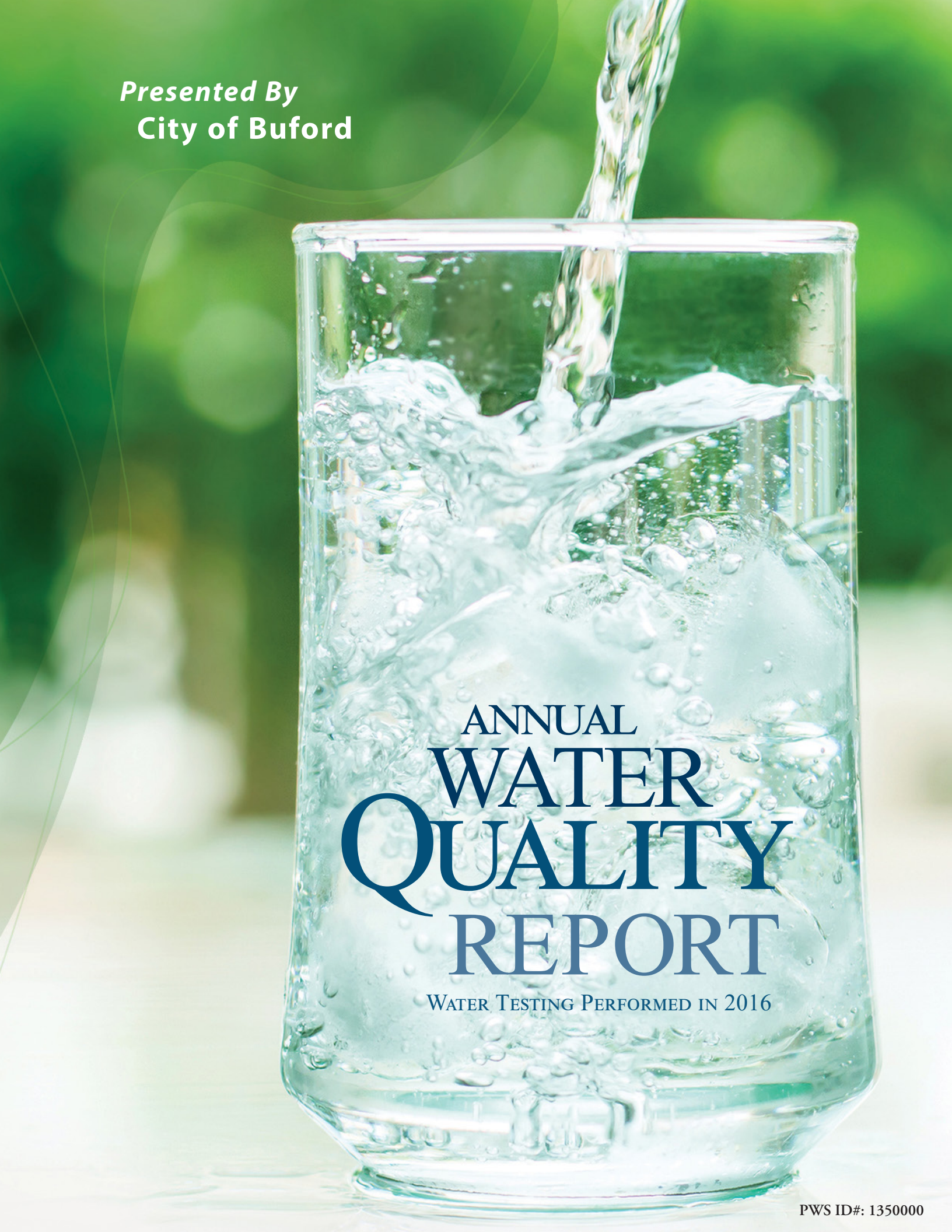
Presented By
City of Buford



ANNUAL WATER QUALITY REPORT

WATER TESTING PERFORMED IN 2016

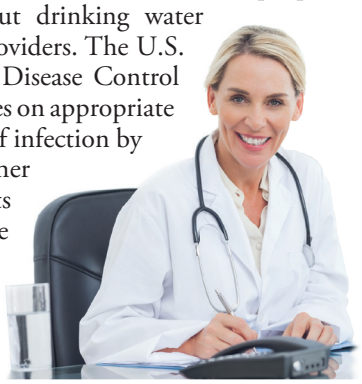
PWS ID#: 1350000

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.

