

**ANNUAL DRINKING WATER QUALITY REPORT  
THE BROOKFIELD WATER DEPARTMENT  
6 Central St.**

**As required by the Safe Drinking Water Act Calendar Year 2018  
Public Water Supply #2045000**

**Contact Person: Dennis Clarke, Water Superintendent  
Phone # (508) 867-5722 Ext 17**

*May 2019*

The Annual Water Quality Report provides information about the water supplied to our customers in calendar year 2018. This report is to inform you about the services we deliver to you every day. Our constant and continuous goal is to provide you with a safe quality drinking water. We want you to understand the commitment involved to continually maintain water quality and protect our water resources.

**Water Commissioners**

Donald Taft                      **Chairman**  
Al Jones                         **Member**  
Robert Barnes                 **Member**

**Staff**

Dennis Clarke                 **Superintendent**  
Holly Chisholm               **Administrative Clerk**

Monthly meetings are held on the second Wednesday of the month at 11:00 a.m. in the Brookfield Town Hall unless posted otherwise. Your input and participation is always welcome and valued.

**Source of Water** Brookfield's water comes entirely from groundwater sources. The Water Department has four wells located off Quaboag Street, in East Brookfield. Brookfield's source protection is provided through zoning with a bylaw entitled Wellhead Protection Overlay District and by the Town of East Brookfield in the form of Ground Water Protection District Zoning.

**We Operate Four Wells/Quaboag Street Wells**

- #0 -4G and #0-5G produce 70 gallons per minute*
- #0-3G produces 150 gallons per minute*
- #0-2G produces 300 gallons per minute*

Our water system is interconnected to the West Brookfield water system for an emergency backup source.

**Water Storage**

We maintain a 500,000-gallon storage facility on Draper Street. This provides ample supply for fire protection and approximately four days of drinking water.

**Water Treatment**

We operate a MassDEP approved iron and manganese treatment facility. This facility reduces iron and manganese in water by injecting oxygen-enriched water in well #0-2G. Iron and manganese are both considered secondary contaminants, which means their effects are aesthetic (taste, color, and odor) rather than health-based. Manganese carries a health advisory at levels 0.3 ppm or greater. Potassium hydroxide is used to adjust the acidity (pH) of the water for corrosion control. This minimizes the leaching of lead and copper from water pipes, joints, and fixtures into the water. Sodium Hypochlorite (chlorine) is used as a disinfectant, reducing the risk for harmful organisms in the water.

**Water Department Information**

If you have any questions about this report or concerning your water utility, please contact the Water Department Office in the Town Hall. Office hours are Monday and Wednesday. 10:00 a.m. - 2:00 p.m. or call and leave a message. Your call will be returned. The contact person is Dennis Clarke, Superintendent, at (508) 867-5722 ext. 17.

**Definitions**

**These definitions will give you a better understanding of the data provided in the water testing results.**

**MCL** = Maximum Contamination Level. The highest level of contaminant allowed in drinking water.

**MCLs** are set as close to the MCLGs as feasible using the best available treatment technology.

**MCLG** = Maximum Contamination 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.

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

**PPM** = Parts Per Million, or Milligrams per liter (mg/l)

**PPB** = Parts Per Billion, or Micrograms per liter (ug/l)

**pCi/l:** = Picocuries Per Liter ( a measure of radiation)

**Unregulated Contaminants** = Unregulated contaminants are those for which EPA has not established drinking water standards. The purpose of unregulated contaminate monitoring is to assist EPA in determining their occurrence in drinking water and whether future regulation is warranted.

**ORSG** = Massachusetts Office of Research and Standards Guideline. 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.

**SMCL** = Secondary Maximum Contaminant Level. These standards are developed to protect the aesthetic qualities of drinking water and are not health base

**Water Quality Data**

Your water department follows a MassDEP sampling schedule that includes monthly testing for bacteria and scheduled testing for other substances. The tables below show the results of our monitoring for the period of January 1 - December 31, 2018, unless otherwise noted. Only detected substances have been listed. Many other tests are performed.

**Educational Statement for 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 Brookfield 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>.”

**Lead and Copper**

We test for lead and copper on a three-year schedule. The results reported are from our most recent testing. Tests are performed on selected homes due to the use of lead in solder at the time of plumbing installation.

