2021

Water for Living

Drinking Water
Consumer Confidence Report
City of Columbus, Ohio

HOW TO CONTACT US

For additional information or questions about Columbus water quality please call the Water Quality Assurance Lab at 614-645-7691, or visit our website at www.columbus.gov/drinkingwater/.

For questions involving billing, accounts, service calls, bill payments, and additional CCR copies please contact Customer Service at: 614-645-8276.

For questions involving water emergencies, waterline breaks, hydrant damage or leaks, please contact Distribution Maintenance at: 614-645-7788.

We're interested in your questions and concerns about your water. The Sewer and Water Advisory Board meetings are open to the public. Call 614-645-6141 for a schedule of meeting times and dates.

Call 311 for City Services or 614-645-3111, or visit the web at https://311.columbus.gov/.

THE CITY OF
COLUMBUS

DEPARTMENT OF
PUBLIC UTILITIES

Division of Water
910 Dublin Road
Columbus, OH 43215

www.columbus.gov/utilities/

City of Columbus
Andrew J. Ginther, Mayor

Department of Public Utilities

Division of Water
Danella D. Pettenski, P.E., Administrator

OhioEPA
Division of Drinking and Ground Waters
Certified

The City of Columbus has a current, unconditioned license to operate our public water system.

YOUR 2021 WATER QUALITY REPORT

The goal of the Division of Water is to ensure that any contaminants in your drinking water are restricted below a level at which there is no known health risk. This report shows the types and amounts of key elements in your water supply, their likely sources and the maximum contaminant level (MCL) that the EPA considers safe. The water delivered to your home meets ALL of the requirements of the Safe Drinking Water Act (SDWA). We use a complex multi-barrier treatment process to assure safe drinking water is delivered to our customers. If for any reason the standards are not met, the public will be notified.

Please share this information with other people who drink this water, especially those who may not have received it directly (for example, people in apartments, nursing homes, schools and businesses). You can do so by posting this report in a public place or distributing copies by hand or mail. You can request additional copies by calling customer service at 614-645-8276, emailing to utilityleadrep@columbus.gov, or viewing online at www.columbus.gov/CCR.

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 plants and addresses customer complaints and inquiries regarding water quality. In 2021, the WQAL's EPA licensed and certified laboratory staff completed over 60,000 analyses relating to 33 different organic, inorganic, and microbiological water quality parameters.

To maintain compliance with current SDWA regulations, WQAL activities in 2021 were again directed at the National Primary Drinking Regulations, the Interim Enhanced Surface Water Treatment Rule, the Lead and Copper Rule, 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 and to maintain 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 plants. These operators also perform the critical task of treatment and process monitoring to insure that 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.

These operators, the Water Quality Assurance Laboratory staff, and all of the Division of Water employees are dedicated to providing WATER, a life-sustaining resource, for the well-being and economic vitality of the community. This is our mission.

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THE CITY OF COLUMBUS
ANDREW J. GINTHER, MAYOR

DEPARTMENT OF PUBLIC UTILITIES

Division of Water
910 Dublin Road
Columbus, OH 43215
www.columbus.gov/utilities/

30% Post-Consumer Waste

EPA's National Primary Drinking Water Regulation for Consumer Confidence Reports requires that we produce and deliver this report to all of our customers annually.

SOURCE WATER ASSESSMENT INFORMATION

A high-quality source water supply allows the Division of Water to provide consumers with quality water at a reasonable cost. Protecting our raw water sources requires investments to secure the needs of a growing population, now and in the future. As part of its on-going efforts to maintain regulatory compliance and monitor our water supply, the Division of Water has completed two Source Water Assessment Plans – one for groundwater and one for surface water. Both plans are endorsed by the Ohio Environmental Protection Agency (OEPA) as an effective source water protection strategy. Below is a synopsis of the results:

