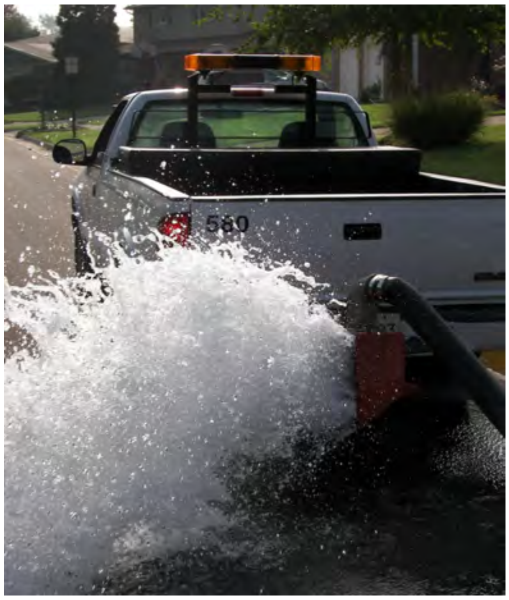
2016 Drinking Water Consumer Confidence Report

City of Gahanna



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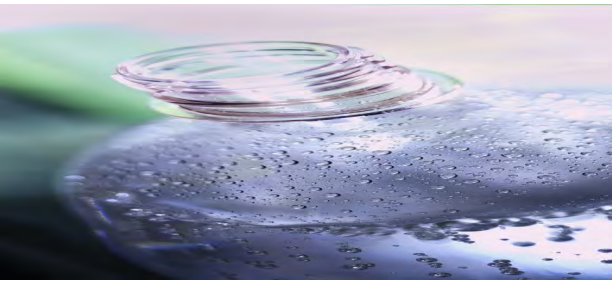
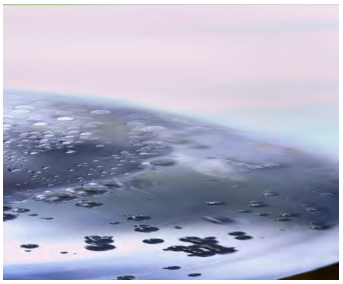




Overview

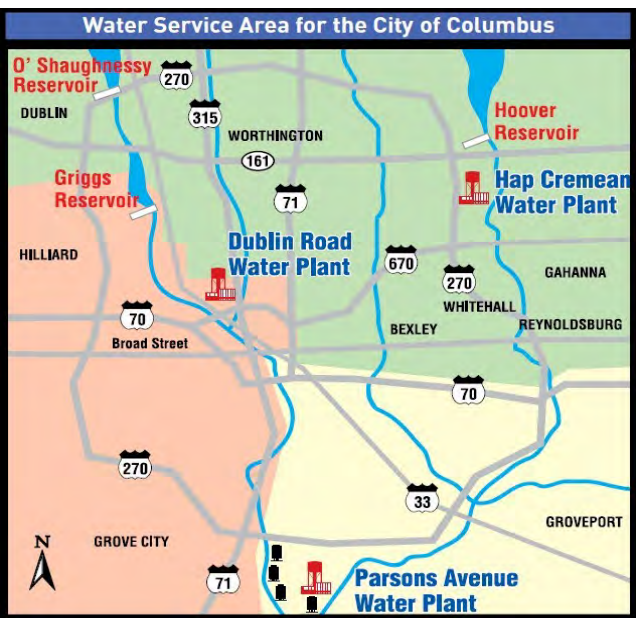
The goal of the Department of Public Service and Engineering is to ensure that any contaminants in your drinking water are restricted below a level at which there is no known health risk and properly distribute quality water in a manner that is consistent with the Environmental Protection Agency (EPA). The Safe Drinking Water Act (SDWA) requires that drinking water quality information be made available to the public. The City of Gahanna Department of Public Service and Engineering has prepared the following report to provide information to you, the consumer, on the quality of the drinking water. Included within this report is general health information, water quality test results and water system contacts.

