

Water Quality Report (Water Purchased in 2018)

**Boone County Water District
PWSID KY0080034**

ANNUAL DRINKING WATER QUALITY REPORT

(For water purchased during 2018)

We're pleased to present to you this year's Annual Drinking Water Quality Report. This report is designed to inform you about the quality water and services we deliver to you every day. Our constant goal is to provide you with a safe and dependable supply of drinking water. We want you to understand the efforts we make to continually improve the water treatment process and protect our water resources. We are committed to ensuring the quality of your water.

We purchased our water in 2018 from the Boone Florence Water Commission (BFWC)/Greater Cincinnati Water Works (GCWW), which is treated surface water from the Ohio River. This 30 million gallon a day system should meet our future community needs past the year 2025.

If you have any questions about this report or concerning your water utility, please contact Harry Anness at 859-586-6155 or P.O. Box 18 Burlington, KY 41005. I'm pleased to report that our drinking water is safe and meets federal and state requirements. We want our valued customers to be informed about their water quality. If you want to learn more, please attend any of our regularly scheduled meetings or visit our website at www.boonewater.com. Meetings are held at 8:30 AM on the Third Tuesday of each month at the District Office located at 2475 Burlington Pike.

The Boone County Water District routinely monitors for contaminants in your drinking water according to Federal and State laws. This table shows the results of our monitoring for the period of January 1st to December 31st, 2018

Thank you for allowing us to continue providing your family with clean, quality water this year.

Spanish (Español)

Este informe contiene información muy importante sobre la calidad de su agua beber. Tradúzcalo o hable con alguien que lo entienda bien.

Water Source Information Drinking Water Regulations

Greater Cincinnati Water Works performs an average of 300 tests per day throughout their system to ensure safe drinking water. Source waters are tested routinely to detect contaminants before they enter treatment plants. Water quality experts then test the water after each stage of the treatment process. Finally, water samples are collected in the distribution system to monitor the quality of the water once it has left the treatment plant.

Most of GCWW's customers receive water from the Miller Treatment Plant, which treats surface water from the Ohio River. As with all surface waters, Ohio EPA has classified the Ohio River as highly susceptible to contamination. This is because it is open to the environment and pollution may spread quickly with the flow of the river. To address this, GCWW has several barriers between potential pollution and your tap water. The first barrier, a source water protection program, is designed to prevent and monitor contamination in the river.

GCWW works with Ohio River Valley Water Sanitation Commission (ORSANCO) and other utilities to monitor contamination in the river. GCWW has several options to protect the drinking water, ranging from turning off the intake and using only stored water until pollution passes, to altering a treatment process to remove the contamination. Finally, GCWW is one of only a few water treatment plants in the nation that has included granular activated carbon (GAC) into our daily treatment process. GAC has been recognized as the best available technology for removing the most common chemicals found in spills on the Ohio River.

Source Water Assessment

A source water assessment has been completed. The following is a summary of the susceptibility analysis that is part of the source water assessment. Several areas of concern are related to the extensive development of transportation infrastructure, the potential for spills, high degree of impervious cover and polluted runoff. Areas of row crops and urban and recreational grasses introduce the potential for herbicide, pesticide, and fertilizer use – possible non-point source contaminants. Bridges, railroads, ports, waste handlers or generators, and Tier II hazardous chemical users in the area introduce the potential for spills or leaks of hazardous materials. Landfills and permitted discharges are relatively high in number for a supply area.

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 may be obtained by calling the Environmental Protection Agency's Safe Drinking Water Hotline at 800-426-4791.

Cryptosporidium (Crypto) is a microscopic organism that, when ingested, can result in diarrhea, fever and other gastrointestinal symptoms. GCWW has tested for Crypto in treated waters and has never detected it. The organism is found in GCWW source water and comes from animal wastes in the watershed. Crypto is eliminated by an effective treatment combination including sedimentation, filtration, and disinfection. 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. Boone County Water District 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 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 Safe Drinking Water Hotline or at <http://www.epa.gov/safewater/lead>.

We at the Boone County Water District work around the clock to provide top quality water to every tap. We ask that all our customers help us protect our water sources, which are the heart of our community, our way of life and our children's future. If you have questions please call our office at 859-586-6155.

Health Information

"Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised 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)."

Other areas of concern include several segments of streams already assessed as having impairments, power line right-of-way with potential herbicide use, and residential septic systems located throughout the watershed. Since the intake is in an urban area, the threat of underground storage tanks leaking must also be taken into account. The entire report is available at Northern Kentucky Area Development District, 22 Spiral Drive, Florence, Ky 41042. Phone: 859-283-1885.

What contaminants could be in source 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 may 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, that may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife.

Inorganic contaminants, such as salts and metals, that may be naturally-occurring or 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 may be naturally-occurring or be the result of oil and gas production and mining activities.

