Water for Living

2008 Drinking Water • Consumer Confidence Report
Division of Power and Water • Greater Columbus Area

How to Contact Us

City of Columbus Division of Power and Water

910 Dublin Road • Columbus, OH 43215

Water Quality Assurance Laboratory
(614) 645-7691

- Water Quality Monitoring Questions
- Regulatory Inquiries
- Taste/Odor/Colored Water Concerns

Customer Service
(614) 645-8270

- Customer Billing Inquiries
- Open/Close Accounts
- Schedule Service Calls
- Process Bill Payments

Distribution/Maintenance
(614) 645-7788

- Water Emergencies (evenings/ weekends)
- Report Waterline Breaks
- Report Hydrant Damage or Leaks

Michael B. Coleman
Mayor, City of Columbus

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Director, Department of Public Utilities

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This report can also be found on our website at www.utilities.columbus.gov. Just click on "Consumer Confidence."

311 Call Center
The Call Center is the single point of contact for requesting all non-emergency City services and is available to residents, businesses, and visitors. Just dial 3-1-1 (or 614-645-3111), or visit on the web at www.311.columbus.gov.

Get Green Columbus
Sets forth the city's commitment to making Columbus a greener place to live. Visit www.getgreencolumbus.org to learn more.

This report meets the EPA's National Primary Drinking Water Regulation for Consumer Confidence Reports.

30% Post Consumer Recycled Fiber

Your 2008 Water Quality Report

The goal of the Division of Power and 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 drinking water, 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.

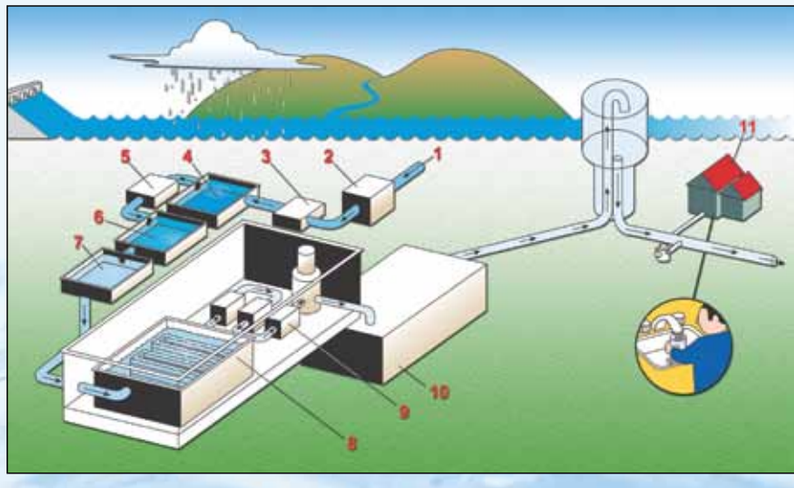
If you have any questions about this data please call the **Columbus Water Quality Assurance Lab** at (614) 645-7691, or **www.utilities.columbus.gov**

Sewer and Water Advisory Board

In 1984, the City of Columbus formed the Columbus Sewer and Water Advisory Board to oversee the operations and rate structures of both the Divisions of Power and Water and Sewerage and Drainage. The board, comprised of city officials and six Columbus residents who represent different constituencies — such as senior citizens and the business community — meets quarterly to advise the Divisions on business decisions and best practices. Chaired by Ohio State University's Wallace Giffen, the board forwards their recommendation to Columbus City Council, who then deliberate to officially set rates or change fundamental policy.

The Sewer and Water Advisory Board meetings are open to the public. Call (614) 645-3956 for a schedule of meeting times and dates.

The Water Treatment Process



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 residual (settled floc) is 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. Water is held in a stabilizing basin (7) for another 2-4 hours.

Water then flows through large dual-media rapid sand filters made up of layers of gravel, sand and antracite coal (8).

Addition of chlorine to disinfect the water, fluoride to protect teeth and a corrosion inhibitor take place at 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) is needed.