SERVING CITIZENS SINCE

1849

Source Water Information

The City of Gahanna receives its drinking water from the City of Columbus' Hap Cremean Water Plant (HCWP) located on Morse Rd. The water source for the HCWP is the Hoover Reservoir via the Big Walnut Creek. The City of Columbus Division of Water conducted a source water assessment as part of its on-going efforts to maintain regulatory compliance and monitor the water supply. It was determined that the Big Walnut Creek supplying water to the HCWP has a relatively high susceptibility to contamination from spills or releases of chemicals. This conclusion is based on the presence of numerous potential contaminant sources, primarily agricultural runoff, in the drinking water source protection area. The City of Columbus treats the water to meet drinking water quality standards; however, no single treatment protocol can address all potential contaminants. Therefore, the City of Columbus has been proactive in pursuing measures to further protect the source water through land stewardship programs and incentive-driven programs to reduce erosion and runoff of pesticides and fertilizers. Please contact the City of Columbus Watershed Section at 614-645-1721 if you would like more information about the assessment report.



License to Operate (LTO) Status Information

In 2016, the City of Gahanna had an unconditioned license to operate its water system.

Photo Left:

Dublin Road Water Plant (DRWP): Serves northwestern and southwestern residents. The water source is the Griggs Reservoir and O'Shaughnessy Reservoir.

Hap Cremean Water Plant (HCWP): Serves OSU and northern residents. The water source is the Hoover Reservoir via the Big Walnut Creek.

Parsons Avenue Water Plant (PAWP): Serves southeastern residents. The water source is water wells.

Source: City of Columbus Department of Public Utilities, www.columbus.gov/publicutilities

Sources of Contamination to Drinking Water

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, in some cases, radioactive material and can pick up substances resulting from the presence of animals or from human activity.

Contaminants that may be present in source water include: (A) Microbial contaminants, such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations and wildlife; (B) Inorganic contaminants, such as salts and metals, which can be naturally occurring or result from urban stormwater runoff, industrial or domestic wastewater discharges, oil and gas production, mining or farming; (C) Pesticides and herbicides, which may come from a variety of sources such as agriculture, urban stormwater runoff and residential uses; (D) 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; (E) Radioactive contaminants, 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 U.S. Environmental Protection Agency (USEPA) prescribes regulations which limit the amount of certain contaminants in water provided by public water systems. Food and Drug Administration (FDA) 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 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 USEPA's Safe Drinking Water Hotline at 1-800-426-4791.

Who Needs to Take Special Precautions?

Some people may be more vulnerable to contaminants in drinking water than the general population. Immunocompromised individuals 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 infection. These people should seek advice about drinking water from their health care providers. EPA and Centers for Disease Control and Prevention (CDC) guidelines on appropriate means to lessen the risk of infection by cryptosporidium and other microbial contaminants are available from the USEPA's Safe Drinking Water Hotline at 1-800-426-4791.

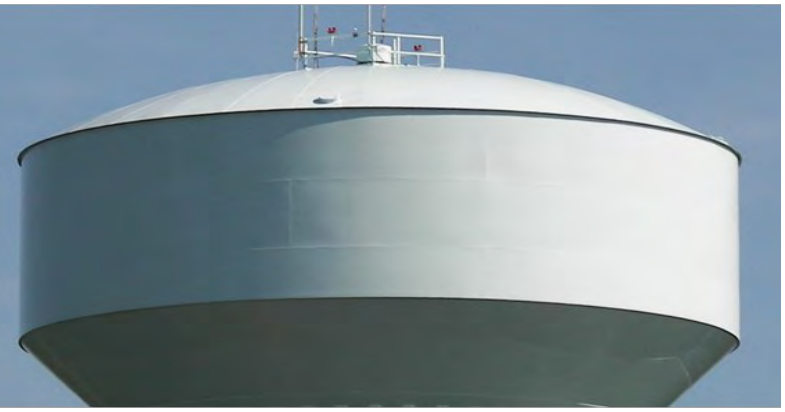
Water Quality Monitoring

The EPA and Safe Drinking Water Program establish the regulations that limit the amount of contaminants allowed in drinking water and require regular sampling to ensure drinking water safety. The Ohio EPA requires some contaminants to be sampled less than once per year due to the fact that the concentrations of these contaminants do not change frequently. Therefore some of the data, though accurate, may be more than one year old. The table below shows the sampling results performed by the City of Columbus at the Hap Cremean Water Plant and the City of Gahanna during 2016. It illustrates the concentrations of detected contaminants in comparison to the regulatory limits.