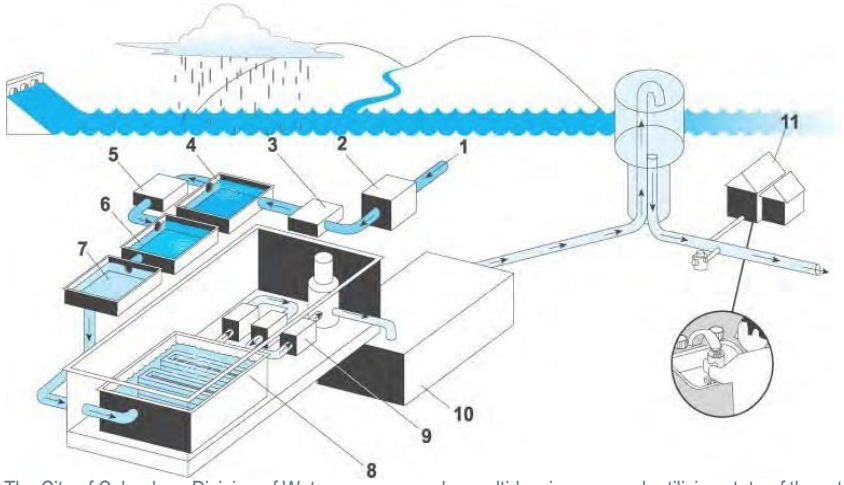
The City of Columbus water system uses surface water from the Scioto River and Big Walnut Creek, as well as ground water pumped from sand and gravel deposits of the Scioto River Valley. All three sources of water have a relatively high susceptibility to contamination from spills or releases of chemicals. The ground water pumped at the Parsons Avenue plant is susceptible (compared to other ground water systems) because there is no significant clay overlying and protecting the aquifer deposits. The Scioto River and Big Walnut Creek are even more susceptible because they are more accessible and less protected from spills.

The drinking water source protection areas for the City of Columbus' three water sources contain numerous potential contaminant sources, especially the protection area for the Dublin Road Water Plant (extending along the Scioto River). These include industrial activities, storm water runoff from developing areas, and a heavily traveled transportation network running alongside and over the water bodies. Run-off from agricultural fields is a concern in both the Scioto River and Big Walnut Creek watersheds.

The City of Columbus treats the water to meet drinking water quality standards, but no single treatment protocol can address all potential contaminants. The City has been proactive in pursuing measures to further protect its source waters. These include land stewardship programs and incentive-driven programs to reduce erosion and run-off of pesticides and fertilizers into the Scioto River and Big Walnut Creek and their reservoirs. A summary of Columbus' Drinking Water Source Assessment Report can be viewed by calling the Watershed section at 614-645-1721. Visit www.columbus.gov/watershed/ for more details about watershed management and the land stewardship program.

Less than 1% of the world's fresh water supplies are available for human consumption.

THE WATER TREATMENT PROCESS



The City of Columbus, Division of Water uses a complex multi-barrier approach utilizing state of the art equipment and the latest treatment technologies.

Water flows (1) to the treatment plant from the reservoir or stream through rotating screens (2) to remove large debris. It is then pumped into the plant where alum is added (3) to cause coagulation. After rapid mixing, the water remains in the settling basin (4) while sedimentation of floc occurs (2-4 hours). The water treatment residuals (settled floc) are pumped from the bottom of the pools and stored in holding lagoons to dry.

The softening process (5) involves the addition of sodium carbonate (soda ash) or caustic soda and hydrated lime to remove 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.

After an additional sedimentation process, carbon dioxide is added (6) to lower the pH level to approximately 7.8. Ozone is then added to the water to reduce dissolved organic matter (7). Water then flows through large biologically active filters made up of granular activated carbon (8) to remove any remaining particles and further reduce dissolved organic matter.

Addition of chlorine to disinfect the water, fluoride to protect teeth and a corrosion inhibitor take placeat the end of the process (9) before water enters large underground clearwells (10) to be held until needed by the community (11).