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.



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.

Where Does My Water Come From?

The City of Buford receives its water supply from Lake Sidney Lanier, located just north of Buford. We also purchase a small portion of our water from the Gwinnett County Water Plant. Lake Lanier is formed by the Buford Dam, which holds the Chattahoochee and Chestatee rivers flowing from northern Georgia. Lake Lanier is the most visited Corps of Engineers' project in the country. Lake Lanier is a key element in terms of water supply: More than 60 percent of Georgia's population receives drinking water from the Chattahoochee system. Lake Lanier's watershed is composed of more than 1,000 square miles in 10 Georgia counties. The watershed contains heavily forested areas, with agriculture being the largest activity. Lake Lanier is very low in point source and urban runoff pollutants. The Buford Waterworks was built in 1934 to filter 500,000 gallons of drinking water per day. In 1965, it was expanded to 1 million gallons per day. In 1994, the plant was high rated to 2 million gallons per day. We plan to grow with the future needs of our citizens.

How Is My Water Treated and Purified?

The treatment process consists of a series of steps. First, raw water is drawn from Lake Lanier and sent to our reservoir. The water is then gravity fed into the plant, where lime, alum, polymer, and chlorine are added as the water passes through a static mixer.

The addition of these substances cause small particles to adhere to one another (called floc), making them heavy enough to settle into a basin from which sediment is removed. Chlorine is then added for disinfection. At this point, the water is filtered through layers of fine coal and silicate sand. As smaller, suspended particles are removed, turbidity disappears and clear water emerges. Chlorine is added again as a precaution against any bacteria that may still be present. (We carefully monitor the amount of chlorine, adding the lowest quantity necessary to protect the safety of your water without compromising taste.) Finally, lime (to adjust the final pH and alkalinity), fluoride (to prevent tooth decay), and a corrosion inhibitor (to protect distribution system pipes) are added before the water is pumped to sanitized underground reservoirs, water towers, and into your home or business.

Community Participation

The Buford City Commissioners meet the first Monday of every month at 7 p.m. in the Commissioners Chambers at Buford City Hall. Your questions and concerns can be heard after the regular scheduled meetings. For more information, call Buford City Hall at (770) 945-6761, Monday through Friday, 9 a.m. to 5 p.m.

Substances That Could Be in Water

To ensure that tap water is safe to drink, the U.S. EPA prescribes regulations limiting the amount of certain contaminants in water provided by public water systems. U.S. Food and Drug Administration 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, in some cases, radioactive material, and 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 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.

For more information about contaminants and potential health effects, call the U.S. EPA's Safe Drinking Water Hotline at (800) 426-4791.

Fact or Fiction

A person can live about a month without food, but only about a week without water. *(Fact: Dehydration symptoms generally become noticeable after only 2 percent of one's normal water volume has been lost.)*

A person should consume a half-gallon of water daily to live healthily. *(Fact: A person should drink at least 64 ounces, or 8 cups, of water each day.)*

Methods for the treatment and filtration of drinking water were developed only recently. *(Fiction: Ancient Egyptians treated water by siphoning water out of the top of huge jars after allowing the muddy water from the Nile River to settle. And, Hippocrates, known as the father of medicine, directed people in Greece to boil and strain water before drinking it.)*

There is the same amount of water on Earth now as there was when the Earth was formed. *(Fact: The water that comes from your faucet could contain molecules that dinosaurs drank!)*

A typical shower with a non-low-flow shower head uses more water than a bath. *(Fiction: A typical shower uses less water than a bath.)*

About half the water treated by public water systems is used for drinking and cooking. *(Fiction: Actually, the amount used for cooking and drinking is less than 1 percent of the total water produced!)*

One gallon of gasoline poured into a lake can contaminate approximately 750,000 gallons of water. *(Fact)*

Questions?