Table of Detected Contaminants	Sample Year	What's Allowed? Maximum Contaminant Level (MCL)	What's the Goal? Maximum Contaminant Level Goal (MCLG)	Level Found	Range of Detection	Violation	Where Did It Come From? (Typical Source of Contaminant)
HAP CREMEAN WATER PLANT							
INORGANIC CONTAMINANTS							
Fluoride (ppm)	2016	4	4	0.92	0.71 - 1.01	No	Erosion of natural deposits, water additive which promotes strong teeth and discharge from fertilizer and aluminum factories
Nitrate (ppm)	2016	10	10	1.5	< 0.7 - 1.5	No	Runoff from fertilizer use, leaching from septic tanks or sewage and erosion of natural deposits
MICROBIOLOGICAL CONTAMINANTS							
Total Organic Carbon	2016	TT (removal ratio > 1)	No goal set	2.57	2.11 - 4.03	No	Naturally present in the environment
Turbidity (NTU)	2016	TT (< 1 NTU)	No goal set	0.14	0.04 - 0.14	No	Soil runoff
Turbidity (% meeting standard)	2016	TT (> 95%)	No goal set	100%	100% - 100%	No	Soil runoff
SYNTHETIC ORGANIC CONTAMINANTS							
Alachlor (ppb)	2016	2	0	< 0.20	< 0.20- 0.23	No	Runoff from herbicide used on row crops
Atrazine (ppb)	2016	3	3	0.10	< 0.10 - 0.29	No	Runoff from herbicide used on row crops
Simazine (ppb)	2016	4	4	0.10	< 0.10 - 0.28	No	Herbicide runoff
UNREGULATED CONTAMINANTS							
Metolachlor (ppb)	2016	No set level	No goal set	< 0.20	< 0.20 - 0.28	No	Herbicide runoff
Metribuzin (ppb)	2016	No set level	No goal set	< 0.10	< 0.10 - 0.12	No	Herbicide runoff
CITY OF GAHANNA							
INORGANIC CONTAMINANTS							
Asbestos[1] (mfl)	2011	7	7	< 0.2	N/A	No	Decay of asbestos cement water mains and erosion of natural deposits
Copper[1] (ppm)	2015	1.3	1.3	0.072	< 0.050 - 0.084 (0 of 34 sites above AL)	No	Corrosion of household plumbing systems and erosion of natural deposits
Lead[1] (ppb)	2015	15	0	< 5.0	< 5.0 - 25.1 (1 of 34 sites above AL)	No	Corrosion of household plumbing systems and erosion of natural deposits
MICROBIOLOGICAL CONTAMINANTS							
Total Coliform Bacteria	2016	Present in < 5% of monthly samples	0%	0%	N/A	No	Naturally present in the environment
RESIDUAL DISINFECTANTS							
Total Chlorine (ppm or mg/L)	2016	4 (MRDL)	4 (MRDLG)	1.67	1.36 - 1.79	No	Water additive used to control microbes
UNREGULATED CONTAMINANT MONITORING RULE 3 (UCMR 3) [2]							
Chromium (ppb)	2014	No set level	No goal set	0.31	0.21 - 0.45	No	Discharge from steel and pulp mills and erosion of natural deposits
Hexavalent Chromium (ppb)	2014	No set level	No goal set	0.19	0.16 - 0.25	No	Chrome plating, dyes and pigments and wood preservation
Molybdenum (ppb)	2014	No set level	No goal set	5.9	3.9 - 7.7	No	Naturally occurring element found in ores and present in plants, animals and bacteria
Strontium (ppb)	2014	No set level	No goal set	164	150 - 180	No	Naturally occurring element
Vanadium (ppb)	2014	No set level	No goal set	0.48	0.34 - 0.68	No	Naturally occurring elemental metal
VOLATILE ORGANIC CONTAMINANTS							
Total Haloacetic Acids, HAA5 (ppb)	2016	60	No goal set	54	28.1 - 50.4	No	By-product of drinking water chlorination
Total Trihalomethanes, TTHM (ppb)	2016	80	No goal set	58	29.4 - 54.8	No	By-product of drinking water chlorination

