

WATER QUALITY REPORT FOR 2012

PLEASE READ IMPORTANT INFORMATION FOLLOWS

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**2011 BOARD OF WATER COMMISSIONERS
Reidar Bomengen, Chairman
James Viera, & Nick Lawler**

**New Commissioner Scott Edwards replaced
6-year Commissioner Reidar Bomengen in May of 2013**

**FOR MORE INFORMATION PLEASE CALL
THE WATER DEPARTMENT
(978) 352 – 5750**

E-mail – gsmith@georgetownma.gov

Web Site: georgetownma.gov

Town Departments

Water Department

**Office Hours – Monday through Friday
8:30 to Noon & 12:30 to 4:00**

**For Emergencies after hours Call
Police Communications
(978) 352 – 5700**

The Georgetown Water Department believes that the best way to assure safe and reliable drinking water is to provide you with accurate facts. This Consumer Confidence Report will provide you with information about your water and things that you can do to save water and money. It also has information about the system and how we monitor the water to ensure the quality as it reaches you.

Where does my water come from?

Three wells supply all of Georgetown's water customers: the William Marshall Well, the Ronald I. Marshall (Duffy's Landing) Well and the Commissioners Well. They are all shallow (40 to 60 feet deep) gravel packed wells that draw from the Parker River aquifer. The water from all three wells is pH adjusted then pumped through the treatment plant to reduce the iron and manganese and chlorinate the water before it enters the system. Water that is not used as it is pumped into the distribution system fills the three water storage tanks on Baldpate Rd. to maintain a constant supply.

Is my drinking water safe?

YES! To protect your health, both the U.S. Environmental Protection Agency (EPA) and the Massachusetts Department of Environmental Protection (DEP) require us to continually perform water quality testing. We test for pH, chlorine residual and turbidity continuously and iron & manganese daily as the water leaves the treatment plant. We test all three wells, the water leaving the treatment plant and eight other points in the distribution system for the presence of coliform bacteria, pH and chlorine monthly. Lead and copper are tested at the three schools, plus twenty homes throughout the distribution system annually. We sample the wells periodically for sixty volatile organic compounds (pesticides, industrial solvents, and fuel components), fourteen inorganic compounds (including sodium, arsenic, mercury and cyanide) and synthetic organic compounds. Every three years the wells are tested for nitrite. Should we detect any of these compounds above safe drinking water standards, the public would be notified and steps taken to eliminate the problem by treating or removing the affected supply from service. The wells and the distribution system are tested for twenty secondary compounds (including heavy metals, sodium and nitrate) at least annually. The distribution system is sampled for trihalomethanes and haloacetic acids (byproducts of chlorination) annually.

The Georgetown Water Department is committed to providing its customers with excellent quality drinking water. We recently made some changes to the treatment process to improve water quality. We added pH control for Marshall and Duffy's wells starting in January of 2012.

Sources of drinking water (both tap 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 from the presence of animals or human activity. Contaminants that may be present in source water include:

Microbial Contaminants – such as viruses and bacteria, which may come from sewage treatment systems, agricultural livestock or wildlife.

Inorganic Contaminants – such as salts and metals, which can occur naturally or as a result of storm water runoff, industrial or domestic discharges, oil and gas production, mining and farming or in the case of Sodium, from the water treatment process.

Pesticides and herbicides – which may come from a variety of sources such as agriculture, storm runoff or residential use.

Organic Chemicals – including synthetic and volatile organic chemicals that are by-products of industry and petroleum production. These can also come from gas station and roadway runoff or wastewater treatment systems.

Radioactive contaminants – which can occur naturally or be the result of petroleum production or mining operations.

To ensure that tap water is safe to drink, the Department of Environmental Protection (MassDEP) and U.S. Environmental Protection Agency (EPA) set regulations for the amount of certain contaminants allowed in public water supply. The Food and Drug Administration (FDA) and the Massachusetts Department of Public Health (DPH) set limits on contaminants in bottled water to provide the same public health protection for the consumer. All drinking water, including bottled water, may reasonably be expected to contain small amounts of some contaminants. This does not necessarily mean that the water poses a health risk.

Some people may be more vulnerable to drinking water contaminants than the general public, such as those with compromised immune systems or HIV/AIDS, or those undergoing chemotherapy or organ transplantation. If you or a family member falls into this category, please seek advice from your doctor and contact the Water Department to be entered onto a list of Special Customers. More information about contaminants or waterborne pathogens and their potential health effects can be obtained by calling the EPA Safe Drinking Water Hotline (800) 426-4791 or the Centers for Disease Control on-line @ www.cdc.gov

What is being done to remove color and odor from water?