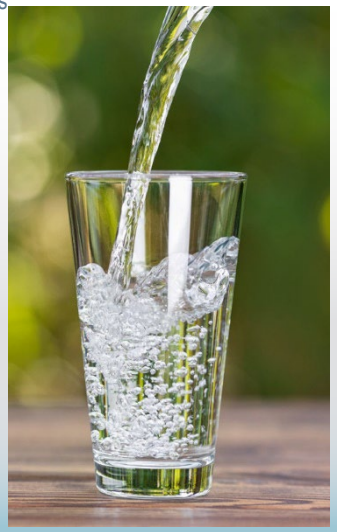
Please note: When ground water is used (as in the case of the Parsons Avenue Water Plant), neither screening (2) nor initial sedimentation (3, 4), nor ozone (7) is needed.

WHAT'S *NOT* IN YOUR WATER

Reports in the media often raise concerns about the health risks associated with the presence of certain minerals, chemicals, or other contaminants in your food or water. The Columbus Division of Water performs tens of thousands of tests each year to ensure drinking water quality. Many substances for which the division tests never appear in this report because they are not found in the drinking water. For example, there are 51 volatile organic chemicals as well as arsenic, perchlorate, asbestos, MTBE, radium 228, *Legionella*, microcystins, mercury, 1,2,3-trichloropropane (TCP) and ammonia (just to name a few) that are NOT found in your drinking water.

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.

Contaminants 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 and wildlife; inorganic contaminants, such as salts and metals, which can be naturally occurring or result from urban storm water 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 storm water 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 storm water runoff, and septic systems; and radioactive contaminants, which can be naturally occurring or the result of oil and gas production and mining activities.



In order to ensure that tap water is safe to drink, USEPA prescribes regulations which limit the amount of certain contaminants in drinking water provided by public water systems. 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 Environmental Protection Agency's Safe Drinking Water Hotline at 1-800-426-4791.

LEAD IN THE HOME

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 Columbus is responsible for providing high quality drinking water, but 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 thirty seconds to three (3) 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. A list of laboratories certified in the State of Ohio to test for lead may be found at https://epa.ohio.gov/ddagw/labcert or by calling 614-644-2752. 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 1-800-426-4791 or at http://www.epa.gov/safewater/lead.

The lead concentration in the drinking water leaving our water plants is below the level of detection. Most homes in the Columbus area do not have lead service lines and have little to no detectable levels of lead in their tap water.

You can also call 614-645-8276 for your free copy of "Reducing Exposure to Lead in Water." This information can also be found online at www.columbus.gov/LeadinWater/. Our lead program is being used to meet a portion of the notification requirements of OAC Rule 3745-83-02.

PROTECTING OUR WATER FROM BACKFLOW

Homes with underground irrigation systems and most non-residential buildings are required by the Division of Water to have a backflow prevention device. These backflow devices protect the public water system from any potentially contaminated water flowing back into the public system from a customers' plumbing. Some examples requiring backflow systems include: swimming pools, restaurants, medical facilities, laboratories, car washes, automotive shops, industrial sites and property with a well or pond.

A cross-connection is a physical connection between a possible source of contamination and the drinking water system piping. If the pressure of the source of contamination is greater than the water system pressure, contaminated water may backflow into the drinking water system. Pressure drops in the public water system caused by water line breaks, pump failures, and fire-fighting can also cause a backflow situation. If our rules and regulations require a backflow preventer, it must be tested annually by a tester you hire who is approved by our office. Additional information is on our website at www.columbus.gov/backflow.

HEALTH CONCERNS

Columbus' water is regularly tested for organisms that could be harmful to people – including *Cryptosporidium*. Crypto was detected 3 out of 12 times in the Scioto River and 5 out of 12 times in Big Walnut Creek. Crypto was not detected in either the DRWP tap water or the HCWP tap water. *Cryptosporidium* is a microbial pathogen found in surface water throughout the U.S. Although filtration removes *cryptosporidium*, the most commonly used filtration methods cannot guarantee 100% removal. Monitoring of source water indicates the presence of these organisms. Current test methods do not enable us to determine if the organisms are dead or if they are capable of causing disease. Symptoms of infection include nausea, diarrhea, and abdominal cramps. Most healthy individuals can overcome the disease. However, immuno-compromised people are at greater risk of developing life-threatening illness. We encourage immune-compromised individuals to consult their doctor regarding appropriate precautions to take to avoid infection. *Cryptosporidium* must be ingested to cause disease and it may be spread through means other than drinking water.

