Georgetown Water Department
1 Moulton Street
Georgetown, MA 01833

2018 Annual Water Quality Report

(Representing calendar year 2017)

Town of Georgetown, MA - PWS ID 3105000

Small Water Systems Services, L.L.C. (SWSS) is pleased to present this year's Annual Water Quality Report for the Town of Georgetown, MA. This report is a complete summary of all the water quality testing done in the preceding calendar year (2017), along with any DEP Compliance issues that occurred within that year. This report is a requirement of all water systems and is updated and distributed annually. Please review this report and save it as a reference.

Mission Statement:

The Georgetown Water Department (GWD) strives to operate and maintain the municipal water system cost-effectively and conservatively; while providing a safe, clean, and abundant water supply to residents and businesses for their daily needs and fire protection. Rates are established and reviewed regularly to ensure that anticipated operating costs, emergency system repairs, and necessary capital improvements can be funded with a fiscally-responsible approach.

Where Your Drinking Water Comes From:

GWD utilizes three groundwater wells to supply water to the town. These wells include the William Marshall Well and the Ronald I. Marshall (Duffy's Landing) Well, both located off West Street behind the Water Treatment Plant (WTP), and the Commissioners Well, located off lower Bailey Lane near the bridge/culvert. GWD wells are shallow (40 to 60 feet deep), gravel pack wells that draw water from the Parker River aquifer. The water from all three wells is pH adjusted, filtered for iron and manganese removal, chlorinated for disinfection (bacteria and virus inactivation), and pumped into the distribution system. Water storage in the system is handled by three water storage tanks, located off Baldpate Road, to maintain a constant supply. In October 2013, GWD shut the elevated tank (next to the golf course) to promote greater use of the tanks on Baldpate Hill- thereby reducing the water age in the tanks and improving water quality in the distribution system. Internal mixers, installed in 2014, also help to reduce stagnation in the tanks.

Water Treatment Process:

GWD utilizes a pressure filtration process at the WTP to remove iron and manganese. This process is enhanced by raising the pH level of the source water at each of our three wells using Potassium Hydroxide feed systems. The three wells are piped together before they enter the WTP. Two oxidants, Sodium Hypochlorite and Potassium Permanganate, are added to promote iron and manganese precipitation so their particulate form can be captured through pressure filtration. The finished water is chlorinated a second time, for disinfection, and pH adjusted for pipe corrosion control prior to entering the distribution system. The elevated pH helps to control corrosion not only in the ductile iron and cast-iron water mains, but also in the copper water lines and plumbing systems in your homes. Pressure filters are back-washed every 1-2 days to restore their filtering capacity. Filtered particulate iron and manganese are discharged in concentrated water to the watering lagoons/drying beds. Following final onsite processing, fully-dried residuals are properly disposed of in accordance with DEP regulations.

Water Quality Testing Requirements:

To protect public health, DEP and the U.S. Environmental Protection Agency (EPA) require GWD to continually perform water quality testing. Continuous testing is performed on the WTP finished water for pH, chlorine residual, and turbidity. Monthly testing is performed at the wells, the WTP, and throughout the distribution system on a regular basis. If GWD exceeds any safe drinking water standards, the public would be notified, and steps would be taken to eliminate the problem by treating or removing the affected supply from service.

Refer to the GWD website for a complete list of MassDEP testing requirements and laboratory testing results.

Go to: www.georgetownma.gov; then “Departments”; then “Water Department”; then “Water Quality Links & Reports”.

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.

In order to ensure that tap water is safe to drink, EPA prescribes regulations that limit the amount of certain contaminants in water provided by public water systems. FDA 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).

2017 WATER QUALITY TESTING RESULTS

The water quality information presented in the tables below represents the data gathered from Georgetown water samples, collected in 2017.

MassDEP has reduced the monitoring requirements for inorganic contaminants and arsenic because the source is not at risk of contamination. The last sample collected for these contaminants was found to meet all applicable US EPA and MassDEP standards.

Lead and Copper	Date Collected	90th Percentile	Action Level (AL)	MCLG	# of sites sampled	# of sites above AL	Exceeds AL? (Y/N)
Lead (ppb)	9/20/17	5	15	0	20	0	Corrosion of household plumbing systems; Erosion of natural deposits
Possible sources: Corrosion of household plumbing systems; erosion of natural deposits. Lead & copper compliance is based on the 90th percentile value, which is the highest level found in 9 out of 10 sites, or the average of the 2 highest values if less than 10 sites are sampled.							
Copper (ppm)	9/20/17	0.59	1.3	1.3	20	0	Corrosion of household plumbing systems; Erosion of natural deposits; Leaching from wood preservatives
Possible sources: Corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives							

Lead Educational Statement:

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 Town of Georgetown 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.

Bacteria	MCL / TT	MCLG	Value	Date	Violation (Y/N)	Possible Sources
Total Coliform Bacteria	0	0	Absent (after treatment)	Monthly	N	Human and animal fecal waste

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. This is monitored monthly per DEP.