For years Georgetown has had aesthetic problems with water staining and odors in various areas of town. The staining seems to have been spread throughout the system, while odors are more prevalent in the north and east sides of town, but not always. The Water Department worked with engineers on a pH adjustment project for Marshall and Duffy's Landing wells, on West Street. This pH adjustment project allows the Water Department to raise the pH of the water from these wells before the treatment plant to improve iron & manganese removal and extend the life of the water treatment vessels and the water filtration media. In the distribution system, the elevated pH also helps to control corrosion of the copper water services and plumbing systems in your homes. This system went on line at the end of January 2012. Prior to this the pH was raised only at the Commissioners Well on lower Bailey Lane and blended with Duffy's and Marshall wells just before treatment. All three wells are now treated at the West Street Treatment Plant before being sent to the distribution system. Everyone on the water system receives the same treated water from the treatment plant, but the water may take longer to reach some people in the east side of town or on long dead ends.

The Water Department flushes the entire system annually and problem areas more often. This has helped to remove much of the sediments from the water mains but we still have sporadic occurrences of color and odor. The odors are more prevalent in the late summer, when the temperature of the water in the distribution system rises. The incidences of color are often associated with flow surges in the system from high volume water use or at the beginning of the filter backwash cycle.

The Water Department is has been working with the MassDEP North East Regional Office and AECOM Engineers of Wakefield, Massachusetts to come up with solutions to these issues. Numerous samples from the source wells and the distribution system have been collected and analyzed in an attempt to further define problem areas. Other samples were collected from the plant in an effort to further refine the treatment processes available to reduce the staining and odor problems. Several things have been determined from these samples.

- 1) With the Treatment Plant and all of the water storage on the west side of Georgetown and sixty-five miles of water main with numerous dead ends in town, it can be a long time before Treated water reaches the outer limits of the distribution system.
- 2) The chlorine added at the treatment plant to maintain residual has difficulty carrying to the far side of the distribution system to control the odors.
- 3) In early 2012 we increased the concentration of Chlorine added at the treatment plant and found that it oxidized some of the Iron that gets through the filters and caused the water to turn yellow.
- 4) The concentrations of iron & manganese in the source waters have nearly doubled since the treatment plant was built. The treatment plant can remove 95% of the Iron & Manganese and still not get below the Secondary Limits. The Treatment Plant typically removes 98.5-99.5% of the iron. The last .05% is still 10% of the MCL. This can settle out in the water mains and get stirred up with fluctuations of flow.
- 5) The source waters also have an abundance of dissolved organics that combine with the chlorine, reducing its effective range. Increasing the chlorine dosage to get it to carry further could result in high levels of potentially harmful by-products.
- 6) We found that treating less water between backwashes of the filters helps to avoid slugs of brown water leaving the treatment plant to settle out and stir up later. This means pumping more gallons from the wells with fewer gallons sold.

How do we protect our water resource?

Citizens of Georgetown have had the foresight to protect their natural resources, including water, by purchasing over 200 acres of undeveloped land under the control of the Water Department and the Town's Conservation Commission. Most of this land lies along the Parker River and Lufkin Brook, from Bailey Lane at Rock Pond to Andover Street near the VFW. Georgetown has a Water Protection Bylaw to control the activities within the Zone II watershed area, as well as a bylaw for Water Use Restrictions during water emergencies. Emergency water supply is available from Groveland, Rowley and Byfield water systems.

Water Department personnel check on the land surrounding the wells from time to time to prevent activities that might adversely affect the underlying aquifers. The Water Department allows for passive recreational use of our land. However, **MOTORIZED VEHICLES ARE NOT PERMITTED** without authorization from the Department. We test quarterly samples of the run-off from the country club for pesticides, herbicides and nitrogen compounds. We have an arrangement with the US Department of the Interior to sample the groundwater every couple of years and test for 225 parameters and at concentrations that we could never afford to do, at no cost to us.

Protecting the water in the distribution system

Over the years the Department has taken a number of steps to further safeguard the drinking water supply. Daily inspection of the pumping stations and treatment facilities are required. We have an active backflow prevention program to assure that contaminants are not drawn back into the system. Licensed department employees are available within minutes on a twenty-four hour emergency basis to deal with emergencies. Regular maintenance programs for cleaning the storage tanks, flushing the distribution system, exercising the gate valves, and checking the system for leaks helps ensure that the distribution system is sound.

