



Presented By
Suez

ANNUAL WATER QUALITY REPORT

WATER TESTING PERFORMED IN 2016

Este informe contiene información muy importante sobre su agua potable. Tradúzcalo o hable con alguien que lo entienda bien.

Cé rapport contient des information importantes concernant votre eau potable. Veuillez traduire, ou parlez avec quelqu' un qui peut le comprendre.

PWS ID#: 2103000

We've Come a Long Way

Once again we are proud to present our annual water quality report covering the period between January 1 and December 31, 2016. In a matter of only a few decades, drinking water has become exponentially safer and more reliable than at any other point in human history. Our exceptional staff continues to work hard every day—at any hour—to deliver the highest-quality drinking water without interruption. Although the challenges ahead are many, we feel that by relentlessly investing in customer outreach and education, new treatment technologies, system upgrades, and training, the payoff will be reliable, high-quality tap water delivered to you and your family.

Opportunities for Public Participation

If you would like to participate in discussions regarding your water quality, you may attend the Public Service Committee meetings. They are held every month before the City Council Meeting. Attending these meetings will allow you to discuss any agenda item and learn information about your water system. You may also contact SUEZ (formerly United Water Environmental Services) at the Crystal Lake Water Treatment Facility for additional information.

Important Health Information

Some people may be more vulnerable to contaminants in drinking water than the general population. Immunocompromised persons such as those with cancer undergoing chemotherapy, those who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly, and infants may be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. The U.S. EPA/CDC (Centers for Disease Control and Prevention) guidelines on appropriate means to lessen the risk of infection by *Cryptosporidium* and other microbial contaminants are available from the Safe Drinking Water Hotline at (800) 426-4791 or <http://water.epa.gov/drink/hotline>.



Substances That Could Be in Water

To ensure that tap water is safe to drink, the Department of Environmental Protection (MADEP) and the U.S. Environmental Protection Agency (U.S. EPA) prescribe regulations limiting the amount of certain contaminants in water provided by public water systems. The Food and Drug Administration (FDA) and Massachusetts Department of Public Health (DPH) regulations establish limits for contaminants in bottled water that must provide the same protection for public health. Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of these contaminants does not necessarily indicate that the water poses a health risk.

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. Substances 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, or wildlife;

Inorganic Contaminants, such as salts and metals, which can be naturally occurring or may result from urban stormwater runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming;

Pesticides and Herbicides, which may come from a variety of sources such as agriculture, urban stormwater runoff, and residential uses;

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

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

More information about contaminants and potential health effects can be obtained by calling the U.S. EPA's Safe Drinking Water Hotline at (800) 426-4791.

Where Does My Water Come From?

Your drinking water comes from GROUND WATER and SURFACE WATER sources. The surface water supplies comprise three sources. They are Cowee Pond, Perley Brook Reservoir, and Crystal Lake, all of which are located within the City of Gardner. Water naturally flows by gravity from Cowee Pond to Perley Brook Reservoir and is then pumped to Crystal Lake.

The Snake Pond Well Treatment facility is the lone ground water source. This source is used as a secondary source to help with seasonal water demand issues.

The Crystal Lake Water Treatment Facility that was upgraded in 2007 continues to produce high-quality drinking water. The Crystal Lake Water Treatment Facility, which uses Micro Filtration Membrane filters, has a total capacity of 4.5 million gallons per day. Five hundred and ninety three million gallons of RAW water was pumped from Crystal Lake in 2016 and treated in order to produce five hundred and nineteen million gallons of FINISHED water that was distributed to the City of Gardner.

The Snake Pond Well treatment facility that was upgraded in 2006 also continues to produce high-quality drinking water. This ground water facility was upgraded to treat the amount of manganese and iron that is naturally found in ground water in our area. At this time, it is capable of treating these high levels of metals and has been on line since April 2006. This facility pumped one hundred and eight million gallons of RAW water in order to produce ninety nine million five hundred and fifty thousand gallons of FINISHED water that was distributed to the City of Gardner. The facility has a capacity of 1.3 million gallons a day.

There are three drinking water storage tanks in the City of Gardner. These above-ground storage tanks are used to help ensure a safe, reliable supply of drinking water and to provide fire protection. The combined capacity of these storage tanks is 4.75 million gallons.

Lead in Home Plumbing

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. We are responsible for providing high-quality drinking water, but we 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 www.epa.gov/lead.



The Benefits of Fluoridation

Fluoride is a naturally occurring element in many water supplies in trace amounts. In our system, the fluoride level is adjusted to the optimal level averaging 0.7 part per million (ppm) to improve oral health in children. At this level, it is safe, odorless, colorless, and tasteless. Our water system has been providing this treatment since 1987. There are over 3.9 million people in 140 Massachusetts water systems and 184 million people in the U.S. who receive the health and economic benefits of fluoridation.

