

# GROTON UTILITIES

## 2016

### Annual Water Quality Report

**The Groton Water Treatment Plant**  
***A New Day Is Dawning***



GROTON UTILITIES  
At Your Service

## Important Information About Your Drinking Water

Groton Utilities is proud to report that the water we supply meets all established Federal and State drinking water standards. During 2016, as in past years, we received NO violations for either water quality or reporting.

This 19th Annual Water Quality Report contains important information about the source and treatment of your water, lists the results of our 2016 testing, and includes some of the improvements we are making to enhance the quality of your drinking water. The Report also contains information about what you can do to conserve and protect your valuable water supply.

### *The Groton Water Treatment Plant – A New Day is Dawning*

*For many years, we have included information in our annual water quality report (CCR) to update you, our customers, as to progress we had made “pilot testing” newer water treatment technologies. We did that in preparation to design and build a new water treatment plant (WTP) that would better meet the challenges of the future—enabling us to continue to comply with water quality regulations as they become more stringent and also as more contaminants become noted in the environment, to employ the technologies for their removal.*

*We are pleased to announce that with support from all corners—the Connecticut Department of Public Health, the community, our Utility Commission, our Mayor and Council, and our Freeman—“a new day is dawning!”*

*We are now poised to build a brand new water treatment plant. This new plant will incorporate the latest technologies, which pilot testing demonstrated would be effective in improving our water quality. Some of these new technologies include Dissolved Air Flotation (DAF), Deep-bed Granular Activated Carbon (GAC), and Manganese Removal Contactors. These newer treatment methods will enable us to continue to deliver safe drinking water which meets potable water quality standards now and in the future. The new upgraded WTP will also address aging infrastructure of mechanical, electrical, and HVAC systems. To learn more about our new plant, please go to <https://www.youtube.com/watch?v=-BZ0R963t4k> to view a short video presentation.*

*Throughout the 20th century our forebears looked to the future and laid the foundation for the water quality we enjoy today. With this new water plant, all of us can take pride that we have carried on their legacy. Thank you for reading this water quality report and thank you for being a part of our legacy.*

*Richard Stevens  
Manager of Water, Groton Utilities*

The graphic design for this Water Quality Report was done by Jesse Carbone – Carbone Graphics.

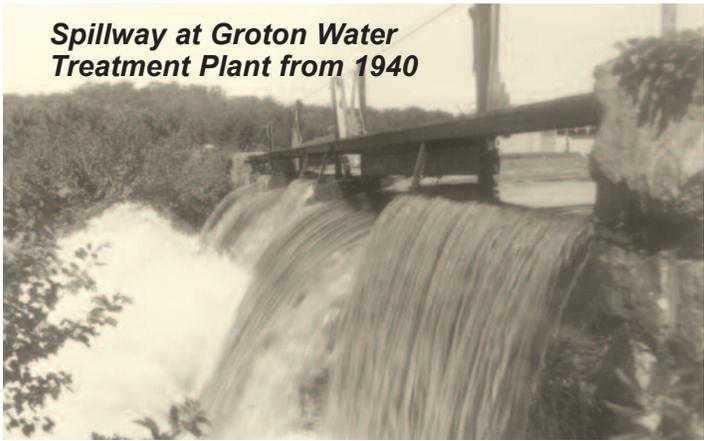
## Source Water

Groton Utilities’ water is supplied by surface water from a series of five interconnected reservoirs covering a watershed of 15.6 miles, and also includes three wells. Four reservoirs – Morgan, Ledyard, Poheganut, and Smith Lake flow into Poquonnock, our terminal reservoir. When full, all five reservoirs have a combined capacity of 2.5 billion gallons of water. Planning for the future, we invested funds in 2014 to secure water rights from Haley’s Brook in Groton, and have advised local and state agencies to ensure that the immediate watershed area will receive protection status. Our staff includes reservoir patrol staff who, with local and state police, maintain a high level of security, monitor the watershed for potential sources of contamination, and routinely collect water samples for laboratory analysis. We also have a spill response team and trailer to assist emergency responders with any threat of contamination that could impact our water supply. Maintaining the security of our water supply is everyone’s responsibility. Please advise us of any suspicious activity by calling us at (860) 446-4000.