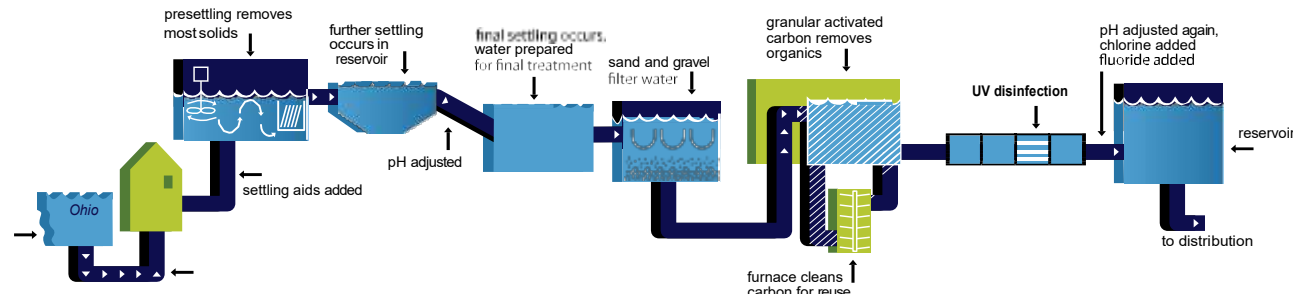
To ensure that tap water is safe to drink, U.S. EPA prescribes regulations that limit the amount of certain contaminants in water provided by public water systems.

U.S. FDA regulations establish limits for contaminants in bottled water that shall provide the same protection for public health.



In March 2003, GCWW began selling drinking water on a wholesale basis to Boone County and Florence, KY.

The Treatment Process at the Miller Plant on the Ohio River

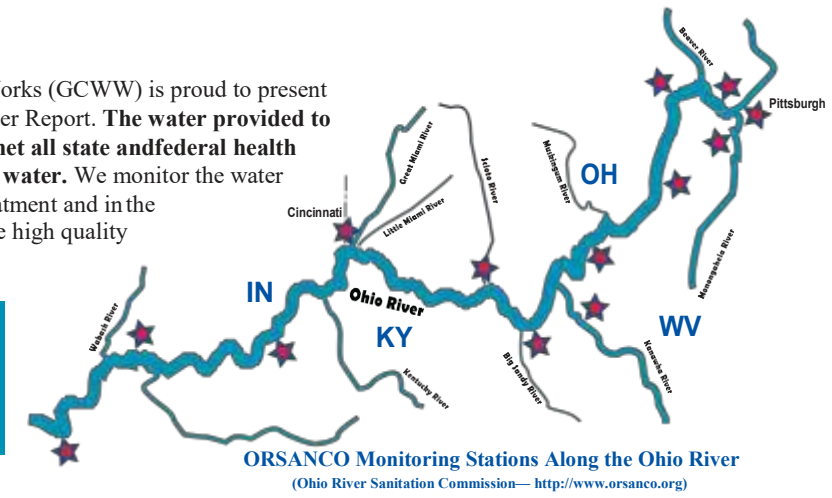


Backwash water from the sand filters and plant recycle water is returned to the beginning of the treatment process.

The major source of GCWW's water is the Ohio River which is treated at the Miller Plant. GCWW's Miller Treatment Plant is one of only a few water treatment plants in the nation that incorporates granular activated carbon (GAC) with on-site reactivation into its water treatment process. This state-of-the-art technology uses granular carbon which contains numerous microscopic cavities. When water is passed through the GAC, impurities adhere to the carbon and are removed from the water. Benefits of GAC are: barrier against potential chemical spills in the Ohio River; barrier against impurities in raw source water; less chlorine required for disinfection; reduced disinfection-by-products; and improved control of taste and odor.

Greater Cincinnati Water Works (GCWW) is proud to present the 2018 Safe Drinking Water Report. The water provided to you during the past year met all state and federal health standards set for drinking water. We monitor the water from the source through treatment and in the distribution system to ensure high quality drinking water.

ORSANCO's coordinated early warning organic detection system on the Ohio River is the only such system in the United States.



GCWW met or exceeded all state and federal health standards

GCWW is proud to say that our water meets or exceeds every health standard developed by both the USEPA and Ohio EPA. In order to ensure that tap water is safe to drink, USEPA prescribes regulations that 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 shall provide the same protection for public health. The tables below show the substances detected in GCWW drinking water while performing the most up-to-date monitoring required by the EPA. The Ohio EPA requires us to monitor for some contaminants less than once per year because the concentrations of these contaminants do not change frequently. Because of this, some of our data, though accurate, is more than one year old. For a complete listing of GCWW test results, call (513) 591-7700 and press "0".