For more information about this report, or for any questions relating to your drinking water, please call Cory Burge, Water Plant Superintendent, at (770) 932-7986.

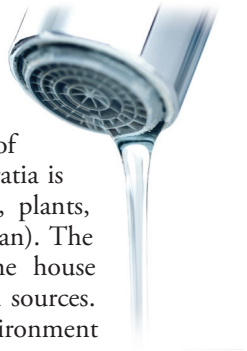
Source Water Assessment

A source water assessment was conducted for the City of Buford in accordance with Georgia's Source Water Assessment and Protection Implementation Plan for Public Drinking Water Sources (2000). The assessment was completed through the Georgia Mountains Regional Development Center (GMRDC) as part of a larger source water assessment plan (SWAP) for the Lake Lanier Basin. The Lanier SWAP was managed with the overall goal of identifying potential risks that may affect the integrity of surface drinking water sources in the basin. Separate assessments were conducted for 13 existing and new municipal surface water intakes, and separate SWAP reports were produced for the nine individual water systems.

The source water assessment area for the City of Buford includes an inner management zone (IMZ) and an outer management zone (OMZ). The IMZ includes the entire subwatershed around Big Creek Cove, areas within a one half-mile buffer all the way around the lake, and all areas within a seven-mile radius from the intake. The OMZ upstream of the intake includes all areas from the inner management zone plus the seven-mile radius from the intake. Several suburbs and urban areas are located within the City of Buford's IMZ and OMZ. Therefore, the types of point source potential contaminant sources (PCSs) identified are somewhat varied and include mostly gas stations, auto repair shops, marinas, and boat repair shops. Most point source PCSs ranked low, and the overall point source susceptibility rating for the intake is low. Of the PCS types that ranked high, the most common were marinas and gas stations. The marinas all ranked high; however, gas stations more often ranked low or medium priority. The high-ranking for gas stations resulted from a particular station's location in relation to water or to the intake. The overall nonpoint susceptibility rating for the intake is medium. The majority of the nonpoint source PCSs ranked medium, with several ranked as high priority. Nonpoint source PCS types receiving a high rating were secondary road crossings or those near streams; sewer systems with a history of spills; septic systems; and urban land use. The watershed vulnerability rating for the Buford intake is low due to watershed size and lake size. Likewise, both the point and nonpoint source PCS/vulnerability analysis resulted in a low priority ranking.

A copy of Buford's source water assessment plan is available for inspection at Buford City Hall, Monday through Friday, 9 a.m. to 5 p.m. You may obtain a copy for $5 from the Georgia Mountains Regional Development Center; call Tiffannie Hill at (770) 538-2626. Or you can download a free copy by going to www.GMRDC.org and following the links to the SWAP Web site.

What Causes the Pink Stain on Bathroom Fixtures?



The reddish-pink color frequently noted in bathrooms on shower stalls, tubs, tile, toilets, sinks, toothbrush holders, and on pets' water bowls is caused by the growth of the bacterium *Serratia marcesens*. Serratia is commonly isolated from soil, water, plants, insects, and vertebrates (including man). The bacteria can be introduced into the house through any of the above-mentioned sources. The bathroom provides a perfect environment (moist and warm) for bacteria to thrive.

The best solution to this problem is to continually clean and dry the involved surfaces to keep them free from bacteria. Chlorine-based compounds work best, but keep in mind that abrasive cleaners may scratch fixtures, making them more susceptible to bacterial growth. Chlorine bleach can be used periodically to disinfect the toilet and help to eliminate the occurrence of the pink residue. Keeping bathtubs and sinks wiped down using a solution that contains chlorine will also help to minimize its occurrence.