1. Asbestos testing has been scheduled for 2020. The next lead and copper testing is scheduled for 2018.
2. In 2014 the City of Gahanna Department of Public Service and Engineering was required to participate in the Unregulated Contaminant Monitoring Rule 3 (UCMR 3). Unregulated contaminants are those for which EPA has not established drinking water standards. The purpose of unregulated contaminant monitoring is to assist the EPA in determining the occurrence of unregulated contaminants in drinking water and whether future regulation is warranted.

Unidirectional Flushing



The City of Gahanna Department of Public Service and Engineering completed another year of unidirectional waterline flushing. This is a systematic and controlled procedure that uses water at a high velocity to remove sedimentation, improve water quality and increase the flow efficiency within the waterlines of the distribution system. Specific valves on each waterline are closed to allow the water to flow quickly through the pipes and exit a specified hydrant. The fast moving water removes sediment and stale water out the waterlines. This preventative maintenance technique is endorsed and encouraged by the Ohio EPA. Waterline flushing occurred in the northwest, central and northeast quadrants of Gahanna in 2016.

Definitions

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

Greater Than Symbol (>): A symbol which means greater than.

Less Than Symbol (<): A symbol which means less than. A result of < 5 means that the lowest level that could be detected was 5 and the contaminant in that sample was not detected.

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.

Maximum Contaminant Level Goal (MCLG): 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.

Maximum Residual Disinfectant Level (MRDL): 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.

Maximum Residual Disinfectant Level Goal (MRDLG): The level of 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.

MFL: Million fibers per liter

ND: Not detected

Nephelometric Turbidity Unit (NTU): A measure of particles held in suspension in water.

Parts per Billion (ppb) or Micrograms per Liter (µg/L): Unit of measure for concentration of a contaminant. A part per billion corresponds to one second in a little over 31.7 years.

Parts per Million (ppm) or Milligrams per Liter (mg/L): Unit of measure for concentration of a contaminant. A part per million corresponds to one second in a little over 11.5 days.

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

Total Organic Carbon

The value reported under "Level Found" in the table of detected contaminants for total organic carbon (TOC) is the lowest running annual average ratio between the percentage of TOC actually removed to the percentage of TOC required to be removed. A value greater than one indicates that the water system is in compliance with TOC removal requirements. A value less than one indicates a violation of the TOC removal requirements. The value reported under "Range of Detection" for TOC is the lowest monthly ratio to the highest monthly ratio.

Turbidity

Turbidity is a measure of the cloudiness of water and is an indication of the effectiveness of the filtration system. The turbidity limit set by the EPA is 0.3 NTU in 95% of the daily samples and shall not exceed 1 NTU at any time. As reported in the table of detected contaminants, the highest recorded turbidity result for 2016 for water supplied to Gahanna (by Columbus' Hap Cremean Water Plant) was 0.14 NTU and the lowest monthly percentage of samples meeting the turbidity standard was 100%.

Nitrate

Nitrate in drinking water at levels above 10 ppm is a health risk for infants less than six months of age. High nitrate levels in drinking water can cause blue baby syndrome. Nitrate levels may rise quickly for short periods of time because of rainfall or agricultural activity. Local television, radio and print media will be notified within 24 hours if the level of nitrate rises above 10 ppm. The media will similarly be notified once the level decreases. If you are caring for an infant you should seek advice from your health care provider. None of the water supplied to Gahanna (by Columbus' Hap Cremean Water Plant) exceeded the nitrate maximum contaminant level (MCL) in 2016.