The Water Department cleans and disinfects the water before it enters the distribution system. To make sure it stays that way we have an active BACKFLOW prevention program. Each new building has a Backflow device installed at the service entrance and Fire Sprinkler service to prevent any water that may become contaminated, from getting back into the distribution system. Any type of machinery that is connected directly to the potable water system with a potential to allow contaminants back into the drinking water, (i.e. boilers, dishwasher soap injectors, swimming pools or manufacturing equipment) must have a suitable backflow preventer. Depending on the type of device, these are tested once or twice each year. All irrigation systems and hose connections are required to have a backflow device to prevent contaminants from the lawn from coming back into the building. Each Irrigation system should be checked seasonally for proper backflow prevention to ensure the safety of the occupants of the building. For your safety and the protection of the entire system, all irrigation systems require a Permit from the Water Department.

To have your Irrigation System checked this summer please call the Water Department, or stop by the office at 1 Moulton Street, Georgetown, to make an appointment.

High water bills – Before you call

The rate structure changed beginning with the July 2012 bills to promote water conservation. Because inefficient water use drives up the cost of water supply for everyone, Georgetown's water rates increase with usage. Those who conserve pay at a lower rate than those who use a lot of water. With your water usage history now on the bottom of your bill, you can see how your usage compares to previous usage. If you think your water bill is higher than it should be, here are some things to look for.

- 1) Check the meter reading on your meter, which has six digits. The reading on the meter should be higher than the one on your bill. If it is not, please call us.
- 2) Has your usage changed (i.e. more people at home, more bathing, new pool or irrigation system, etc.)?
- 3) Leaking toilets are often the culprits. The water in the tank should be about one inch below the top of the overflow pipe. If not, adjust the float. Put a little food coloring into the tank and watch to see if it seeps into the bowl without flushing. If so, the flapper valve may need to be replaced.

To help keep the cost of water down we have installed more efficient pumps at all of the wells. We also purchase our necessary chemicals through a multi-town consortium to get the lowest prices possible. The Department also handles much of our own repairs and maintenance to trim costs.

DROP 10%

Georgetown Water Conservation

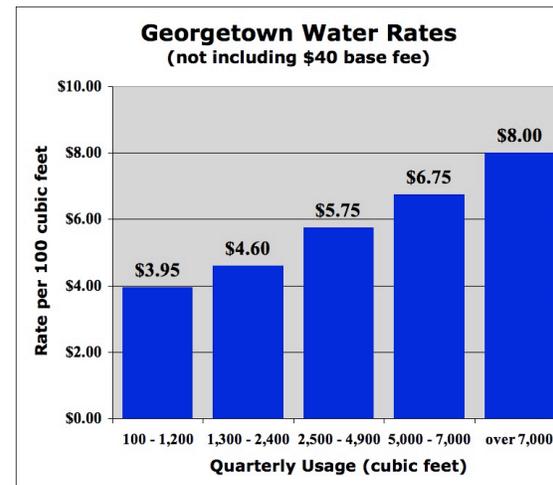
With Georgetown's ascending water rates, it pays to save water. Here are some tips to help you "DROP 10%."

Grow a beautiful "rain-only" lawn.

Grass naturally goes dormant in late summer. Even though it may turn brown, established grass can survive extended dry spells, especially if the soil has enough organic content to retain moisture. Here are some tips for a beautiful "rain-only" lawn:

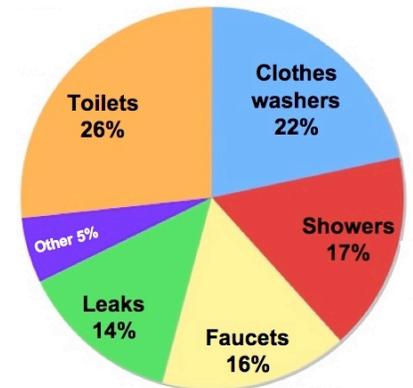
- Apply organic fertilizer in early spring and early fall.
- Get your soil tested. Apply lime to counteract acid rain.
- Cut the grass tall (3") with a sharp mower blade.
- Leave grass clippings on the lawn to build up the organic content of the soil, retain moisture, and nourish beneficial earthworms.
- Avoid pesticides that kill beneficial earthworms.
- Use drought-tolerant grass seed in September to fix bare spots.

Check out the "rain-only" demo plots in front of the Water Department.



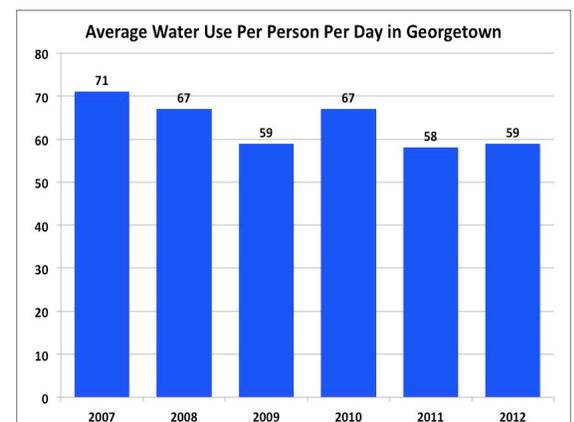
Install water-efficient toilets, washing machines, showerheads, and faucet aerators that pay for themselves by reducing your water bill.