QUESTIONS?

For more information about this report, or for any questions relating to your drinking water, please call Timothy Michaud, Chief Operator, at (978) 630-8791.

Failure in Flint

The national news coverage of water conditions in Flint, Michigan, has created a great deal of confusion and consternation. The water there has been described as being corrosive. But is corrosive water necessarily bad?

Corrosive water can be defined as a condition of water quality that will dissolve metals (iron, lead, copper, etc.) from metallic plumbing at an excessive rate. There are a few contributing factors but, generally speaking, corrosive water has a pH of less than 7; the lower the pH, the more acidic, or corrosive, the water becomes. (By this definition, many natural waterways throughout the country can be described as corrosive.) While all plumbing will be somewhat affected over time by the water it carries, corrosive water will damage plumbing much more rapidly than water with low corrosivity.

By itself, corrosive water is not a health concern; your morning glass of orange juice is considerably more corrosive than the typical lake or river. What is of concern is that exposure in drinking water to elevated levels of the dissolved metals increases adverse health risks.

Public water systems are required to maintain their water at optimal conditions to prevent it from reaching corrosive levels. Rest assured that we routinely monitor our water to make sure that what happened in Flint never happens here. For more information, download this informative pamphlet: <http://goo.gl/KpTmXv>.



Source Water Assessment

The Department of Environmental Protection (MADEP) has prepared a Source Water Assessment Program (SWAP) report for the water supply source(s) serving this water system. The report assesses the susceptibility of each source of public water supplies. A susceptibility ranking of HIGH was assigned to this system using information collected during the assessment by MADEP. The plan is an assessment of the delineated area around our listed sources through which contaminants, if present, could migrate and reach our source water. It also includes an inventory of potential sources of contamination within the delineated area, and a determination of the water supply's susceptibility to contamination by the identified potential sources.

Our SWAP report is available at your Water Department billing office and at the Board of Health. Both of these offices are located within Gardner City Hall. You can also read it online at the mass.gov website.

How Is My Water Treated?

Our water system makes every effort to provide you with safe and pure drinking water. To improve the quality of the water delivered to you, we treat it to remove several contaminants.

- We add Sodium Hypochlorite and Ammonium Sulfate to protect you against microbial contaminants.
- We add Poly Aluminum Chloride to help coagulate the dirt particles within the untreated water to help the Microfiltration process.
- We filter the water to remove small particles and organisms such as sediment, algae, and bacteria.
- We chemically treat the water to reduce lead and copper concentrations from leaching out of your household plumbing.
- We add Sodium Fluoride to the water to aid in dental health and hygiene.
- We add Soda Ash to adjust the pH of the water to assist in corrosion control of the distribution system.
- We chemically treat the water to reduce levels of iron and manganese.

SUEZ (formerly United Water Environmental Services) and MADEP regularly monitor the quality of our water. It is monitored to determine the effectiveness of the existing water treatment and whether any additional treatment is required. Our water system makes every effort to provide you with safe and pure drinking water.



Test Results

Our water is monitored for many different kinds of contaminants on a very strict sampling schedule. The information below represents only those substances that were detected; our goal is to keep all detects below their respective maximum allowed levels. The State recommends monitoring for certain substances less often than once per year because the concentrations of these substances do not change frequently. In these cases, the most recent sample data are included, along with the year in which the sample was taken.

We participated in the 3rd stage of the U.S. EPA's Unregulated Contaminant Monitoring Rule (UCMR3) program by performing additional tests on our drinking water. UCMR3 benefits the environment and public health by providing the EPA with data on the occurrence of contaminants suspected to be in drinking water, in order to determine if the EPA needs to introduce new regulatory standards to improve drinking water quality. Contact us for more information on this program.

