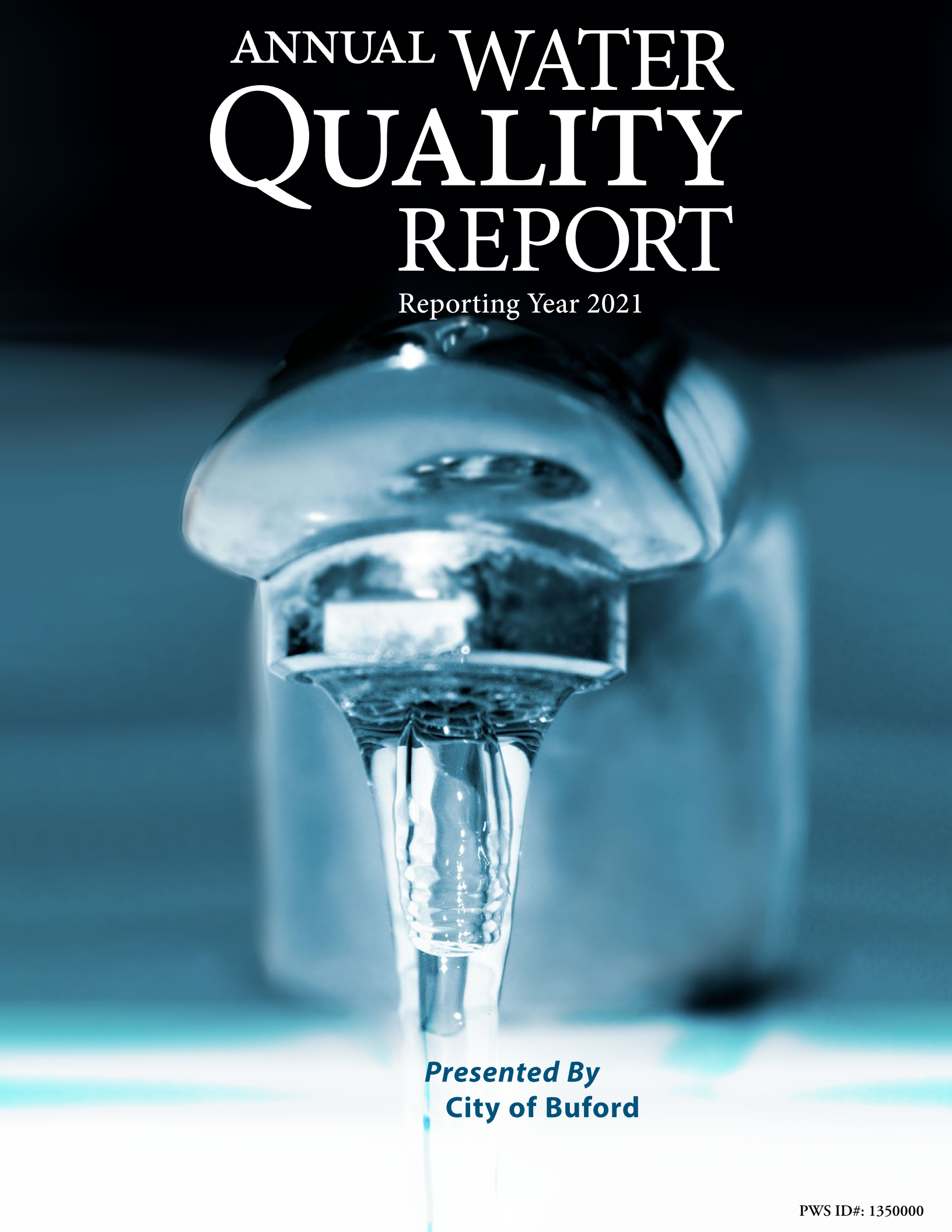
ANNUAL WATER QUALITY REPORT

Reporting Year 2021



Presented By

City of Buford

PWS ID#: 1350000

Quality First

Once again, we are pleased to present our annual water quality report covering all testing performed between January 1 and December 31, 2021. As in years past, we are committed to delivering the best-quality drinking water possible. To that end, we remain vigilant in meeting the challenges of new regulations, source water protection, water conservation, and community outreach and education while continuing to serve the needs of all our water users. Thank you for allowing us the opportunity to serve you and your family. We encourage you to share your thoughts with us on the information contained in this report. After all, well-informed customers are our best allies.