## Source Water Assessment

The State of Connecticut Department of Public Health has performed an assessment of our drinking water sources. It was found that Groton Utilities’ drinking water sources have an overall low susceptibility to potential sources of contamination. The completed report is available for access on the Drinking Water Division’s website: [www.ct.gov/dph](http://www.ct.gov/dph). Click on Topics A-Z, Drinking Water, Source Water Protection, and then Connecticut’s SWAP Assessment Reports and Findings.





### How You Can Help to Protect Your Source Water Quality

- Don't flush medications or over-the-counter products down the toilet or sink. Put them in the trash (and not in the recycling bin). For information on safely disposing them in the trash, visit the CT DEEP's website at [www.ct.gov/deep](http://www.ct.gov/deep). Under Environmental Quality, click on Pollution Prevention; and then Proper Medication Disposal.
- **Go Green** – Seek alternatives to caustic household cleaners, pesticides, paint removers, and other products containing toxic chemicals. Go to the CT DEEP's website at [www.ct.gov/deep](http://www.ct.gov/deep). Click on Pollution Prevention; and then Reducing Toxic Products in the Home. Alternative "recipes" (as well as other helpful tips) are given for many toxic products commonly used in the house and garden.
- Properly dispose of paints, motor oil, pesticides and other hazardous household waste by bringing it to a household hazardous waste collection site. Visit <http://scrrra.org> and under Discover SCRRRA (left column) click on "Household Hazardous Waste" for a complete list of Household Hazardous Waste collection days in 2017.

### Water Treatment

Our certified water treatment plant operators are responsible for producing water that meets all State and Federal drinking water requirements. In addition to routine plant operations, they also maintain and repair the numerous pumps and valves in the plant and the five pumping stations located in the distribution system.

Cleaning sedimentation basins, and maintaining on-line monitoring equipment and the operational readiness of the emergency generators, are just a few examples of duties routinely performed.

Our water plant was constructed in 1939 and has been periodically upgraded to meet regulatory requirements. The water is treated through a process termed "conventional treatment" which consists of coagulation, flocculation, sedimentation and filtration. Chlorine dioxide may be added during the summer months to help remove iron and manganese. Lime and phosphate are added to inhibit corrosion of plumbing. Chlorine is added for disinfection and to maintain the quality of water as it travels throughout the piping network to your home. Fluoride is added to reduce the formation of cavities, as required by State of Connecticut Public Health regulations. In 2016, the water treatment plant produced an average of 5.8 million gallons a day and delivered water to approximately 44,000 customers in the City and Town of Groton, Noank, Groton Long Point, and parts of Ledyard, Montville, and Mystic.

### Distribution Operations

Our certified water distribution operators are responsible for maintaining and servicing over 100 miles of water mains in Groton. One of their duties is fire hydrant maintenance, which ensures an adequate supply of water in the event of a fire. They also exercise valves, repair and replace mains to ensure an adequate supply of water to your home or business, and flush hydrants. Hydrants are flushed in the spring and summer months to maintain water quality and remove any rust or sediments which have accumulated throughout the year. **If discoloration occurs, run the cold water for 15 or 20 minutes until it clears. If it persists, call us at (860) 446-4000.**





*Architectural rendition of water treatment plant upgrade*

### **Did you know that?**

All of our operators have the highest grade of certification possible, as required by the CT Department of Public Health. They are also required to take continuing education courses to maintain their certification.

### **Project Management**

Our project managers' responsibilities include overseeing new main construction and repair, as well as water treatment plant modifications. They also maintain all records digitally, pertaining to the location, type, and age of all pipes, valves, and equipment in the distribution system. This data is used to update the Groton Utilities asset management plan; Call Before You Dig is also an important function of Project Management.

