



On Tap



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2016 Annual Water Quality Report

As part of the requirements of the Safe Water Drinking Act the Grafton Water District (District) is pleased to submit its annual water quality report. This report will detail the requirements for reporting set by the Federal Environmental Protection Agency. This report highlights testing that was required in the year 2016 and any contaminants that may have been detected during testing. This report will not show testing results that were undetected.

The District is committed to providing our customers with high quality drinking water that meets or surpasses state and federal standards for quality and safety. To ensure delivery of a quality product, we have in the last twenty-six years made significant changes to our pumping, distribution system and operations.

Where the Districts' Water Comes From

The District obtains its water from four gravel packed ground water wells. These wells are located at the following locations: 100 Worcester Street, 211000-02G; 28 East Street which has two wells, East Street #2A and East Street #3, 211000-06G, 211000-04G; and Follette Street on Town owned property leased by the District, 211000-05G.

As part of the distribution system the District maintains over 72.00 miles of water mains, two booster stations, three storage tanks, hydrants, gate valves and services. The water system is maintained and operated by four licensed operators 24 hours a day 365 days a year. The system is also connected to South Grafton, Millbury, Shrewsbury, Upton, Northbridge, Worcester, and the Wilkinsonville Water District. These interconnections provide water to our system in the event of an emergency.

Want to know more about the District's water system? Please call Matthew Pearson at 508-839-2302 during the hours of 8 a.m. and 4 p.m., Monday through Friday, with any questions or concerns. We are located at 44 Millbury Street, Grafton, MA 01519. The Districts' Board of Water Commissioners typically meets on the second Tuesday of each month. Special meetings will be posted separately.

Information on sources of drinking water, contaminants that may be present in source water, and EPA/FDA regulations

"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".

"In order to ensure that tap water is safe to drink. The DEP and EPA prescribe regulations that limit the amount of contaminants in water provided by public water systems. Food and Drug Administration (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."

Explanation of the vulnerability of some populations to contaminants in drinking water: "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/Centers for Disease Control and Prevention (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)."

Water Quality Data

The table below lists all the drinking water contaminants that we detected during the 2016 calendar year. The presence of these contaminants in the water does not necessarily indicate that the water poses a health risk. Unless otherwise noted the data presented in this table is from testing done January 1 – December 31, 2016. The State requires us to monitor for certain contaminants less than once per year because the concentrations of these contaminants are not expected to vary significantly from year to year or have never been detected.

TERMS AND ABBREVIATIONS USED BELOW:

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 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.

Action Level (AL)

The concentration of a contaminant which, when exceeded, triggers treatment or other requirements which a water system must follow.

Sodium

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

Unregulated Contaminants

Unregulated contaminants are substances without MCLs for which EPA requires monitoring. For some of these substances, the Massachusetts Office of Research and Standards (ORSG) has developed state guidelines or secondary MCLs.

ORSG 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 based.

LEAD

Infants and young children are typically more vulnerable to lead in drinking water than the general population. It is possible that lead levels at your home may be higher than at other homes in the community as a result of materials used in your home's plumbing. If you are concerned about elevated lead levels in your home's water, you may wish to have your water tested. Flush your tap for 30 seconds to 2 minutes before using tap water to reduce lead content. Additional information is available from the Safe Drinking Water Hotline, 800-426-4791.

pci/L - Picocuries per liter: A measure of radioactivity in water.

***ppb**: parts per billion or micrograms per liter

***ppm**: parts per million or milligrams per liter

mtbe: Methyl Tertiary Butyl Ether

Contaminants that may be present in water

Microbial Contaminants, such as viruses and bacteria, that may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife.

Pesticides and Herbicides, that may come from a variety of sources such as agriculture, urban storm water runoff, and residential uses.

Inorganic Contaminants, such as salts and metals, that can be naturally-occurring or result from urban storm water runoff, industrial, or domestic wastewater discharges, oil and gas production, mining, or farming.

Organic Chemical Contaminants, including synthetic, volatile organic chemicals, that are by-products of industrial processes and petroleum production, and can also come from gas stations, urban stormwater runoff, and septic systems.

Radioactive Contaminants, that can be naturally-occurring or be the result of oil and gas production and mining activities.

Volatile Organic Compounds, (VOC's) are a group of chemicals that are usually associated with man-made products such as gasoline, heating oil, degreasers, cleaners, solvents and the like. VOC's in a water supply can result from fuel spills, leaking underground tanks, industrial discharges, illegal dumping and run-off from industrial areas or heavily traveled roads. Ingesting water containing VOC's in excess of the MCL may increase the risk of getting certain cancers, liver damage or neurological problems. Health effects vary depending on the specific contaminant, its concentration, and the duration of exposure.

2016 CCR Tables for the Grafton Water District

The water quality information presented in the tables below is from the most recent round of testing done in accordance with the drinking water regulations. The most recent monitoring of finished water for nitrite, volatile organic compounds, and synthetic organic compounds did not detect any regulated contaminants.