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. It 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.

> "When the well is dry, we know the worth of water."
>
> —*Benjamin Franklin*

The Buford Waterworks was built in 1934 to filter 500,000 gallons of drinking water per day. In 1965 it was expanded to one million gallons per day. In 1994 the plant was rated for two million gallons per day. We plan to grow with the future needs of our citizens. Buford is currently in the process of building a new membrane ultrafiltration water treatment plant, scheduled to be completed in 2023.

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 fed by gravity into the plant, where lime, alum, polymer, and chlorine are added as it passes through a static mixer. The addition of these substances causes small particles (called floc) to adhere to one another, making them heavy enough to settle into a basin, from which sediment is removed. Chlorine is then added for disinfection.

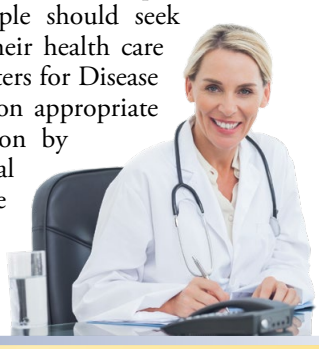
At this point, the water is filtered through layers of fine coal and silicate sand. As smaller suspended particles are removed, turbidity disappears and clear water emerges. Chlorine is added again as a precaution against any bacteria that may still be present. (We carefully monitor the amount of chlorine, 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 and water towers and into your home or business.

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 two 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 at (800) 426-4791 or epa.gov/safewater/lead.

Important Health Information

Some people may be more vulnerable to contaminants in drinking water than the general population. Immunocompromised 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 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 online at water.epa.gov/drink/hotline.



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) 216-4008.

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, which 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.

Tap vs. Bottled

Thanks in part to aggressive marketing, the bottled water industry has successfully convinced us all that water purchased in bottles is a healthier alternative to tap water. However, according to a four-year study conducted by the Natural Resources Defense Council (NRDC), bottled water is not necessarily cleaner or safer than most tap water. In fact, about 40 percent of bottled water is actually just bottled tap water according to government estimates.

The Food and Drug Administration is responsible for regulating bottled water, but these rules allow for less rigorous testing and purity standards than those required by the U.S. EPA for community tap water. For instance, the high mineral content of some bottled waters makes them unsuitable for babies and young children. Further, the FDA completely exempts bottled water that's packaged and sold within the same state, which accounts for about 70 percent of all bottled water sold in the United States.

People spend 10,000 times more per gallon for bottled water than they typically do for tap water. If you get your recommended eight glasses a day from bottled water, you could spend up to $1,400 annually. The same amount of tap water would cost about 49 cents. Even if you installed a filter device on your tap, your annual expenditure would be far less than what you'd pay for bottled water.

For a detailed discussion on the NRDC study results, visit goo.gl/Jxb6xG.

Community Participation

The Buford City Commissioners meet the first Monday of every month at 7:00 p.m. at the Buford City Arena. Your questions and concerns can be heard after the regularly scheduled meetings. For more information, call Buford City Hall at (770) 945-6761, Monday through Friday, from 9:00 a.m. to 5:00 p.m.

What Causes the Pink Stain on Bathroom Fixtures?

The reddish-pink color frequently noted in bathrooms on shower stalls, tubs, tile, toilets, sinks, and 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 humans). The bacteria can be introduced into the house through any of the abovementioned 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.

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. The assessment was completed and updated in 2020 through the Georgia Metropolitan North Georgia Water Planning District 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 sub-watershed around Big Creek Cove, areas within a 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 IMZ 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 (PCS) identified are somewhat varied and include mostly gas stations, auto repair shops, marinas, and boat repair shops.