Did you know that you should Call Before You Dig (811 or 1-800-922-4455) at least two full working days prior to any home improvement project requiring digging? You will get your underground utilities marked out for free, avoiding possible physical harm, fines, and repair costs for any damaged utility line. Visit their website at [www.cbyd.com](http://www.cbyd.com) for more information.

### **Customer Service**

Our customer service representatives are dedicated to provide you with personalized customer service. Call them at (860) 446-4000 or stop in at the office, located at 295 Meridian Street. Whether by telephone or in

person, they will assist you with your service needs, answer questions, and respond to problems or concerns that you may have. Office Hours of operation are: Monday through Wednesday and Friday from 8:00 AM to 5:00 PM; Thursday from 8:00 AM to 7:00 PM and Saturday from 8:00 AM to noon. The office is closed on holidays. Emergency or after hour calls are also answered at (860) 446-4000.

### **Water Quality/System Improvements**

As noted in our introduction, after years of planning and preparation, we are upgrading our water treatment plant. But we will also continue to work to improve the water quality and reliability of our water supply prior to treatment and after the water enters the distribution system. This includes water main replacement where needed, and upgrades to our standpipe operations to maintain the freshness of our water, as well as hydrant flushing and other routine maintenance operations.

### **Regional Water**

Groton Utilities continues to improve its services to ensure the best water quality and required quantity of water be delivered to our customers in Groton, Mystic, Ledyard, Noank, Groton Long Point, Montville, Mohegan Tribe, and available for other regional interconnected customers — New London, East Lyme, Waterford, and Norwich.





*(Clockwise from top-right) Groton Water Treatment Plant personnel from 1939, 1955, 1989, and today.*

### Community Involvement

Groton Utilities conducts water plant tours to educate students and the public about our operations, water conservation, and source water protection. Additionally, classroom presentations, mentoring, job shadowing, and internship opportunities are made available. We also conduct escorted tours in the watershed for various groups for educational, environmental and other supervised activities. These groups include, but are not limited to Ledyard and Groton residents, the Audubon Society for its annual bird count, Denison Pequotsepos Nature Center, GOSA and local schools for research purposes. Groton Utilities is also a member of the Greater Mystic Chamber of Commerce and the Eastern Connecticut Chamber of Commerce.

### Water Quality Testing

Groton Utilities maintains a State-certified laboratory (CT License #PH-0409) where the majority of our water analyses are conducted. During the year, samples are collected from the source water before treatment, during the various stages in the treatment process, and throughout the distribution system. Tests for bacteria, physical qualities, various organic and inorganic compounds, and pesticides and herbicides are conducted.

To ensure that tap water is safe to drink, EPA prescribes limits on the amounts of certain contaminants in water provided by public water systems. FDA regulations establish limits for contaminants in bottled water which must provide the same protection for public health.

**The table on the last page of this report lists only the contaminants that were found in our drinking water in 2016. All levels found were less than the maximum level allowed by the EPA and CT Department of Public Health. The table does not list the more than 60 contaminants that were tested for, but were not present in our water. You will also note that some of the results, though representative, were from samples collected prior to 2016. That is because the CT Department of Public Health allows us to monitor for some contaminants less than once per year because the concentrations of these contaminants do not change frequently.**

Any water quality concerns, questions or requests for more information can be phoned in directly to our lab at (860) 446-4135 during normal business hours (Monday – Friday, 7:00 am – 3:00 pm). Emergency or after hour calls are answered at (860) 446-4000.