Lead and Copper	Date Collected	90th Percentile	Action Level	MCLG	# of sites sampled	# of sites above AL	Exceeds A-? (Y/N)
Lead (ppb)	2015	.42	15	0	35	0	N
Possible sources: Corrosion of household plumbing systems; erosion of natural deposits							
Copper (ppm)	2015	.84	1.3	1.3	35	0	N
Possible sources: Corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives							

*Lead and copper compliance is based on the 90th percentile value, which is the highest level found in 9 out of every 10 homes sampled or the average of the 2 highest levels if fewer than 10 homes are sampled. When the 90th percentile value is above the action level (AL), a public water system must implement corrosion control treatment.

Inorganic Contaminants	Date Collected	Highest Level Detected	Range	MCL	MCLG	Violation Y/N	Possible Sources
Asbestos	2011	0	0	7	7	N	Erosion of natural deposits decay from asbestos pipes
Nitrate (ppm)	2016	1.8	0 - 1.8	10	10	N	Runoff from fertilizer use; leaching from septic tanks; erosion of natural deposit
Sulfate	2012	13.8	0 - 13.8	-	-	N	Natural sources
Sodium	2015	100	26 - 100	20	20	N	Natural sources, road salt
Barium	4/14/15	.028	.028	2	2	N	Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits
Arsenic	4/14/15	.0062	.0062	.010	.010	N	Natural sources
Disinfection Contaminants							
Haloacetic (HAA5s) (ppb)	2016	21	1.2 - 21	60	-	N	Byproduct of drinking water chlorination
Total Trihalomethanes (TTHMs) (ppb)	2016	63	27 - 63	80	-	N	Byproduct of drinking water chlorination
Radioactive Contaminants							
Gross Alpha Activity	2015	4.71 pCi/L	N/A	15 pCi/L	0 pCi/L	N	Erosion of natural deposits
Radium 226 & 228	2015	.45 pCi/L	N/A	5 pCi/L	0 pCi/L	N	Erosion of natural deposits

Unregulated Contaminants	Date Collected	Amount Detected or Range	SMCL	ORSG	Possible Source
Chloroform (ppb)	2016	0 - 2.7	--	--	By-product of drinking water chlorination
Bromodichloromethane	2016	0 - 3.7	--	--	By-product of drinking water chlorination
Bromoform	2016	0 - 3.4	--	--	By-product of drinking water chlorination
Chloro Dibromochloromethane	2016	0 - 2.6	--	--	By-product of drinking water chlorination

Substance (units)	Collected	Range of Detects	SMCL	ORSG	Typical Source
1,4-dioxane (ppb)	2016	.75 - 1.1	--	--	Chemical solvent, lab reagent, stabilizer, adhesive, may be found in cosmetics, detergents, and shampoo.
Chlorate (ppb)	2015	29	--	--	By-product of drinking water disinfection
Chromium (ppb)	2015	.3	--	--	Erosion of natural deposits
Chromium-6 (ppb)	2015	.32	--	--	Erosion of natural deposits. By-product of industrial activities
Strontium (ppb)	2015	210	--	--	Erosion of natural deposits

The Grafton Water District tests for VOC's as required by the Department of Environmental Protection. Specifically our Follette Street well is tested monthly due to the presence of VOC's in the ground water. A raw (pre-treatment) and treated (after-treatment) sample of the water is tested to determine the effectiveness of the new water treatment facility.

The Department of Environmental Protection completed an assessment of Grafton's water sources, under the **Source Water Assessment and Protection Program (SWAP)** and determined that Grafton's threat level was high, based on the presence of at least one high-threat land use in our Zone II area of one of our water supply wells. You can obtain a copy of the SWAP report at the Water District office or on the web at www.state.ma.us/dep/brp/dw

The East Street Wells #2 and #3 are treated to remove iron and manganese that is naturally occurring in the ground water. Although iron and manganese are not necessarily a health issue they do cause significant staining and color problems in plumbing fixtures and the water.

Chemical	Secondary MCL	Source To Drinking Water
Iron (ppm)	1.9	Naturally occurring, corrosion of cast iron pipes

Chemical	Secondary MCL	Source To Drinking Water
Manganese (ppm)	1.8	Erosion of natural deposits

PERCHLORATE: The District was required to test for Perchlorate in all our wells during 2016. A test was taken in each well and the results showed that there was a defect of .87 J Ug/L. Perchlorate could be present in the water as a result of blasting, fireworks or rocket propellant.

CROSS CONNECTION EDUCATION:

A cross connection is a connection between a drinking water pipe and a polluted source. When the water system has a pressure drop, usually due to a leak in the system, water can sometimes siphon back into the system. An example is when a homeowner fertilizes their lawns with garden hose type attachments. These devices provide an avenue for the pollutant to siphon backwards into the home or the water system. The District recommends that you install a backflow prevention device such as a hose bib vacuum breaker on all outside faucets. They can be obtained at your local plumbing or hardware store and are easy to attach. This is a great way for you to protect your home as well as the water system. For additional information please feel free to call the Water District at 508-839-2302.

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If you wish to file a Civil Rights program complaint of discrimination, complete the USDA Program Discrimination Complaint Form, found online at http://www.ascr.usda.gov/complaint_filing_cut.html, or at any USDA office, or call (866) 632-9992 to request the form. You may also write a letter containing all of the information requested in the form. Send your completed complaint form or letter to us by mail at U.S. Department of Agriculture, Director, Office of Adjudication, 1400 Independence Avenue, S.W., Washington, D.C. 20250-9410, by fax (202) 690-7442 or email at program.intake@usda.gov."

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