REGULATED SUBSTANCES

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	MCL [MRDL]	MCLG [MRDLG]	AMOUNT DETECTED	RANGE LOW-HIGH	VIOLATION	TYPICAL SOURCE
Barium (ppm)	2016	2	2	0.023	0.023–0.023	No	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits
Chlorine ¹ (ppm)	2016	[4]	[4]	2.17	0.16–3.08	No	Water additive used to control microbes
Combined Radium (pCi/L)	2015	5	0	0.26	ND–0.26	No	Erosion of natural deposits
Fluoride ¹ (ppm)	2016	4	4	0.705	ND–0.9	No	Water additive that promotes strong teeth
Haloacetic Acids [HAA] ¹ (ppb)	2016	60	NA	19.9	2.1–33.5	No	By-product of drinking water disinfection
Nitrate (ppm)	2016	10	10	0.18	0.18–0.18	No	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits
Perchlorate (ppb)	2016	2	NA	0.52	0.12–0.92	No	Inorganic chemicals used as oxidizers in solid propellants for rockets, missiles, fireworks, and explosives
TTHMs [Total Trihalomethanes] ¹ (ppb)	2016	80	NA	33.5	3.1–44.8	No	By-product of drinking water disinfection
Total Organic Carbon (ppm)	2016	TT	NA	2.145	1.83–2.42	No	Naturally present in the environment
Turbidity ² (NTU)	2016	TT	NA	0.45	0.010–0.45	No	Soil runoff
Turbidity (Lowest monthly percent of samples meeting limit)	2016	TT = 95% of samples meet the limit	NA	100	NA	No	Soil runoff

Tap water samples were collected for lead and copper analyses from sample sites throughout the community.

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	AL	MCLG	AMOUNT DETECTED (90TH%TILE)	SITES ABOVE AL/ TOTAL SITES	VIOLATION	TYPICAL SOURCE
Copper (ppm)	2015	1.3	1.3	0.13	0/30	No	Corrosion of household plumbing systems; Erosion of natural deposits
Lead (ppb)	2015	15	0	3	0/30	No	Corrosion of household plumbing systems; Erosion of natural deposits

SECONDARY SUBSTANCES

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	SMCL	MCLG	AMOUNT DETECTED	RANGE LOW-HIGH	VIOLATION	TYPICAL SOURCE
Aluminum (ppb)	2016	200	NA	60	23–60	No	Erosion of natural deposits; Residual from some surface water treatment processes
Chloride (ppm)	2016	250	NA	109	109–109	No	Runoff/leaching from natural deposits
pH (Units)	2016	6.5–8.5	NA	7.94	7.25–8.86	No	Naturally occurring
Total Dissolved Solids [TDS] (ppm)	2016	500	NA	92	92–92	No	Runoff/leaching from natural deposits
Zinc (ppm)	2016	5	NA	0.01	0.01–0.01	No	Runoff/leaching from natural deposits; Industrial wastes

UNREGULATED SUBSTANCES ³

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	AMOUNT DETECTED	RANGE LOW-HIGH	TYPICAL SOURCE
Bromodichloromethane (ppb)	2016	6.9	6.9–6.9	Disinfection by-product
Chlorodibromomethane (ppb)	2016	1.8	1.8–1.8	Disinfection by-product
Chloroform (ppm)	2016	10.5	10.5–10.5	Disinfection by-product
Sodium (ppm)	2016	33.8	33.8–33.8	Natural sources; runoff from use as salt on roadways; by-product of treatment process
Sulfate (ppm)	2016	5	5–5	Naturally occurring

UNREGULATED CONTAMINANT MONITORING RULE - PART 3 (UCMR3) ³

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	AMOUNT DETECTED	RANGE LOW-HIGH	TYPICAL SOURCE
Chlorate (ppb)	2013	535.49	245.75–779.76	Known disinfection by-product; forms when sodium hypochlorite is used in disinfection process
Strontium (ppb)	2013	86.77	65.50–130.27	Naturally occurring element

¹ Results are LRAA/RAA.

² Turbidity is a measure of the cloudiness of the water. It is monitored because it is a good indicator of the effectiveness of the filtration system.

³ Unregulated contaminants are those for which the U.S. EPA has not established drinking water standards. The purpose of monitoring unregulated contaminants is to assist the EPA in determining their occurrence in drinking water and whether future regulation is warranted.

Definitions

90th Percentile: Out of every 10 homes sampled, 9 were at or below this level.

AL (Action Level): The concentration of a contaminant that, if exceeded, triggers treatment or other requirements that a water system must follow.

LRAA (Locational Running Annual Average): The average of sample analytical results for samples taken at a particular monitoring location during the previous four calendar quarters. Amount Detected values for TTHMs and HAAs are reported as LRAAs.

MCL (Maximum Contaminant Level): 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.

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 margin of safety.

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 contaminants.

NA: Not applicable

ND (Not detected): Indicates that the substance was not found by laboratory analysis.

NTU (Nephelometric Turbidity Units): Measurement of the clarity, or turbidity, of water. Turbidity in excess of 5 NTU is just noticeable to the average person.

pCi/L (picocuries per liter): A measure of radioactivity.

ppb (parts per billion): One part substance per billion parts water (or micrograms per liter).

ppm (parts per million): One part substance per million parts water (or milligrams per liter).

SMCL (Secondary Maximum Contaminant Level): SMCLs are established to regulate the aesthetics of drinking water like appearance, taste and odor.

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