; transportation corridors; transmission lines; hazardous waste generation; industrial parks (including a large quantity toxic chemical user); agriculture; oil or hazardous material contamination sites; aquatic wildlife; sand and gravel mining; road and maintenance depots; and underground storage tanks located in the water supply protection area for the Great Sandy Bottom Pond, the Hannigan Reservoir, and the Myers Avenue well field. The report commends the water system for taking an active role in implementing source water protection measures. The complete SWAP report is available at the water department or online at [www.state.ma.us/dep/brp/dws](http://www.state.ma.us/dep/brp/dws). For more information contact the water department at (781) 878-0901.



## What's a Cross-connection?

Cross-connections that contaminate drinking water distribution lines are a major 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 the pressure in the equipment or system is greater than the pressure inside the drinking water line (backpressure). Contamination can also occur when the pressure in the drinking water line drops due to fairly routine occurrences (main breaks, heavy water demand) causing contaminants to be sucked out from the equipment and into the drinking water line (backsiphonage).

Outside water taps and garden hoses tend to be the most common sources of cross-connection contamination at home. The garden hose creates a hazard when submerged in a swimming pool or when attached to a chemical sprayer for weed killing. Garden hoses that are left lying on the ground may be contaminated by fertilizers, cesspools, or garden chemicals. Improperly installed valves in your toilet could also be a source of cross-connection contamination.

Community water supplies are continuously jeopardized by cross-connections unless appropriate valves, known as backflow prevention devices, are installed and maintained. We have surveyed industrial, commercial, and institutional facilities in the service area to make sure that all potential cross-connections are identified and eliminated or protected by a backflow preventer. We also inspect and test each backflow preventer to make sure that it is providing maximum protection.

For more information on backflow prevention contact the Safe Drinking Water Hotline at (800) 426-4791.

## Where Does My Water Come From?

The Towns of Abington and Rockland are supplied water from three different sources. The one groundwater source located on Myers Avenue in Abington consists of four gravel-packed wells. The combined effluent from these wells is treated with chlorine for disinfection and filtered through a pressurized filtering system to remove natural elements such as iron and manganese.

The remainder of the supply is from two surface water bodies: the John F. Hannigan Memorial Reservoir located in the northeast corner of Rockland, and the Great Sandy Bottom Pond located in the town of Pembroke. Both of these sources are treated through a conventional filtration process where the raw water is chemically adjusted to allow impurities to bond together. The combined weight causes the elements to settle to the bottom. The remaining particles pass through a sand and gravel filter. The combination of sand and gravel removes the particles from the water as well as aids in controlling the taste of the finished product. Finally, similar to the groundwater process, chlorine is added for disinfection of the water.

These three sources combined are certified to produce 2.67 million gallons of water per day.

To learn more about our watershed on the Internet, go to the U.S. EPA's Surf Your Watershed at [www.epa.gov/surf](http://www.epa.gov/surf).

## QUESTIONS?

For more information about this report, or for any questions relating to your drinking water, please call Daniel F. Callahan, Water Superintendent, at (781) 878-0901.

## Lead in Home Plumbing

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. We are 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 [www.epa.gov/lead](http://www.epa.gov/lead).

## About Our Violations

We exceeded the MCL for Total Trihalomethanes during the 1st and 2nd quarters of 2015 at two locations. We also exceeded the MCL for Haloacetic Acids at one location during the same period. Haloacetic acids and trihalomethanes are by-products produced when the chlorine used as a bacterial disinfectant comes in contact with natural organics in the ground water. The water pumped from the Myers Avenue wells in Abington is ground water that contains these naturally occurring organics. This is and was not an emergency. Some people who drink water containing haloacetic acids in excess of the MCL over many years may have an increased risk of getting cancer. Some people who drink water containing trihalomethanes in excess of the MCL over many years may experience problems with liver, kidneys, or central nervous systems, and may have an increased risk of getting cancer.

We have made changes to our treatment process at the Myers Avenue Water Treatment Plant and since the August 2015 quarterly samples for both Haloacetic acids and Total Trihalomethanes we are no longer experiencing the elevated disinfection by-products.

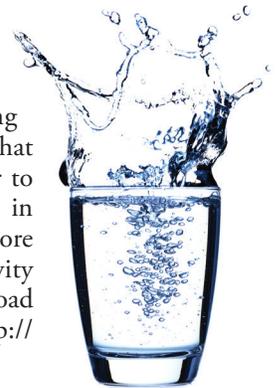
## Failure in Flint

The national news coverage of water conditions in Flint, Michigan, has created a great deal of confusion and consternation over the past year. The water there has been described as being corrosive; images of corroded batteries and warning labels on bottles of acids come to mind. But is corrosive water bad?