Most point source PCS 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. High rankings for gas stations resulted from a particular station's location in relation to water or the intake. The overall nonpoint susceptibility rating for the intake is medium. The majority of the nonpoint source PCS 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 SWAP is available for inspection at Buford City Hall, Monday through Friday, from 9:00 a.m. to 5:00 p.m. You may obtain a copy online at northgeorgiawater.org/conserve-our-water/water-supply-in-our-region/.

Definitions

90th %ile: The levels reported for lead and copper represent the 90th percentile of the total number of sites tested. The 90th percentile is equal to or greater than 90% of our lead and copper detections.

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. 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.

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.

Test Results

Our water is monitored for many different kinds of substances on a very strict sampling schedule, and the water we deliver must meet specific health standards. Here, we only show those substances that were detected in our water. Remember that detecting a substance does not mean the water is unsafe to drink; our goal is to keep all detects below their respective maximum allowed levels.

The state recommends monitoring for certain substances less 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)	2021	10	0	NA	NA	1.35	<1–1.7	No	By-product of drinking water disinfection
Chlorine (ppm)	2021	[4]	[4]	0.94	0.4–1.4	2.2	0.27–2.2	No	Water additive used to control microbes
Fluoride (ppm)	2021	4	4	0.77	0.59–0.99	0.80	0.63–0.98	No	Erosion of natural deposits; Water additive which promotes strong teeth; Discharge from fertilizer and aluminum factories
Haloacetic Acids [HAAs]–Stage 2 (ppb)	2021	60	NA	24.8	18.2–32	30	11.6–30	No	By-product of drinking water disinfection
Nitrate (ppm)	2021	10	10	0.3	NA	0.5	0.36–0.63	No	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits
Nitrite (ppm)	2021	1	1	0.3	NA	0.5	0.36–0.63	No	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits
Total Coliform Bacteria (% positive samples)	2021	TT	NA	NA	NA	0.35[1]	NA	No	Naturally present in the environment
Total Coliform Bacteria (positive samples)	2021	TT	NA	0[2]	NA	NA	NA	No	Naturally present in the environment
Total Organic Carbon (ppm)	2021	TT[3]	NA	1.1	0.99–1.2	1.05	0.88–1.3	No	Naturally present in the environment
TTHMs [total trihalomethanes]–Stage 2 (ppb)	2021	80	NA	39	18.2–58.6	68	10.8–68	No	By-product of drinking water disinfection
Turbidity[4] (NTU)	2021	TT	NA	0.08	0.01–0.08	0.24	NA	No	Soil runoff
Turbidity (lowest monthly percent of samples meeting limit)	2021	TT = 95% of samples meet the limit	NA	100	NA	100	NA	No	Soil runoff

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 %ILE)	SITES ABOVE AL/ TOTAL SITES	AMOUNT DETECTED (90TH %ILE)	SITES ABOVE AL/ TOTAL SITES	VIOLATION	TYPICAL SOURCE
Copper (ppm)	2019	1.3	1.3	0.14	0/20	0.17[5]	0/50[5]	No	Corrosion of household plumbing systems; Erosion of natural deposits
Lead (ppb)	2019	15	0	ND	0/20	1.2[5]	0/50[5]	No	Corrosion of household plumbing systems; Erosion of natural deposits

UNREGULATED SUBSTANCES (BUFORD WATERWORKS)

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	AMOUNT DETECTED	RANGE LOW-HIGH	TYPICAL SOURCE
Bromodichloromethane (ppb)	2021	5.1	NA	By-product of drinking water disinfection
Chloroform (ppb)	2021	22	NA	By-product of drinking water disinfection
Dibromochloromethane (ppb)	2021	0.68	NA	By-product of drinking water disinfection

[1] 287 samples taken monthly.
[2] Nine samples taken monthly.
[3] The value reported under Amount Detected for TOC is the lowest ratio between percentage of TOC actually removed to the percentage of TOC required to be removed. A value of greater than 1 indicates that the water system is in compliance with TOC removal requirements. A value of less than 1 indicates a violation of the TOC removal requirements.
[4] 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.
[5] Sampled in 2020.