Keeping our reservoirs secure



Stream and reservoir sampling

### Sources of Drinking Water Contaminants

The 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 radioactive material, and can pick up substances resulting from the presence of animals or from human activity. Listed below are some examples of such contaminants:

- Microbiological contaminants such as viruses and bacteria, which may come from septic systems, agriculture and livestock operations, and wildlife;
- Inorganic contaminants, such as salts and metals that can be naturally occurring or result from urban storm water runoff, industrial or domestic wastewater discharges, or farming;
- Pesticides and herbicides, which may come from a variety of sources such as agriculture, urban storm water runoff, and residential uses;
- Organic chemicals, including synthetic and volatile organic compounds which are byproducts of industrial processes, and can come from gas stations, urban storm water runoff, and septic systems;
- Radioactive contaminants that can be naturally occurring.

### Health Effects Information

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 (800) 426-4791.

*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.

### Important Information about Lead and Copper in Drinking Water

Due to watershed protection measures and an active program to control corrosion in water pipes, our water system has remained in compliance with drinking water regulations. However, it is possible that lead or copper 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 present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Infants and children who drink water containing lead in excess of the action level could experience delays in their physical or mental development. Children could show slight deficits in attention span and learning abilities. Adults who drink water containing lead in excess of the action level over many years could develop kidney problems or high blood pressure.

Copper is an essential nutrient, but some people who drink water containing copper in excess of the action level over a relatively short amount of time could experience gastrointestinal distress. Some people who drink water containing copper in excess of the action level over many years could suffer liver or kidney damage. People with Wilson's Disease should consult their personal doctor.

Lead and copper in drinking water is primarily from materials and components associated with service lines and home plumbing. Groton Utilities is responsible for providing high quality drinking water, but cannot control the variety of materials used in plumbing components

Following are steps that can be taken to minimize potential exposure to lead:

- ✓ **If the water has sat unused in your pipes for more than several hours, flush your cold water tap for a few minutes (or until it gets cold) before using for drinking, cooking or making baby formula.**
- ✓ **Use cold water (not water from the hot water tap) for drinking, cooking, making formula, hot cocoa, tea, instant foods, etc.**
- ✓ **Periodically remove and clean the aerator or screen from the end of each faucet and rinse to remove any debris.**
- ✓ **Ensure that any updates to household plumbing are done with lead-free solder and fixtures.**

If you are concerned about lead or copper 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 (800-426-4791) or at [www.epa.gov/your-drinking-water/basic-information-about-lead](http://www.epa.gov/your-drinking-water/basic-information-about-lead).

## Water Conservation Tips

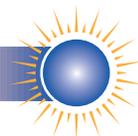
- 💧 Fix leaky faucets, showerheads and toilets.
- 💧 Consider replacing older toilets with a WaterSense labeled high efficiency toilet. These must pass rigorous performance criteria and can't use more than 1.28 gallons per flush in order to earn the WaterSense label. (Older toilets can use up to four times more water than WaterSense toilets).
- 💧 Install aerators on your faucets. They reduce the flow and use air to maintain good water pressure. (and remember to periodically remove and clean faucet aerators because they can trap debris).
- 💧 Take shorter showers. High efficiency WaterSense showerheads automatically use less water without compromising the quality of your shower.
- 💧 Consider replacing your old washing machine with a high-efficiency Energy Star labeled model, which uses up to 50% less water and electricity.
- 💧 Run the dishwasher and washing machine only when full.
- 💧 Don't over-water your lawn or garden - use a timer, and water early in the morning or at night to avoid excess evaporation.
- 💧 Clean your sidewalk or driveway with a broom instead of a hose.

*There is a strong commitment by Groton Utilities, the local community, state regulators, and public health professionals to protect Connecticut's drinking water supplies and inform consumers about water quality issues.*

*For more information, call us at (860) 446-4000. We provide 24 hour a day service and emergency response.*

The Utility Commission, our policy making body, meets regularly at 10:00 AM on the 4th Wednesday of each month in Council Chambers at 295 Meridian Street, Groton.