Regulated Inorganic Contaminant	Date(s) Collected	Detection or Average	MCL	MCLG	Violation (Y/N)	Possible Source(s) of Contamination
Nitrate, ppm	4/18//17	0.14	N/A	10	10	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion from natural deposits.
Nitrite, ppm	4/18//17	ND	N/A	10	10	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion from natural deposits.
Perchlorate, ppb	7/12/17	ND	N/A	2.0	N	Rocket propellants, fireworks, munitions, flares, blasting agents
Total Trihalomethanes (TTHM), ppb	8/10 & 11/7	79.4	80	0	N	By-product of drinking water chlorination
Haloacetic Acids (HAA5), ppb	8/10 & 11/7	42.6	60	0	N	By-product of drinking water chlorination

Unregulated and Secondary Contaminants	Date(s) Collected	Results Detected	Range	SMCL	ORSG or Health Advisory	Possible Source
Chloride (ppm)	11/28/17	41.6	--	250	250	Runoff and leaching from natural deposits; seawater influence
Iron, ppb	11/28/17	27	--	300	N/A	Naturally occurring corrosion of cast iron pipes
Manganese, ppb	11/28/17	5	--	50	Health Advisory of 300	Natural sources as well as discharges from industrial uses
pH	Daily	7.0 average	6.1-7.6	6.5-8.5	N/A	Runoff and leaching from natural deposits; seawater influence
Sulfate, ppm	11/28/17	24.9	--	250	N/A	Natural sources
Total Dissolved Solids (TDS) (ppm)	11/28/17	246	--	500	N/A	Natural sources; runoff from use as salt on roadways; by-product of treatment process
Zinc	11/28/17	0.005	--	5	N/A	Erosion of natural deposits, leaching from plumbing materials

Important Definitions

Action Level (AL): The concentration of a contaminant that, if exceeded, triggers treatment or other requirements, which a water system must follow.
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.
Maximum Residual Disinfectant Level Goal (MRDLG): 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.
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.
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.
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.
Action Level: The concentration of a contaminant, which, if exceeded, triggers treatment or other requirements that a water system must follow.
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.
pCi/l: Picocuries per liter, a measure of radioactivity.
ppm: Parts Per Million, or milligrams per liter (mg/l); ppb: Parts Per Billion, or micrograms per liter (µg/l).
Secondary Maximum Contaminant Level (SMCL): These standards are developed to protect the aesthetic qualities of drinking water and are not health based.

Cross-Connection Control and Backflow Prevention

What can you do for cross-connection prevention? Even though your water operators work very hard to protect the quality of the water delivered to your home, what happens when the water reaches your home? Is there still a need to protect the water quality from contamination caused by a cross-connection and, if so, how?

What is a cross-connection? A cross-connection is any actual or potential connection between the drinking water lines and potential sources of pollution or contamination, such as a piping arrangement or equipment that allows the drinking water to come in contact with non-potable liquids, solids or gases hazardous to humans in event of a backflow event.

What is backflow? Backflow is the undesired reverse of the water flow in the drinking water distribution lines. This backward flow of the water can occur when the pressure created by equipment, such as a boiler or air-conditioning system, is higher than the water pressure inside the water distribution line **(back pressure)**, or when the pressure in the distribution line drops due to routine occurrences such as water main breaks or heavy water demand, causing the water to flow backward inside the water distribution system **(back siphonage)**. Backflow is a problem that many water consumers are unaware of, a problem that each and every water customer has a responsibility to help prevent.

What can I do to help prevent a cross-connection?
Without the proper protection, something as simple as a garden hose has the potential to contaminate or pollute the drinking water lines in your house. In fact more than half the country's cross-connection incidents involve unprotected garden hoses. There are very simple steps that you, as a drinking water user, can take to prevent such hazards, including:

- NEVER submerge a hose in soapy water buckets, pet watering containers, pools, tubs, sinks, drains or chemicals.
- NEVER attach a hose to a garden sprayer without the proper backflow preventers.
- Buy and install a hose bibb vacuum breaker in any threaded water fixture. The installation can be as easy as attaching a garden hose to a spigot. This inexpensive device is available at most hardware stores and home-improvement centers.
- Identify and be aware of potential cross-connections to your water line.
- Buy appliances equipped with backflow prevention devices.
- Buy and install backflow preventers or assemblies for all high and moderate hazard connections.

Source Water Assessment Program (SWAP):

Where Can I See The SWAP Report?
You can obtain a copy of the complete draft SWAP report from online at. https://www.mass.gov/files/documents/2016/08/uf/3105000.pdf

Residents can help protect water sources by:

- Not throwing hazardous materials into toilets or sinks.
- Pumping out your septic system on a regular basis (annually).
- Supporting water supply protection initiatives at the next selectmen's meeting
- Taking hazardous household chemicals to hazardous materials collection days
- Limiting pesticide and fertilizer use.

Sources of additional information:

- Contact EPA's Safe Drinking Water Hotline for more information about contaminants and potential health effects: 1-800-426-4791.
- EPA/CDC Safe Drinking Water Hotline: 1-800-893-4791; Mass Drinking Water Education Partnership: website: www.madwep.org
- For any other questions about your water supply, or for a copy of this report, please call Bruce Trumbull, at 978-352-5750.