Source Water Assessment Information

A high-quality source water supply allows the Division of Power & 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 it's on-going efforts to maintain regulatory compliance and monitor our water supply, the Division of Power & Water has completed a Source Water Assessment process. 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 Treatment 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. More detailed information is provided in the City of Columbus' Drinking Water Source Assessment Report, which can be viewed by calling the Watershed section at (614) 645-1721.

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

Comparison Chart for Water Usage and Savings

	Normal Water Usage		Conservation Usage		
	Gals. Used	Method	Gals. Used	Method	Savings
Shower (10 min)	50	Shower head running continuously	25	Shorter showers (5 min) ***(OR)***	50%
			25	Low flow shower head (10 min) ***(OR)***	50%
			12.5	Low flow shower head (5 min)	75%
Tub Bath	36	Standard tub, full	18	Standard tub, half full	50%
Toilet Flushing	5-7	Depends on tank size	4-6	Use a displacement bag, or milk jug in tank reservoir ***(OR)***	20%
			1.6	Replace with low flow toilet	73%
Washing Hands	5	With tap running continuously	1	Fill a standard basin	80%
Brushing Teeth	10	With tap running continuously	1	Wet brush with brief rinses	90%
Shaving	20	With tap running continuously	1	Fill a standard basin	95%
Washing Dishes	30	With tap running continuously	10	Wash and rinse with a half filled standard sink	66%
Dishwasher	16	Full cycle	7	Short cycle	56%
Washing Machine	60	Full cycle; Highest water level	27	Short cycle	55%
Outdoor Watering	10	Per minute; Average garden hose	varies	Eliminate, night watering, etc.	varies

Primary Drinking Water Standards

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)	2008	4	4	1.11	0.87-1.11	1.16	0.66-1.16	1.10	0.95-1.10	No	Water additive – protects teeth
Nitrate (ppm)	2008	10	10	4.7	<0.5-4.7	1.9	<0.5-1.9	ND	ND	No	Agricultural fertilizer runoff
Simazine (ppb)	2008	4	4	<0.10	<0.10-0.24	0.24	<0.10-0.40	ND[1]	ND[1]	No	Agricultural herbicide runoff
Atrazine (ppb)	2008	3	3	0.43	<0.10-1.09	0.31	<0.10-1.19	ND[1]	ND[1]	No	Agricultural herbicide runoff
Alachlor (ppb)	2008	2	0	ND	ND	ND	ND	ND[1]	ND[1]	No	Agricultural herbicide runoff
Metolachlor (ppb)	2008	No set level	No goal set	<0.20	<0.20-0.51	<0.20	<0.20-0.58	ND[1]	ND[1]	No	Agricultural herbicide runoff
Metribuzin (ppb)	2008	No set level	No goal set	ND	ND	ND	ND	ND[1]	ND[1]	No	Agricultural herbicide runoff
Chloroform (ppb)	2008	No set level	0	19.5	N/A	27.5	N/A	2.0	N/A	No	By-product of drinking water disinfection
Bromodichloromethane (ppb)	2008	No set level	0	7.7	N/A	5.5	N/A	3.0	N/A	No	By-product of drinking water disinfection
Dibromochloromethane (ppb)	2008	No set level	60	1.7	N/A	0.65	N/A	2.8	N/A	No	By-product of drinking water disinfection
Bromoform (ppb)	2008	No set level	0	< 0.5	N/A	< 0.5	N/A	0.8	N/A	No	By-product of drinking water disinfection
Total Trihalomethanes (ppb)	2008	80	No goal set	48.5	17.6-97.1	50.4	24.0-100.7	14.7	11.0-16.9	No	By-product of drinking water disinfection
Total Haloacetic Acids (ppb)	2008	60	No goal set	37.5	20.5-58.5	42.6	28.2-65.1	4.3	1.4-6.4	No	By-product of drinking water disinfection
Total Organic Carbon	2008	TT (removal ratio >1)	No goal set	2.23	1.73-2.74	2.17	1.82-2.53	N/A	N/A	No	Naturally present in environment
Total Coliform Bacteria	2008	Present in <5% of monthly samples	0%	0.8%[2]	0-0.8%	0.0%	0.0-0.0%	0.0%	0.0-0.0%	No	Bacteria present in environment
Total Chlorine (ppm)	2008	4 (MRDL)	4 (MRDLG)	1.56	0.38-2.15	1.58	0.37-2.40	1.10	0.21-1.91	No	Disinfectant
Turbidity (NTU)	2008	TT (<1 NTU)	No goal set	0.25	0.03-0.25	0.23	0.03-0.23	N/A	N/A	No	Soil runoff
		TT (% meeting Std.)	No goal set	100%	100-100%	100%	100-100%	N/A	N/A		