Lead

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. The City of Gahanna Department of Public Service and Engineering is responsible for providing high quality drinking water, but cannot control the variety of materials used in private 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 USEPA's Safe Drinking Water Hotline at 1-800-426-4791 or online at www.epa.gov/safewater/lead. None of the water supplied to Gahanna (by Columbus' Hap Cremean Water Plant) exceeded the lead action level in 2016.

Cryptosporidium

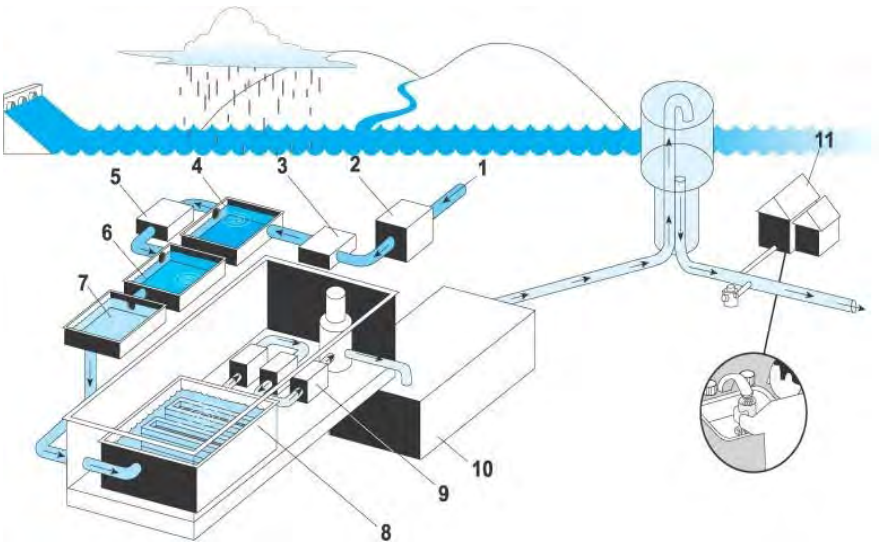
Cryptosporidium is a microbial pathogen found in surface water throughout the United States. It must be ingested to cause disease, and it may be spread through means other than drinking water. Symptoms of infection include nausea, diarrhea and abdominal cramps. Most healthy individuals can overcome the disease within a few weeks. However, immunocompromised individuals are at greater risk of developing a life threatening illness. These people should consult their doctor regarding appropriate precautions to avoid infection.

Although filtration removes cryptosporidium, the most commonly used filtration methods cannot guarantee 100% removal. Monitoring of source water and/or finished water indicate the presence of these organisms. In 2016, Cryptosporidium was detected in 3 of 24 raw water samples collected from the Big Walnut Creek and was not detected in finished water samples collected from the Hap Cremean Water Plant treated water. Current test methods do not enable it to be determined if the organisms are dead or if they are capable of causing disease.

Water Treatment Process

1. Water flows from the reservoir or stream to the treatment plant.
2. It passes through rotating screens that remove large debris.
3. Water is then pumped into the plant where alum is added to cause coagulation.
4. After rapid mixing, the water remains in a settling basin while sedimentation of residual matter/floc occurs (2-4 hrs). The settled floc is pumped from the bottom of the pools and stored in holding lagoons to dry.
5. The water is softened by adding sodium carbonate (soda ash) or caustic soda and hydrated lime. This removes calcium and magnesium ions that are responsible for water hardness. This process takes an additional 2-4 hours. For each pound of chemical used in the treatment process, two pounds are removed.
6. After an additional sedimentation process, carbon dioxide is added to lower the pH level to approximately 7.8.
7. Ozone is then added to the water to reduce dissolved organic matter.
8. Water then flows through large biologically active filters made up of granular activated carbon to remove any remaining particles and further reduce dissolved organic matter.
9. Chlorine is added to the water to disinfect. Fluoride to protect teeth and a corrosion inhibitor are also added.
10. Water is held in large underground clearwells until it is needed by the community.
11. Water is delivered to customer as needed.