Serratia will not survive in chlorinated drinking water.

What type of container is best for storing water?

Consumer Reports has consistently advised that glass or BPA-free plastics such as polyethylene are the safest choices. To be on the safe side, do not use any container with markings on the recycle symbol showing "7 PC" (code for BPA). You could also consider using stainless steel or aluminum with BPA-free liners.

How much emergency water should I keep?

Typically, 1 gallon per person per day is recommended. For a family of four, that would be 12 gallons for 3 days. Humans can survive without food for 1 month, but can survive only 1 week without water.

How long can I store drinking water?

The disinfectant in drinking water will eventually dissipate, even in a closed container. If that container housed bacteria before it was filled with tap water, the bacteria may continue to grow once the disinfectant has dissipated. Some experts believe that water could be stored up to six months before needing to be replaced. Refrigeration will help slow the bacterial growth.

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.

REGULATED SUBSTANCES

				Buford Waterworks		Gwinnett County			
SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	MCL [MRDL]	MCLG [MRDLG]	AMOUNT DETECTED	RANGE LOW-HIGH	AMOUNT DETECTED	RANGE LOW-HIGH	VIOLATION	TYPICAL SOURCE
Bromate (ppb)	2016	10	0	NA	NA	<5.0	<5.0–5.8	No	By-product of drinking water disinfection
Chlorine (ppm)	2016	[4]	[4]	0.99	0.6–1.5	1.74	0.44–2.17	No	Water additive used to control microbes
Fluoride (ppm)	2016	4	4	0.88	0.51–1.21	0.77	0.56–0.96	No	Erosion of natural deposits; Water additive that promotes strong teeth; Discharge from fertilizer and aluminum factories
Haloacetic Acids [HAAs] (ppb)	2016	60	NA	24.9	18.2–39	36	16.1–36.0	No	By-product of drinking water disinfection
Nitrate + Nitrite (ppm)	2016	10	10	0.3	NA	0.37	0.36–0.38	No	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits
TTHMs [Total Trihalomethanes] (ppb)	2016	80	NA	40.3	15.9–51	62.575	15.2–62.575	No	By-product of drinking water disinfection
Total Coliform Bacteria (% positive samples)	2016	5% positive monthly samples	0	0	NA	0.358	NA	No	Naturally present in the environment
Total Organic Carbon (ppm)	2016	TT	NA	1.0	0.95–1.2	1.15	0.91–1.4	No	Naturally present in the environment
Turbidity[1] (NTU)	2016	TT	NA	0.16	0.01–0.16	0.43	NA	No	Soil runoff
Turbidity (Lowest monthly percent of samples meeting limit)	2016	TT = 95% of samples meet the limit	NA	100	NA	99.96	NA	No	Soil runoff

Definitions

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

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.

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).

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

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

				Buford Waterworks		Gwinnett County			
SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	AL	MCLG	AMOUNT DETECTED (90TH%TILE)	SITES ABOVE AL/ TOTAL SITES	AMOUNT DETECTED (90TH%TILE)	SITES ABOVE AL/TOTAL SITES	VIOLATION	TYPICAL SOURCE
Copper (ppm)	2016	1.3	1.3	0.16	0/20	0.12[2]	0/50[2]	No	Corrosion of household plumbing systems; Erosion of natural deposits
Lead (ppb)	2016	15	0	1.4	0/20	1.5[2]	1/50[2]	No	Corrosion of household plumbing systems; Erosion of natural deposits

UNREGULATED SUBSTANCES (BUFORD WATERWORKS)				
Bromodichloromethane (ppb)	2016	4.2	NA	By-product of drinking water disinfection
Chlorodibromomethane (ppb)	2016	0.56	NA	By-product of drinking water disinfection
Chloroform (ppb)	2016	18	NA	By-product of drinking water disinfection
Sodium (ppm)	2016	3.8	NA	Naturally occurring

[1] 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.
[2] Sampled in 2014.