

**WESTERN WATER COMPANY
2021 WATER QUALITY REPORT**

IS MY DRINKING WATER SAFE?

Water quality is the first priority at Western Water Company. Constant testing by the dedicated staff of certified operators and laboratory personnel ensure the highest standards for drinking water quality are being met at all times. The test results for 2021 show Western Water Company's water to be of the highest quality. If you have any questions about water quality, please contact Jim Swearingen at the Water Treatment Plant, weekdays at (513)899-3211 between 8:00 A.M. and 5:00 P.M.

WHAT IS THE SOURCE OF MY WATER?

Western Water Company's water comes from an aquifer along the Little Miami River in Warren County. Western Water also purchases water from other water systems and then distributes the various supplies to their customers.

	Percent	Source
Western Water Company	55%	Little Miami River Aquifer Warren County
Cincinnati Water Works	44%	Ohio River, and Great Miami Aquifer
Brown County Rural Water	.5%	Ohio River Valley Aquifer
City of Wilmington	.5%	Cesar Creek Lake

WHY ARE THERE CONTAMINANTS IN MY WATER?

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 (800)426-4791.

WHAT ARE SOURCES OF CONTAMINATION TO DRINKING WATER?

The sources of drinking water both tap and bottled water includes rivers, lakes, streams, ponds, reservoirs, springs, and wells. As water travels over the surfaces of the land or through the ground, it dissolves naturally occurring minerals and in some cases radioactive materials. The water can also 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 storm water 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 storm 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 storm water 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, EPA prescribes regulations, which limit the amount of certain contaminants in water provided by public water systems. FDA regulations establish limits for contaminants in bottled water which must provide the same protection for public health.

SUSCEPTIBILITY ANALYSIS

The aquifer that supplies drinking water to Western Water Company has a high susceptibility to contamination, as indicated by the presence of nitrates in the treated water in 1994 and 1996. The high susceptibility is due to the sensitive nature of the aquifer in which the drinking water wells are located. These wells are near existing potential contaminant sources which have been identified. Further nitrate testing since 1996 has indicated very low levels of nitrates in the finished water. These results are listed in this report and previous Consumer Confidence Reports, you the customer have received over the past few years. Although the aquifer is susceptible to contamination, our testing indicates nitrates are at very low levels in the finished water. Please contact Jim Swearingen at 513-899-3211 Ext. 5 if you would like more information about the assessment.

DO I NEED TO TAKE SPECIAL PRECAUTIONS?

Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno compromised persons such as persons with cancer undergoing chemo therapy, 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 at (800)426-4791.

IS OUR WATER SYSTEM MEETING OTHER RULES THAT GOVERN OUR OPERATIONS?

In 2021, our PWS was sampled as part of the State of Ohio's Drinking Water Per- and Polyfluoroalkyl Substances (PFAS) Sampling Initiative. Results from this sampling indicated PFAS were detected in our drinking water below the action level established by Ohio EPA. Follow up monitoring is being conducted. For more information about PFAS, and to view our latest results, please visit pfas.ohio.gov.

In 2021 Western Water Company had an unconditional license to operate our water system.

TURBIDITY

Western Water Company purchases water from other water systems as explained in the source water section. We are required to report on the turbidity as an indication of the effectiveness of their filtration system. Turbidity is a measure of the cloudiness of water. The limit set by the EPA is 0.3 NTU in 95% of the samples analyzed each month, and shall not exceed 1 NTU at any time. As reported in GCWW's Data sheet provided with this CCR GCWW's highest recorded turbidity result for 2020 was .09 NTU at the Miller Water Plant and the lowest monthly percentage of samples meeting the turbidity limits was 100%.

HOW CAN I GET INVOLVED?

Our Water Officials will meet to answer questions each month at the Treatment Plant. Please feel free to participate. Call Jim Swearingen for dates and times at 1-513-899-3211.