Please Note: Steps 2-4 and 7 are not needed when ground water is used.

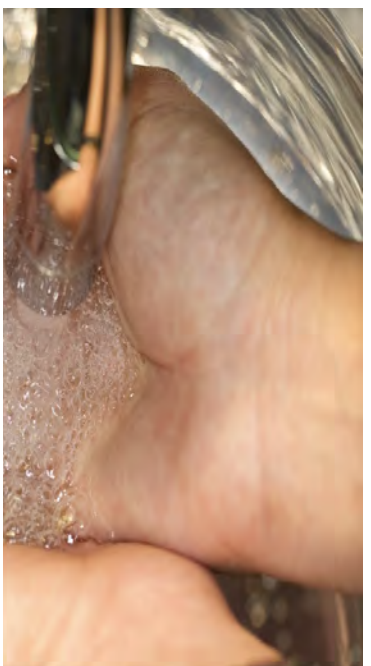


Water Treatment Process: *1. Inflow 2. Large debris removal 3. Coagulation 4. Sedimentation 5. Softening 6. pH lowered to 7.8 7. Stabilization 8. Filtration 9. Disinfection 10. Holding tanks 11. Delivery to customer*

Water Quality Assurance

The City of Columbus' Water Quality Assurance Laboratory (WQAL) is a large modern water lab with a long history of distinguished public service starting under the noted water quality chemist Charles Hoover. The lab continues to maintain that tradition of excellence and technical innovation in the ongoing use of state-of-the-art equipment for water analysis, while continuing to research the latest advancements in water treatment techniques.

The WQAL performs water quality monitoring and treatment research to ensure that Columbus' drinking water meets or is better than all federally mandated Safe Drinking Water Act (SDWA) standards. The WQAL also provides water quality information to the water treatment plants (along with master meter cities such as Gahanna) and addresses customer complaints and inquiries regarding water quality. In 2016, the WQAL's EPA licensed and certified laboratory staff completed over 40,000 analyses relating to 29 different organic, inorganic and microbiological water quality parameters.



To maintain compliance with current SDWA regulations, WQAL activities in 2016 were again directed at developing information regarding new and upcoming rules. These include the Unregulated Contaminant Monitoring Rule (UCMR), Stage 2 of the Disinfectant/Disinfection Byproducts Rule (D/DBP) and the Long Term 2 Enhanced Surface Water Treatment Rule (LT2ESWTR). Additionally, the lab has been closely involved in planning the improvement of watershed and water distribution system surveillance and detection measures for security concerns in the wake of the 9/11 attacks and the associated heightened security protocols.

As with the WQAL staff, the State of Ohio licenses and certifies the water plant operators who are charged with running and maintaining each of the three water treatment plants. These operators also perform the critical task of treatment and process monitoring to insure the water leaving the plant is of the highest quality. In order to stay current in the ever-changing technical field of water purification, these operators spend many hours of continuing education in the classroom every year.

Source: City of Columbus Department of Public Utilities, www.columbus.gov/publicutilities

Contact and Further Information

If you have questions regarding any of the information contained in this report, contact City of Gahanna Water Resources Engineer, Jeff Feltz, at 614-342-4005.
This report can also be found on the City's website at:
www.gahanna.gov/Uploads/Documents/PDFs/Service/Dept-News-Feed/CCR/CCR-2016.pdf.

More detailed information on common water quality concerns and the water treatment process can be found on the City of Columbus Department of Public Utilities website at:
www.columbus.gov/publicutilities.

CITY OF GAHANNA
DEPARTMENT OF PUBLIC SERVICE AND ENGINEERING

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The mission of the Department of Public Service and Engineering is to continually strive to improve service to residents through open, honest communication, top-notch infrastructure, building and equipment maintenance, and the refusal to allow the department to settle into complacency.