Corrosive water can be defined as a condition of water quality that will dissolve metals (iron, lead, copper, etc.) from metallic plumbing at an excessive rate. There are a few contributing factors but, generally speaking, corrosive water has a pH of less than 7; the lower the pH, the more acidic, or corrosive, the water becomes. (By this definition, many natural waterways throughout the country can be described as corrosive.) While all plumbing will be somewhat affected over time by the water it carries, corrosive water will damage plumbing much more rapidly than water with low corrosivity.

By itself, corrosive water is not a health concern; your morning glass of orange juice is considerably more corrosive than the typical lake or river. What is of concern is that exposure in drinking water to elevated levels of the dissolved metals increases adverse health risks. And there lies the problem.

Public water systems are required to maintain their water at optimal conditions to prevent it from reaching corrosive levels. Rest assured that we routinely monitor our water to make sure that what happened in Flint never happens here. For more information on how corrosivity impacts water quality, download this informative pamphlet: <http://goo.gl/KpTmXv>.



## Sampling Results

During the past year, we have taken hundreds of water samples to determine the presence of any radioactive, biological, inorganic, volatile organic, or synthetic organic contaminants. The table below shows only those contaminants that were detected in the water. The state requires us to monitor for certain substances less than once per year because the concentrations of these substances do not change frequently. In these cases, the most recent sample data are included, along with the year in which the sample was taken.

In 2014 we participated in the 3rd stage of the EPA's Unregulated Contaminant Monitoring Rule (UCMR3) program by performing additional tests on our drinking water. UCMR3 benefits the environment and public health by providing the EPA with data on the occurrence of contaminants suspected to be in drinking water, in order to determine if EPA needs to introduce new regulatory standards to improve drinking water quality. Contact us for more information on this program.

### REGULATED SUBSTANCES

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	MCL [MRDL]	MCLG [MRDLG]	AMOUNT DETECTED	RANGE LOW-HIGH	VIOLATION	TYPICAL SOURCE
<b>Barium</b> (ppm)	2015	2	2	0.1	ND–0.1	No	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits
<b>Chlorine</b> (ppm)	2015	[4]	[4]	1.981	0.334–1.981	No	Water additive used to control microbes
<b>Combined Radium</b> (pCi/L)	2012	5	0	0.63	ND–0.63	No	Erosion of natural deposits
<b>Dalapon</b> (ppb)	2011	200	200	1.8	1.4–1.8	No	Runoff from herbicide used on rights of way
<b>Haloacetic Acids [HAA]</b> (ppb) site 10340	2015 (1st qtr)	60	NA	101.8	80.4–129	Yes	By-product of drinking water disinfection
<b>Haloacetic Acids [HAA]</b> (ppb) site 10340	2015 (2nd qtr)	60	NA	83.98	9.1–129	Yes	By-product of drinking water disinfection
<b>Hexachlorocyclopentadiene</b> (ppb)	2011	50	50	0.13	0.13–0.13	No	Discharge from chemical factories
<b>Nitrate</b> (ppm)	2015	10	10	0.19	ND–0.19	No	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits
<b>Perchlorate</b> (ppb)	2015	2	NA	0.13	ND–0.13	No	Inorganic chemicals used as oxidizers in solid propellants for rockets, missiles, fireworks and explosives.
<b>TTHMs [Total Trihalomethanes]</b> (ppb) site 10340	2015 (1st qtr)	80	NA	80.7	52.5–116	Yes	By-product of drinking water disinfection
<b>TTHMs [Total Trihalomethanes]</b> (ppb) site 10356	2015 (1st qtr)	80	NA	95.0	76.6–110	Yes	By-product of drinking water disinfection
<b>TTHMs [Total Trihalomethanes]</b> (ppb) site 10356	2015 (2nd qtr)	80	NA	84.55	41.6–110	Yes	By-product of drinking water disinfection
<b>Total Coliform Bacteria</b> (% positive samples)	2015	5% of monthly samples are positive	0	3.7	NA	No	Naturally present in the environment
<b>Total Organic Carbon</b> (ppm)	2015	TT	NA	4.1	1.0–4.1	No	Naturally present in the environment
<b>Turbidity<sup>1</sup></b> (NTU)	2015	TT	NA	0.20	0.03–0.20	No	Soil runoff
<b>Turbidity</b> (Lowest monthly percent of samples meeting limit)	2015	TT = 95% of samples < 0.3 NTU	NA	100	NA	No	Soil runoff

Tap water samples were collected for lead and copper analyses from sample sites throughout the community