NEWBORNS AND NITRATE

Nitrate in drinking water at levels above 10 ppm is a health risk to 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. If you are caring for an infant, you should ask for advice from your health care provider. Seasonally, the Scioto River can experience elevated levels of nitrate due to agricultural runoff. To reduce the health risk to infants the City of Columbus recently added a treatment process, called anion exchange, to the Dublin Road Water Plant to remove nitrate. Anion exchange works like a giant water softener and pulls nitrate from the water as it flows through a bed of resin beads. Extensive water quality testing in the watershed upstream of the water plant by the Water Quality Assurance Laboratory helps to determine when we need to turn on the anion exchange system. Then additional water quality testing of the finished drinking water confirms that the nitrate level has been reduced below 10 ppm and is safe for infants.

Additional information about nitrates can be found online at www.columbus.gov/NitrateFAQs/ or visit www.columbus.gov/drinkingwater/ and look under Common Water Quality Concerns for the Elevated Nitrate Levels feature.

TOTAL ORGANIC CARBON

The value reported under "Level Found" 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 of greater than one indicates that the water system is in compliance with TOC removal requirements. A value of less than one indicates a violation of the TOC removal requirements. The value reported under "Range" for TOC is the lowest monthly ratio to the highest monthly ratio.

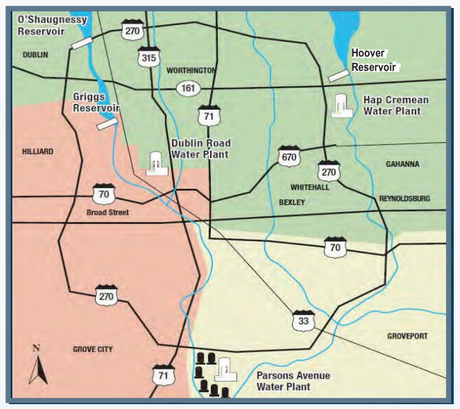
TURBIDITY

Utilities that treat surface water and/or filter the water are required to monitor for turbidity which is a measure of the cloudiness of water and is an indication of the effectiveness of our filtration system. The turbidity limit set by the EPA is 0.3 NTU in 95% of the samples analyzed each month, shall not exceed 1 NTU at any time. The highest recorded turbidity for HCWP was 0.25 NTU and the lowest monthly percentage of samples meeting the standard was 100%. The highest recorded turbidity for DRWP was 0.09 NTU and the lowest monthly percentage of samples meeting the standard was 100%. We are required to monitor your drinking water for turbidity on a regular basis. Results of regular monitoring are an indicator of whether or not your drinking water meets health standards.

WATER SERVICE AREA MAP

The sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs, and wells. Each home, school and business in the greater Columbus area receives water from one of the following three water plants:

- Dublin Road Water Plant (DRWP) serves northwestern and southwestern residents using water from Griggs and O'Shaughnessy Reservoirs.
- Hap Cremean Water Plant (HCWP) serves OSU and northern residents. The water source is the Hoover Reservoir.
- Parsons Avenue Water Plant (PAWP) draws water from wells and serves residents in the southeast.



