Notes About Contaminants

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, can pick up substances resulting from the presence of animal or human activity. Contaminants that may be present in source water include:

Microbial contaminants, such as viruses and bacteria which may come from septic systems, agriculture livestock operations, wildlife and sewage treatment plants.

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 can also come from gas stations, urban stormwater runoff and septic systems.

Inorganic contaminants, such as salts and metals, which can be naturally occurring or result from urban storm runoff, industrial or domestic wastewater discharges, oil or gas production, mining or farming.

Radioactive contaminants, such as Radon, which can be naturally occurring or be the result of oil and gas production and mining activities.

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

Contaminants and Health Risks

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.

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 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.

For More Information...

For additional information or questions about this report, contact the Gwinnett County Department of Public Utilities Environmental Laboratory at 770-614-2080. Director of Water Production, Neal C. Spivey, may be reached at 770-904-3200. Tours of the Lanier Filter Plant are available for school groups and individuals by calling 770-904-3200.

A Note About Lead

Infants and young children are typically more vulnerable to lead in drinking water than the general population. It is possible that lead levels at your home may be higher than at other homes in your community as a result of materials used in your home's plumbing.

If you are concerned about elevated lead levels in your home's water, you may wish to have your water tested. You may also flush your tap water for 30 seconds to two minutes before using it.

Additional information is available from the **Safe Drinking Water Hotline**, 800-426-4791.

What is Cryptosporidium?

Cryptosporidium (Crypto) is a one-celled parasitic protozoan often found in water sources that receive runoff from animal waste. Crypto can infect humans and have severe impacts on certain people, including organ transplant recipients, immunocompromised persons, young children and persons undergoing cancer treatment.

Public Utilities has a monthly sampling and analysis program for Crypto and Giardia, another protozoan often found in water. Samples of both lake water and finished drinking water are analyzed each month. Crypto and Giardia both form cysts when the environment is unfavorable for their survival. During 2005, all Giardia and Crypto samples were "none detected". This test program is ongoing.

Este informe contiene informacion muy importante. Traduscala o hable con alguien que lo pueda entender.

Gwinnett Water Words

March 2006

A Water Quality Report presented to the Citizens of Gwinnett County

by Gwinnett County Department of Public Utilities

Lake Lanier Provides Excellent Water Source

Gwinnett County receives its surface water supply from Lake Sidney Lanier located just north of Buford. Our water intakes, located in coves three miles from Buford Dam, provide a uniform raw water supply that is low in suspended materials, bacteria, dissolved organics and metals.

Lake Lanier, formed by Buford Dam holding the Chattahoochee and Chestatee Rivers, is a major recreation area in North Georgia. In fact, it is one of the most-visited Corps of Engineers projects in the country, offering opportunities for boating, fishing and other water pastimes. People throughout the region enjoy Lanier and the plentiful recreation opportunities it offers.

Lake Lanier is key in providing water to Georgia, since more than 60% of Georgia's population receives drinking water from the Chattahoochee system. The Lake Lanier watershed comprises more than 1000 square miles in 10 Georgia counties. The watershed contains heavily forested areas and smaller cities. Additionally, agriculture is the primary activity in the watershed.

Public Input Opportunities

The Gwinnett County Water and Sewerage Authority, which owns the Public Utilities water and wastewater system, acts as an advisory agency to the Gwinnett County Board of Commissioners. The Water and Sewerage Authority is composed of five members, appointed by each District Commissioner and the Chairman. The Authority meets monthly at the DPU Central Facility. For a schedule of meetings, call 678-376-7134 or visit the County's website at www.gwinnettcounty.com

Additionally, advisory panels meet to publicly discuss pertinent water and wastewater issues. These panels include representatives from different caucuses in Gwinnett County. Advisory panel meetings are held throughout the year and are open to the public. For more information on meeting dates, please call 678-376-7134.

www.gwinnettcounty.com

Water Production Facilities

Gwinnett County is served by two water production facilities-the Lanier Filter Plant, built in 1977, and the Shoal Creek Filter Plant, which was placed in operation in 2004. There are two separate raw intake and pump stations located on the shore of Lake Lanier. Each raw water intake can furnish water to both treatment plants, providing tremendous redundancy and reliability for the water system.

Gwinnett County facilities are somewhat unique in that we se Ozone as the primary disinfection process. Ozone is the most powerful disinfectant that can be used in water treatment to kill bacteria and inactivate viruses and protozoans, as well as reduce disinfection by-products. These modern, state of the art facilities are operated and controlled by way of a computer system, known as SCADA (Supervisory Control And Data Acquisition). Water storage tanks and booster pump stations throughout the County are operated remotely from Buford using SCADA. Combined capacity of both plants is 225 million gallons per day, which will likely meet Gwinnett's needs for at least the next 10 years.

Both of Gwinnett's facilities were nominated for the Best Operated Water Plant in Georgia in 2005.