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	AL	MCLG	AMOUNT DETECTED (90TH% TILE)	SITES ABOVE AL/ TOTAL SITES	VIOLATION	TYPICAL SOURCE
<b>Copper</b> (ppm)	2015	1.3	1.3	0.14	0/30	No	Corrosion of household plumbing systems; Erosion of natural deposits
<b>Lead</b> (ppb)	2015	15	0	3	0/30	No	Corrosion of household plumbing systems; Erosion of natural deposits

## SECONDARY SUBSTANCES

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	SMCL	MCLG	AMOUNT DETECTED	RANGE LOW-HIGH	EXCEEDANCE	TYPICAL SOURCE
Aluminum (ppb)	2015	200	NA	10	10–10	No	Erosion of natural deposits; Residual from some surface water treatment processes
Copper (ppm)	2015	1.0	NA	0.07	ND–0.07	No	Corrosion of household plumbing systems; Erosion of natural deposits
Iron (ppb)	2014	300	NA	20	ND–20	No	Leaching from natural deposits; Industrial wastes
Manganese (ppb)	2014	50	NA	7	ND–7	No	Leaching from natural deposits
Odor (TON)	2015	3	NA	10	4–10	Yes <sup>2</sup>	Naturally occurring organic materials
pH (Units)	2015	6.5-8.5	NA	7.8	7.2–7.8	No	Naturally occurring
Sulfate (ppm)	2015	250	NA	50	31.8–50	No	Runoff/leaching from natural deposits; Industrial wastes
Total Dissolved Solids [TDS] (ppm)	2015	500	NA	400	240–400	No	Runoff/leaching from natural deposits
Zinc (ppm)	2015	5	NA	0.006	ND–0.006	No	Runoff/leaching from natural deposits; Industrial wastes

## UNREGULATED SUBSTANCES <sup>3</sup>

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	AMOUNT DETECTED	RANGE LOW-HIGH	TYPICAL SOURCE
1,1-Dichloroethane (ppb)	2014	0.1	ND–0.1	NA
Bromodichloromethane (ppb)	2015	13	2.2–13	By-product of drinking water disinfection
Bromoform (ppb)	2014	0.7	ND–0.7	By-product of drinking water disinfection
Chlorodibromomethane (ppb)	2015	5.7	1.5–5.7	By-Product of drinking water disinfection
Chloroform (ppb)	2015	20.1	2.7–20.1	By-product of drinking water disinfection
Chloromethane (ppb)	2014	1.1	ND–1.1	NA
Sodium (ppm)	2015	117	52.2–117	Naturally present in the environment; Runoff from road salt; By-product of drinking water treatment process

## UNREGULATED CONTAMINANT MONITORING RULE PART 3 (UCMR3)

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	AMOUNT DETECTED	RANGE LOW-HIGH
Chlorate (ppb)	2014	130	ND–130
Chromium [Total] (ppb)	2014	1.7	ND–1.7
Chromium-6 (ppb)	2014	1.6	0.12–1.6
Strontium (ppb)	2014	160	96–160
Vanadium (ppb)	2014	1.6	ND–1.6

<sup>1</sup> Turbidity is a measure of the cloudiness of the water. It is monitored because it is a good indicator of the effectiveness of the filtration system.

<sup>2</sup> Secondary contaminants are regulated to protect the aesthetics of drinking water like taste, appearance, and odor. According to the U.S. EPA, there are no known adverse health effects associated with the exceedance of this Secondary MCLs.

<sup>3</sup> Unregulated contaminants are those for which the U.S. EPA has not established drinking water standards. The purpose of unregulated contaminant monitoring is to assist U.S. EPA in determining their occurrence in drinking water and whether future regulation is warranted.

## Definitions

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

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

**LRAA (Locational Running Annual Average):** The average of sample analytical results for samples taken at a particular monitoring location during the previous four calendar quarters. Amount Detected values for TTHMs and HAAs are reported as LRAAs.

**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 contaminants.

**NA:** Not applicable

**ND (Not detected):** Indicates that the substance was not found by laboratory analysis.

**NTU (Nephelometric Turbidity Units):** Measurement of the clarity, or turbidity, of water. Turbidity in excess of 5 NTU is just noticeable to the average person.

**pCi/L (picocuries per liter):** A measure of radioactivity.

**ppb (parts per billion):** One part substance per billion parts water (or micrograms per liter).

**ppm (parts per million):** One part substance per million parts water (or milligrams per liter).

**TON (Threshold Odor Number):** A measure of odor in water.

**SMCL (Secondary Maximum Contaminant Level):** SMCLs are established to regulate the aesthetics of drinking water like taste and odor.

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