- **High Efficiency Toilets (HETs)** are powerful and save a lot of water. Visit www.map-testing.com to look up the flushing power of over 1,600 toilet models. Some use as little as 0.8 gallons per flush.
- **Dual-flush toilet conversion kits** are inexpensive, and can greatly reduce water used for flushing liquid waste.
- **Water-efficient clothes washers** get clothes clean with less than half the water, and save energy too. Visit the EnergyStar web site to find clothes washers with a water factor of 5.0 or less.
- **Low-flow showerheads** save both water and energy. The flow of many modern low-flow showerheads feels surprisingly ample.
- **Water-saver faucet aerators** are inexpensive and easy to install. Use 0.5 or 1.0 gpm aerators in the bathroom, and 1.5 gpm aerators in the kitchen.
- **Fix leaks.** Toilets, faucets and irrigation systems leaking 24 hours a day can waste enormous amounts of water, and lead to very costly water bills.



Typical household water use

Georgetown's water use efficiency is improving, which contains cost increases and helps improve drinking water quality. Call the Georgetown Water Department at 978-352-5750, or see the town web site to find out about rebates and other assistance to improve your water use efficiency, and lower your water bills.



WATER QUALITY REPORTING

DEFINITIONS YOU NEED TO KNOW

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 are set to 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 drinking water disinfectant (chlorine, chloramines, chlorinedioxide) 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 (chlorine, chloramines, chlorinedioxide) allowed in drinking water. There is convincing evidence that the addition of a disinfectant is necessary for the control of microbial contaminants.

Action Level (AL) – The concentration of a contaminant, which if exceeded, triggers treatment or other action (typically flushing) required to eliminate the threat from a contaminant.

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

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 radioactivity)

NTU – Nephelometric Turbidity Units (a measure of how cloudy the water is)

pH - Potential of Hydrogen Ion activity (a measure of how acid, pH below 7.0, or caustic ph above 7.0)

ND – Not Detected

BDL – Below Detectable Limits

N/A – Not Applicable

TEST RESULTS for CALENDAR YEAR 2012

Source Water Sampling – 53 Coliform Bacteria samples were collected from the three wells, before being treated, in 2012. Total Coliform was detected in 10 of these well samples. E. Coli was **NOT** detected in any of the samples.

Distribution System Sampling

Coliform Bacteria – 156 bacteria samples were collected from the Treated Water in 2012. The Treatment Plant finished water is sampled twice each month. Twelve other sites throughout the distribution system are sampled each month. Coliform bacteria were **NOT** detected in any of the treated water samples.

Lead & Copper (AL – Lead = 0.015 mg/L, Copper = 1.30 mg/L)

Samples were collected from 21 homes in August for lead and copper. The 90th Percentile Lead in August = 0.009 mg/L. The 90th Percentile Copper in August = 0.17 mg/L. Samples were collected from the three schools on September 25th – The High School kitchen showed lead at **0.039 mg/L** sample. Running the tap 60 sec. reduces it to safe levels.

Nitrate, – Sampled from the Treatment Plant Finished Water

Nitrate MCL = 10 mg/L Results from April 3rd = 0.15 mg/L

Sodium - May 15th sample at the Water Office had 15 mg/L - at the Treatment Plant was 15.4 mg/L

Total Trihalomethane (Chlorine byproduct) - MCL = 80 ug/L August 7th at Erie-4 Result = 77.59 ug/L

Total Haloacetic Acids (Chlorine byproduct) - MCL = 60 ug/L August 7th at Erie-4 Result = 17.95 ug/L

Iron & Manganese and pH were sampled at the **Treatment plant, the Water office and all over Town throughout 2012 to monitor the effectiveness of our treatment and flushing program.**

	Sampled September 25th	Before Treatment	After Treatment	Water Office	Longview Apts.
Iron	MCL = 0.3 mg/L	Result = 5.70 mg/L	0.030 mg/L	0.060 mg/L	0.015 mg/L
Manganese	MCL = 0.05 mg/L	Result = 0.99 mg/L	0.014 mg/L	0.028 mg/L	0.049 mg/L
pH	6.5 – 8.5	Result = 6.5	6.7	6.7	6.7

For list of the required test results see 2012 TEST RESULTS on the Water Department Web Site