REGULATED CONTAMINANTS

Substances we detected (units)	When we checked	What's allowed? (MCL)	What's the goal? (MCLG)	Dublin Road Water Plant		Hap Cremean Water Plant		Parsons Avenue Water Plant		Violation?	Where did it come from?
				Level Found	Range	Level Found	Range	Level Found	Range		
Fluoride (ppm)	2021	4	4	0.95	0.22 - 0.97	1.02	0.87 - 1.04	0.96	0.83 – 0.96	No	Water additive – protects teeth
Barium (ppm)	2021	2	2	ND	N/A	0.02	N/A	N/A	N/A	No	Erosion of natural deposits
Nitrate (ppm)	2021	10	10	3.4	0.6 – 3.4	1.3	< 0.5 - 1.3	ND	ND	No	Agricultural fertilizer runoff
Atrazine (ppb)	2021	3	3	0.20	< 0.10 - 0.38	< 0.10	< 0.10 - 0.12	ND	ND	No	Agricultural herbicide runoff
Total Trihalomethanes (ppb)	2021	80	No goal set	54.6	12.2 – 95.0	53.2	17.5 – 84.4	25.8	23.6 – 27.6	No	By-product of drinking water disinfection
Total Haloacetic Acids (ppb)	2021	60	No goal set	23.7	7.6 – 29.8	30.6	7.4 – 36.0	7.1	6.1 - 7.4	No	By-product of drinking water disinfection
Total Organic Carbon	2021	TT (removal ratio >1)	No goal set	2.37	2.00 – 2.70	2.55	2.31 - 2.89	N/A	N/A	No	Naturally present in environment
Total Chlorine (ppm)	2021	4 (MRDL)	4 (MRDLG)	1.35	1.16 - 1.56	1.38	1.21 - 1.53	0.97	0.87 – 0.95	No	Disinfectant
Turbidity (NTU)	2021	TT (<1 NTU)	No goal set	0.09	0.00 - 0.09	0.25	0.01 - 0.25	N/A	N/A	No	Soil runoff
		TT (% meeting Std.)	No goal set	100%		100%		N/A			

Substances we detected (units)	When we checked	Action Level (AL)	What's the goal? (MCLG)	Concentration at 90th percentile	Individual Results over the AL	# of sites found above the Action Level	Violation?	Where did it come from?
Lead (ppb)	2020	15	0	< 1.0	N/A	0 out of 50	No	Corrosion of household plumbing
Copper (ppm)	2020	1.3	1.3	0.050	N/A	0 out of 50	No	Corrosion of household plumbing; Erosion of natural deposits

OTHER WATER QUALITY PARAMETERS OF INTEREST

Substances we detected (units)		When we checked	What's allowed? (MCL)	What's the goal? (MCLG)	Dublin Road Water Plant		Hap Cremean Water Plant		Parsons Avenue Water Plant		Where did it come from?
					Annual Average	Range	Annual Average	Range	Annual Average	Range	
pH (units)		2021	7.0 - 8.5 (SMCL)	No goal set	7.8	7.8 - 7.8	7.9	7.8 - 7.9	7.8	7.8 - 7.9	Treatment process
Hardness	(ppm)	2021	No set level	No goal set	122	119 - 125	99	84 - 118	123	121 - 124	Naturally occurring
	(gpg)				7.1	6.9 - 7.3	5.8	4.9 - 6.9	7.2	7.1 - 7.2	
Total Alkalinity (ppm)		2021	No set level	No goal set	59	51 - 66	38	35 - 44	40	37 - 43	Naturally occurring; Treatment process
Sodium (ppm)		2021	No set level	No goal set	61.9	39.6 – 130.9	20.5	14.9 – 38.2	72.8	55.8 – 85.6	Naturally occurring; Treatment process; Road Salt
Potassium (ppm)		2021	No set level	No goal set	5.2	1.2 – 7.9	3.9	2.6 – 5.9	4.0	2.5 – 6.5	Naturally occurring
Sulfate (ppm)		2021	250 (SMCL)	No goal set	102.2	75.3 – 127.6	53.4	43.4 – 62.5	164.7	137.2 – 187.7	Naturally occurring; Treatment process
Chloride (ppm)		2021	250 (SMCL)	No goal set	57.9	40 – 142	21.3	5 – 29	54.3	49 – 57	Naturally occurring; Road Salt
Conductivity (uS/cm)		2021	No set level	No goal set	518	322 - 767	306	266 - 385	599	491 – 678	Naturally occurring; Treatment process; Road Salt

If you have any questions about this data please call the Columbus Water Quality Assurance Lab at 614-645-7691, or **www.columbus.gov/Utilities/**.