Substances we detected (units)	When we checked	Action Level (AL)	What's the goal? (MCLG)	Concentration at 90th percentile	Range	# of sites found above the Action Level	Violation?	Where did it come from?
Lead (ppb)	2008	15	0	< 1	< 1 – 3.2	0 out of 50	No	Corrosion of household plumbing
Copper (ppm)	2008	1.3	1.3	0.051	0.005 – 0.071	0 out of 50	No	Corrosion of household plumbing; Erosion of natural deposits

The Initial Distribution System Evaluation (IDSE) is for establishing future regulatory monitoring sites (12 month study beginning September 2007)[3]

Substances we detected (units)	When we checked	MCL	MCLG	Range in the Water Distribution System for Columbus	Violation?	Where did it come from?
IDSE TTHM (ppb)	2008	N/A	N/A	11.2 – 44.6	N/A	By-product of drinking water disinfection
IDSE THAA (ppb)	2008	N/A	N/A	3.2 – 41.4	N/A	By-product of drinking water disinfection

[1] *2005 Data, Not required to monitor in 2008.*
[2] *One (1) sample out of 129 in August 2008 indicated the presence of coliform bacteria = 1/1513 for the year.*

[3] *Under the Stage 2 Disinfectants/Disinfection Byproducts Rule (D/DBPR), our public water system was required by the USEPA to conduct an evaluation of our distribution system. This is known as an Initial Distribution System Evaluation (IDSE), and is intended to identify locations in our distribution system with elevated disinfection byproduct concentrations. The locations selected for the IDSE may be used for compliance monitoring under Stage 2 DBPR, beginning in 2012. Disinfection byproducts are the result of providing continuous disinfection of your drinking water and form when disinfectants combine with organic matter naturally occurring in the source water. Disinfection byproducts are grouped into two categories, Total Trihalomethanes (TTHM) and Haloacetic Acids (HAA5). USEPA set standards for controlling the levels of disinfectants and disinfectant byproducts in drinking water, including both THMs and HAAs.*

Other Water Quality Parameters of Interest

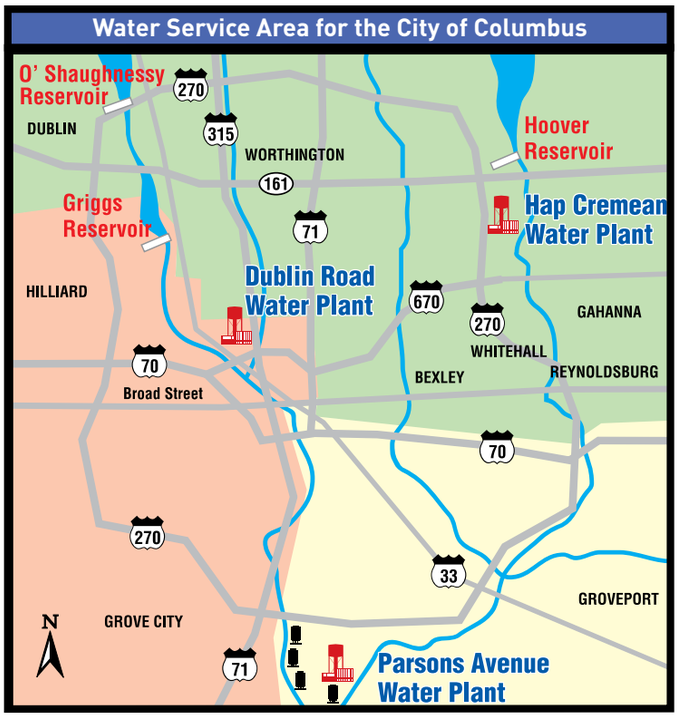
Substances we detected (units)	When we checked	What's allowed? (MCL)	What's the goal? (MCLG)	Dublin Road Water Plant		Hap Cremean Water Plant		Parsons Avenue Water Plant		Where did it come from?
				Annual Avg.	Range	Annual Avg.	Range	Annual Avg.	Range	
pH (units)	2008	7.0-10.5 (SMCL)	No goal set	7.8	7.7 - 7.8	7.8	7.7 - 7.8	7.8	7.7 - 7.9	Treatment process
Hardness (ppm)	2008	No set level	No goal set	120	118 - 124	101	89 - 126	123	120 - 125	Naturally occurring
Hardness (gpg)				7.0	6.9 - 7.3	5.9	5.2 - 7.4	7.2	7.0 - 7.3	
Sodium (ppm)	2008	No set level	No goal set	60	38 - 111	15	11 - 26	66	59 - 77	Natural/Treatment process