*Learn more about the Groton Utilities water system at: [www.grotonutilities.com](http://www.grotonutilities.com)*



# GROTON UTILITIES 2016 ANNUAL WATER QUALITY DATA

## Regulated Contaminants Highest Level Allowed Groton Water

Parameter	Units	MCL	MCLG	Highest Detected Level	Range (a)	Major Source	Meets Standards?
Barium	ppm	2	2	0.009	—	Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits	YES
Chloride	ppm	250	N/A	53	36 - 53	Stormwater runoff containing road salt, erosion of natural deposits	YES
Fluoride	ppm	4	4	1.06	0.60 - 1.06	Erosion of natural deposits; water additive which promotes strong teeth	YES
Nitrate	ppm	10	10	0.13	ND - 0.13	Runoff from fertilizer use, leachate from septic tanks; sewage, erosion of natural deposits	YES
Parameter	Units	TT	MCLG	Lowest RAA	Range	Major Source	
Total Organic Carbon	N/A	Removal ratio must be $\geq 1.00$	N/A	1.6	1.5 - 1.6	Naturally present in the environment	YES
Parameter	Units	TT	MCLG	Highest Detected Level	Lowest % of samples meeting limit	Major Source	
Turbidity (NTU)	(b)	95% of samples must be $\leq 0.3$ NTU	N/A	0.5	99%	Soil runoff	YES
Parameter	Units	Action Level	MCLG	90th percentile (c)	# of sites above AL	Major Source	
Lead	ppb	15	0	2.4	0 of 30	Corrosion of household plumbing systems; erosion of natural deposits	YES
Copper	ppm	1.3	1.3	0.07	0 of 30	Corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives	YES
Parameter	Units	MCL	MCLG	Highest LRAA (d)	Range	Major Source	
Haloacetic Acids	ppb	60	N/A	27.7	19.0 - 39.8	By-product of drinking water disinfection	YES
Total Trihalomethanes	ppb	80	N/A	57.5	32.6 - 83.2	By-product of drinking water disinfection	YES
Parameter	Units	MRDL	MRDLG	Highest RAA	Range	Major Source	
Chlorine	ppm	4	4	1.34	0.14 - 1.88	Water additive used to control microbes	YES
Parameter	Units	MCL	MCLG	Highest Monthly Average	Range	Major Source	
Chlorite	ppm	1	0.8	0.10	0.05 - 0.12	By-product of chlorine dioxide, which is used to remove Manganese	YES

## Unregulated Contaminants (e)

Parameter	Units	MCL	MCLG	Average	Range	Major Source	Meets Standards?
Sodium	ppm	Notification level = 28	None	21	19 - 25	Stormwater runoff containing road salt, erosion of natural deposits	N/A
Sulfate	ppm	None	None	7	5 - 8	Naturally occurring	N/A

**Notes**  
 Only detected contaminants are listed in this table. Analyses were performed in 2016 unless noted otherwise.

(a) A range of values is not presented for those parameters which were measured only once in 2016.

(b) Turbidity is a measure of the cloudiness of water and is a good indicator of the effectiveness of our filtration system. Turbidity cannot exceed 1 NTU.

(c) Of the 30 homes tested in 2015, 90% had lead levels below 2.4 ppb, and 90% had copper below 0.07 ppm; since these values are below their respective Action Levels, our system is in compliance. Next analysis is due in 2018.

(d) Highest Locational Running Annual Average (LRAA) of samples taken in the distribution system. Values in the range are individual sample results.

(e) EPA has not established drinking water standards for unregulated contaminants. We are required to monitor for them to assist the EPA in determining their occurrence and whether future regulation is warranted.

**margin of safety.** (MCLs are set as close to the MCLGs as feasible using best available technology.)

**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 contamination.

**N/A** = Not Applicable

**ND** = Not Detected

**NTU** = Nephelometric Turbidity Units

**<** = Less than

**>** = Greater than

**ppm** = parts per million

**ppb** = parts per billion

**pCi/L** = picoCuries per liter

**P/A** = presence / absence

**RAA** = Running Annual Average

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

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

**MCL** = Maximum Contaminant Level: the highest level of a contaminant that is allowed in drinking water.

**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