Gwinnett Water Facts:

- **Gwinnett County citizens and businesses consumed more than 29 billion gallons of water in 2005, an average of 80.7 million gallons a day.**
- **Gwinnett maintains more than 3,308 miles of water pipes.**
- **Gwinnett's water system currently serves approximately 222,000 accounts.**

Detected Contaminants Table

Water Source: Lake Lanier **Water System # 1350004** **Period Covered: 2005**

Lead & Copper Monitoring Results	Action Level	MCLG	Water System Results	# of sample sites found above the Action Level	Violation (yes/no)	Source of substance
Copper	1.3 ppm	1.3 ppm	0.160 ppm	0	no	Corrosion of household plumbing systems, erosion of natural deposits; leaching from wood preservatives.
Lead	15 ppb	0 ppb	2.7 ppb	1	no	Corrosion of household plumbing systems, erosion of natural deposits.

Primary Inorganic Substance	MCL	MCLG	Water System Results	Range of Detections	Violation (yes/no)	Source of substance
Fluoride	4.0 ppm	4.0 ppm	0.87 ppm	0.20–1.26	no	Erosion of natural deposits; water additive that promotes strong teeth; discharge from fertilizer and aluminum factories.
Nitrate/Nitrite	10.0 ppm	10.0 ppm	0.27 ppm	<0.20-0.27	no	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits.

Volatile Organic Substances Unregulated	MCL	MCLG	Highest Level Detected	Violation (yes/no)	Source of substance
Bromodichloro-methane	none established	none established	1.9 ppb	no	By-product of drinking water chlorination.
Chloroform	none established	none established	5.9 ppb	no	By-product of drinking water chlorination.

Substance	MCL	MCLG	Average	Violation (yes/no)	Range of Detections	Source of substance
Total Trihalomethanes	80 ppb	0.0	20.0 ppb	no	6.5 – 40.8	By-product of drinking water chlorination.
Total Haloacetic Acids	60 ppb	0.0	16.5 ppb	no	8.9 - 28.2	By-product of drinking water chlorination.
Bromate	0.01 ppm	0.0	0.005 ppm	no	0.004 - 0.010	By-product of drinking water chlorination.

Substance	MCL	MCLG	Highest Monthly % of Positive Samples	Major Sources in Drinking Water
Total Coliform Bacteria	No more than 5% of monthly samples can test positive for Coliforms	0.0	0.8	Naturally present in the environment.

Turbidity	Units	MCL	MCLG	Highest Value Reported	Lowest % of Samples Meeting Limits	Violation (yes/no)
Source: Soil Runoff	NTU	TT	n/a	0.480	99.19	no

Water Treatment Process and Water Quality

Because of the excellent water quality of water from Lake Lanier, Gwinnett is able to utilize what is known as a direct filtration process for purification. Incoming water is first disinfected with Ozone, an extremely powerful oxidant that kills bacteria, inactivates viruses and protozoans, and oxidizes naturally occurring organic compounds found in surface waters. Following Ozonation, two chemicals known as coagulants are added to facilitate removal of suspended matter from the water. These chemicals are Ferric Chloride and a liquid Cationic Polymer. Immediately after addition of these chemicals a short (one minute), intense mixing process takes place, followed by a slower, more gentle mix period of 15 minutes. This process is called flocculation. After flocculation, water moves to the filtration step. Filters consist of four feet of anthracite, sitting on top of one foot of sand. The filter media (the sand and anthracite) is made up of very specific sized grains to achieve maximum removal of suspended material.

After filtration, water receives its final chemical application on its way to on-site storage, until it is pumped into the water distribution system. Gwinnett uses Chlorine as the final disinfectant. State and federal Safe Drinking Act regulations require that a disinfectant residual be maintained throughout the water distribution system. Typical Chlorine residuals are 1.8-2.0 mg/l, leaving the water treatment plant. Residuals gradually decrease through the distribution system. Georgia law requires Fluoridation of drinking water to prevent dental caries in children. Naturally occurring Fluoride in waters in this part of the State are 0.3-0.4 mg/l. Enough Fluoride is added at the water treatment plant to bring the Fluoride level to 0.8 mg/l, a concentration recommended by the American Dental Association. Water from Lake Lanier is very "soft", meaning that it has low levels of dissolved minerals. Soft water is also very corrosive, and steps are taken to reduce this corrosivity, using a phosphate-based corrosion inhibitor. The corrosion inhibitor (an ortho/polyphosphate blend) minimizes corrosion of metal pipes and plumbing fixtures. Corrosion inhibitors are most effective in a pH range of 7.2-7.5 units. Water from Lake Lanier is usually slightly acidic, with a pH of about 6.8. Finished water pH is adjusted to 7.2 units (just slightly basic) with a liquid Lime (Calcium Hydroxide) product.

Definitions

What are PPM and PPB? ..... Simply put, "ppm" means "parts per million" and "ppb" means "parts per billion." PPM corresponds to one penny in $10,000 or one minute in two years. PPB corresponds to one penny in $10,000,000 or one minute in 2,000 years.

Maximum Contaminant Level Goal (MCLG) ..... The level of a known contaminant in drinking water below which there is no known or expected risk to health. MCLGs 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.

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

NTU ..... Nephelometric Turbidity Units, which are a measure of suspended material in water. Turbidity is measured by shining a beam of light through water and measuring the angle at which the light is scattered by the suspended material. An instrument called a Turbidimeter is used for this purpose.

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