Substance	Unit	MCL	MCLG	Miller Water				Bolton Water				Typical source of contamination
				Report Level	Range of Detection	Violation	Year	Report Level	Range of Detection	Violation	Year	
Barium	ppm	2	2	0.032	na	No	2018	0.013	na	No	2018	Erosion of natural deposits; Discharge of drilling wastes; Discharge fro metal refineries.
Fluoride	ppm	4	4	0.87	0.68 - 0.98	No	2018	0.88	0.70 - 0.99	No	2018	Additive which promotes strong teeth. May come from erosion of natural deposits.
Nitrate	ppm	10	10	1.04	0.40 - 1.04	No	2018	1.24	na	No	2018	Fertilizer runoff, leaching from septic tanks, sewage, erosion of natural deposits.
Turbidity	NTU	note 1	na	0.25 / 100%	0.03 - 0.25	No	2018	na	na	na	na	Soil runoff.
Total Organic Carbon	note 2	na	na	2.07	1.85 - 3.34	No	2018	na	na	na	na	Naturally present in the environment.

note 1 Turbidity levels must be < 1 NTU Max and < 0.3 NTU 95% of the time.

note 2 Total Organic Carbon monthly ratio is the % TOC removal achieved to the % TOC removal required. Annual average must be 1.00 or greater for compliance.

Regulated Contaminant Test Results by Boone County Water District

Contaminant [code] (units)	MCL	MCLG	Report Level	Range of Detection	Date of Sample	Violation	Likely Source of Contamination
Copper [1022] (ppm) sites exceeding action level = 0	AL = 1.3	1.3	(90th percentile) 0.0403	0.006 to 0.082	2017	No	Corrosion of household plumbing systems
Lead [1030] (ppb) sites exceeding action level = 0	AL = 15	0	(90th percentile) 1.4	0 to 3.4	2017	No	Corrosion of household plumbing systems
Chlorine (ppm)	MRDL = 4	MRDLG = 4	(highest average) 1.13	0.29 to 1.44	2018	No	Water additive used to control microbes
HAA (ppb) (Stage 2) [Haloacetic acids]	60	na	(high site average) 14	(range of individual sites) 6 to 22	2018	No	Byproduct of drinking water disinfection
TTHM (ppb) (Stage 2) [total trihalomethanes]	80	na	(high site average) 65	(range of individual sites) 32 to 73	2018	No	Byproduct of drinking water disinfection

GCWW tested for Cryptosporidium (Crypto) in the Ohio River surface water and it was found in 2 of 12 samples during 2018. GCWW has also tested for Crypto in treated waters and has never detected it. The organism is found in surface waters and comes from animal and human wastes which enter the watershed. Crypto is eliminated by an effective combination including sedimentation, filtration, and disinfection.

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 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. **Below Detection Levels (BDL)** - laboratory analysis indicates that the contaminant is not present. **Not Applicable (na)** - does not apply. **Parts per million (ppm)** - or milligrams per liter, (mg/L). One part per million corresponds to one minute in two years or a single penny in \$10,000. **Parts per billion (ppb)** - or micrograms per liter, (µg/L). One part per billion corresponds to one minute in 2,000 years, or a single penny in \$10,000,000. **Parts per trillion (ppt)** - one part per trillion corresponds to one minute in 2,000,000 years, or a single penny in \$10,000,000,000. **Parts per quadrillion (ppq)** - one part per quadrillion corresponds to one minute in 2,000,000,000 years or one penny in \$10,000,000,000,000. **Picocuries per liter (pCi/L)** - a measure of the radioactivity in water. **Millirems per year (mrem/yr)** - measure of radiation absorbed by the body. **Million Fibers per Liter (MFL)** - a measure of the presence of asbestos fibers that are longer than 10 micrometers. **Nephelometric Turbidity Unit (NTU)** - a measure of the clarity of water. Turbidity has no health effects. However, turbidity can provide a medium for microbial growth. Turbidity is monitored because it is a good indicator of the effectiveness of the filtration system. **Variances & Exemptions (V&E)** - State or EPA permission not to meet an MCL or a treatment technique under certain conditions. **Action Level (AL)** - the concentration of a contaminant which, if exceeded, triggers treatment or other requirements that a water system shall follow. **Treatment Technique (TT)** - a required process intended to reduce the level of a contaminant in drinking water.

Unregulated Contaminant Test Results by Boone County Water District

Unregulated Contaminants (UCMR4)	average	range (ppb)	date
Manganese	0.190	0 to 0.57	Jun-18
HAA5	11.021	73 to 18.1	Dec-18
HAA6Br	7.998	6.6 to 10	Dec-18
HAA9	17.029	12 to 24.6	Dec-18

Your drinking water has been sampled for a series of unregulated contaminants. Unregulated contaminants are those for which EPA has not yet established drinking water standards. There are no MCLs and therefore no violations if found. The purpose of monitoring for these contaminants is to help EPA determine where the contaminants occur and whether they should have a standard. As our customers, you have a right to know that these data are available. If you are interested in examining the results, please contact our office during normal business hours.

This report will not be mailed. To request a copy by mail, please contact our office at 859-586-6155.