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

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 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 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.
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.
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	Is 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.

Average cost for 5 gallons of Columbus drinking water delivered to your home is 1¢



The Water Service Area Map:

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. Each home, school and business in the greater Columbus area receives water from one of the following three water plants:

- **Dublin Road Water Plant** serves northwest and southwest residents using water from the Griggs and O'Shaughnessy Reservoirs.
- **Hap Cremean Water Plant** serves OSU and northern residents. The source is the Hoover Reservoir.
- **Parsons Avenue Water Plant** draws water from wells and serves residents in the southeast.

What's NOT in Your Water

Reports on TV and in the press 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 Power & Water performs 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, and ammonia (just to name a few) that are NOT found in your drinking water.

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.

Health Concerns

Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised individuals such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, persons with HIV/AIDS or other immune system disorders, some elderly and infants can be particularly at risk from infection. These people should seek advice from their health care providers about drinking water.

Cryptosporidium ("Crypto"), for example, is a microscopic organism that, when ingested, can result in diarrhea, fever, and other gastrointestinal symptoms. Crypto comes from animal waste in the watershed and may be found in our source water. Crypto is eliminated by using a multi-barrier water treatment process including coagulation, sedimentation, softening, filtration and disinfection. 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 at 1(800) 426-4791.

Columbus' water is regularly tested for organisms that could be harmful to people — including *Cryptosporidium*. While it is sometimes found in Ohio rivers and streams, Crypto has NEVER been found in our finished drinking water.

Newborns and 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. Additional information about nitrates can be found online at www.utilities.columbus.gov/nitrateInfo.htm.

None of the water supplied by the Columbus water plants exceeded the nitrate MCL in 2008.

Lead in the Home

The lead concentration in the drinking water leaving our water treatment plants is below the level of detection. However, lead can enter the water from household brass fixtures, lead pipes, or lead solder, when water resides in the plumbing for more than six hours. 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. 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 the 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. Additionally, flush your tap water for at least two (2) minutes before using it. More information is available from the Safe Drinking Water Hotline at 1 (800) 426-4791, found on the web at www.epa.gov/safewater/lead. Call us at (614) 645-8270 for your free copy of "What You Need to Know About Lead in Drinking Water."

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 daily samples and shall not exceed 1 NTU at any time. The highest recorded turbidity for HCWP was 0.23 NTU and the lowest monthly percentage of samples meeting the standard was 100%. The highest recorded turbidity for DRWP was 0.25 NTU and the lowest monthly percentage of samples meeting the standard was 100%.

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.

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 and addresses customer complaints and inquiries regarding water quality. In 2008, the WQAL's EPA licensed and certified laboratory staff completed nearly 45,000 analyses relating to 29 different organic, inorganic, and microbiological water quality parameters.

To maintain compliance with current SDWA regulations, WQAL activities in 2008 were again directed at developing information regarding new and upcoming rules. These include the Unregulated Contaminant Monitoring Rule (UCMR), Stages 1 and 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 9/11 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 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.