UNREGULATED CONTAMINANTS

Substances we detected (units)	When we checked	What's the goal? (MCLG)	Range of Detections	Level Found	Sample Location	Where did it come from?
HAA9 (ppb)	2021	N/A	11.9 – 25.4	17.6	Distribution System	By-products of drinking water disinfection
HAA6Br (ppb)	2021	N/A	5.5 – 10.4	6.8	Distribution System	By-products of drinking water disinfection
HAA5 (ppb)	2021	N/A	4.7 – 18.6	11.6	Distribution System	By-products of drinking water disinfection

UCMR 4 Monitoring: In 2021 the City of Columbus, Division of Water was required to participate in the fourth Unregulated Contaminant Monitoring Rule (UCMR 4.) Unregulated contaminants are those for which EPA has not established drinking water standards. The purpose of unregulated contaminant monitoring is to assist EPA in determining the occurrence of unregulated contaminants in drinking water and whether future regulation is warranted. If you would like additional information on results of unregulated contaminant monitoring, please call our Water Quality Assurance Lab at 614-645-7691.

DEFINITIONS AND TERMS

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

Maximum Contaminant Level Goal (MCLG) – The level of a contaminant in drinking water, below which there is no known Goal or expected health risk. MCLGs allow for a margin of safety.

Maximum Contaminant Level (MCL) – The highest level of contaminant that is allowed in drinking water. MCLs are set as close to the MCLG as feasible using the best available treatment technology.

Secondary MCL (SMCL) – A nonenforceable numerical limit set by the USEPA for a contaminant on the basis of aesthetic effects to prevent an undesirable taste, odor, or appearance.

N/A – Not Applicable

ND – No Detect

NTU – Nephelometric Turbidity Unit (a measure of particles held in suspension in water).

Parts per Trillion (ppt) or Nanograms per Liter (ng/L) – Are units of measurement for concentration of a contaminant. A part per trillion corresponds to about thirty seconds out of every million years.

Parts per Billion (ppb) or Micrograms per Liter (ug/L) – Are units of measurement for concentration of a contaminant. A part per billion corresponds to one second in roughly 31.7 years

Parts per Million (ppm) or Milligrams per Liter (mg/L) – Are units of measurement for concentration of a contaminant. A part per million corresponds to one second in roughly 11.5 days.

Grains per Gallon (gpg) – A non-metric unit of measurement for hardness used in North America.

Microsiemens per Centimeter (uS/cm) – Are units of measurement for electrical conductivity. Freshwater is usually between 0 and 1,500 uS/cm, while sea water has a conductivity value of about 50,000 uS/cm.

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 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.

The ">" symbol – This symbol means "greater than."

The "<" symbol – This symbol means "less than." For example, a result of < 5 means that the lowest level that could be detected was 5 and the contaminant in that sample was not detected.

Per- and polyfluoroalkyl substances (PFAS) – PFAS are a group of man-made chemicals applied to many industrial, commercial and consumer products to make them waterproof, stain resistant, or nonstick. PFAS are also used in products like cosmetics, fast food packaging, and a type of firefighting foam called aqueous film forming foam (AFFF) which are used mainly on large spills of flammable liquids, such as jet fuel. PFAS are classified as contaminants of emerging concern, meaning that research into the harm they may cause to human health is still ongoing.

Treatment Technique (TT) – A required process intended to reduce the level of a contaminant in drinking water. For Total Organic Carbon (TOC) the level must be above 1. For turbidity the level must be under 0.3 NTU 95% of the time, and always < 1 NTU.

Turbidity – A measurement of the cloudiness of the water. We monitor turbidity because it is a good indication of water quality and the effectiveness of our treatment process.