**Lead and Copper Compliance** is based on the 90<sup>th</sup> percentile value, which is the highest level found in 9 out of 10 homes sampled. Nine out of ten homes sampled where below this level.

Lead and Copper	Collected Date	Percentile* 90th	Level (AL) Action	MCLG	sampld # of sites	above AL #of sites	AL Exceeds Violation (Y/N)
Lead (ppb)	9/12/2017	.001ppm	.015ppm	0	10	0	N Corrosion of household plumbing
Copper (ppm)	9/12/2017	.12ppm	1.3ppm	1.3	10	0	N Corrosion of household plumbing
-							

Unregulated and Secondary Contaminants	Date Collected	Results	SMCL	ORSG	Possible Sources
Iron (ppm)	5/9/18	.56	.30	--	Erosion of natural deposits
Nickel (ppm)	5/10/11	1	--	100	Natural sources
Sodium (ppm)	4/14/17	7.34	--	20	Natural sources; run off from road salt
Manganese (ppm)	5/9/18	.114	.05	0.3	Erosion of natural deposits

Radioactive Contaminants	Date Collected	Highest Amount Detected	Average Detected	MCL	MCLG	Sources in Drinking Water
Radium 226	5/8/2012	.0900	--	5 pCi/l	0	Erosion of natural deposits
Radium 228	5/8/2012	.990	--	5 pCi/l	0	Erosion of natural deposits

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

Manganese - The 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.

#### **Waivers**

The MassDEP has reduced the Brookfield Water Department's monitoring requirements for inorganic compounds, volatile organic contaminants, and arsenic due to the location of the wells and prior sample results. These samples were found to meet all applicable EPA and DEP standards.

#### **SOURCE WATER ASSESSMENT PROGRAM (S.W.A.P.)**

The MassDEP has reviewed the area that could affect the quality of our water. This area known as zone II is protected by a Brookfield bylaw titled, "Wellhead Protection Overlay District" and protected by East Brookfield bylaws. The S.W.A.P. report noted that Brookfield is at high threat for possible contamination because our wells are close to a river. This river passes close to roads and the railroad, which in the event of a spill could carry contaminants. We are working very closely with our emergency services to provide protection in the occurrence of a spill. This report is available at the Brookfield Water Department by request.

#### **SOURCE WATER PROTECTION COMMITTEE**

The Town of Brookfield has adopted a committee to review source water protection strategies. This committee has developed a protection plan to guide the town towards keeping our water supply safe.

#### **Substances Found In Tap Water**

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 1-800-426-4791.

#### **Educational Information**

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).

### **TESTING FOR CONTAMINANTS**

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. Pesticides and herbicides, which may come from a variety of sources such as agriculture, urban stormwater runoff, and residential uses. 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. Organic chemical contaminants, including synthetic and volatile organic chemicals, which are by-products of industrial processes and petroleum production, and can, 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.

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 materials, and can pick up substances resulting from the presence of animals or from human activity.

In order to ensure that tap water is safe to drink, the Mass DEP and EPA prescribe regulations that limit the amount of certain contaminants in water provided by public water systems. The Food and Drug Administration (FDA) and the Massachusetts Department of Public Health (DPH) regulations establish limits for contaminants in bottled water that must provide the same protection for public health.

### **Compliance**

The Brookfield Water Department was issued a Notice of Noncompliance from the MassDEP on November 11, 2018 for record keeping with the following conditions.

1. "Begin testing all alarms and interlocks on the critical chemicals according to their written testing protocol at a minimum of once per quarter."
2. "Logs are to be kept recording all test results of alarms and interlocks."
3. "Develop a written testing plan to ensure that all flow and electrical interlocks and alarm related shutdowns are functional."
4. "A log is to be kept recording calibration of the in-line pH analyzer."

### **Cross Connection Control**

The Brookfield 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. Swimming pools must have a backflow prevention device in place. This is a great way for you to protect the water in your home as well and the water drinking system in town. For additional information, please refer to water department rules and regulations.

### **Contacts**

*For questions regarding this report or if you would like a copy, please contact Superintendent Dennis Clarke @ 508-867-5722 Ext. 17. We strive to provide you with top quality water.*

*Protect our water sources. Report any suspicious activity that may affect our water supply to the Brookfield Police Department at (508) 867-5570 or (911) emergency only.*