LEAD CAN CAUSE SERIOUS HEALTH PROBLEMS

“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. Western Water Company 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 two 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 <http://www.epa.state.oh.us/ddagw> 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 800-426-4719 or at <http://www.epa.gov/safewater/lead>”.

2021 Western Water Company Water Quality Data							
CONTAMINANTS	YEAR SAMPLE	DETECTION LEVEL	MCL	MCLG	RANGE OF DETECTION	VIOLATION	SOURCE OF CONTAMINANTS
INORGANIC (REGULATED) CONTAMINANTS							
FLUORIDE	2021	1.05 mg/l	4.0 mg/L	4.0 mg/L	0.84-1.19 mg/l	NONE	EROSION OF NATURAL DEPOSITS, WATER ADDITIVE WHICH PROMOTES STRONG TEETH. DISCHARGE FROM FERTILIZER AND ALUMINUM FACTORIES
NITRATES	2020	0.93 mg/l	10.0 mg/L	10.0 mg/L	n/a	NONE	RUNOFF FROM FERTILIZER USE; LEACHING FROM SEPTIC TANKS, SEWAGE; EROSION OF NATURAL DEPOSITS
BARIUM	2019	0.0479 MG/L	2 MG/L	2MG/L	N/A	NONE	Erosion of natural deposits; discharge from drinking wasteland metal refineries
LEAD AND COPPER							
LEAD	2021	<5.0 ug/l	AL=15.0 ug/l	0	n/a	NONE	CORROSION OF HOUSEHOLD PLUMBING SYSTEMS
	Zero out of 30 samples was found to have lead levels in excess of the lead action level of 15ppb						
COPPER	2021	0.648 mg/l	AL=1.3 mg/l	AL=1.3 mg/l	n/a	NONE	CORROSION OF HOUSEHOLD PLUMBING SYSTEMS
	Zero out of 30 samples was found to have copper levels in excess of the copper action level of 1.3 ppm						
RESIDUAL DISINFECTANTS							
TOTAL CHLORINE	2021	1.06 mg/l	MRDL=4	MRDLG=4	.94-1.10 mg/l	NONE	WATER ADDATIVE TO CONTROL MICROBES
ORGANIC CONTAMINANTS (REGULATED)							
HALOACETIC ACID 5	2021	10.4ug/l	60 ug/L	N/A	nd-11.6 ug/l	NONE	BY PRODUCT OF DRINKING WATER CHLORINATION
THHMS	2021	38.48 ug/l	80 ug/L	N/A	10.2-50.70 ug/l	NONE	BY PRODUCT OF DRINKING WATER CHLORINATION
KEY TO ABBREVIATIONS							
MCL - MAXIMUM CONTAMINANT LEVEL - THE HIGHEST LEVEL OF CONTAMINANT ALLOWED IN DRINKING WATER							
MCLG - MAXIMUM CONTAMINANT LEVEL GOAL - THE LEVEL OF CONTAMINANT IN DRINKING WATER BELOW WHICH THERE IS NO KNOWN RISK TO HEALTH							
MRDLG-MAXIMUM RESIDUAL DISINFECTANT LEVEL GOAL;THE LEVEL OF RESIDUAL DISINFECTANT BELOW WHICH THERE IS NO KNOWN OR EXPECTED RISK TO HEALTH							
MRDL-MAXIMUM RESIDUAL DISINFECTANT LEVEL; THE HIGHEST RESIDUAL DISINFECTANT LEVEL ALLOWED							
AL - ACTION LEVEL - THE CONCENTRATION OF A CONTAMINANT WHICH TRIGGERS A TREATMENT OF OTHER REQUIREMENT WHICH A WATER SYSTEM MUST FOLLOW							
TT- TREATMENT TECHNIQUE-A REQUIRED PROCESS INTENDED TO REDUCE THE LEVEL OF A CONTAMINANT IN DRINKING WATER							
MG/L - MILLIGRAMS PER LITER (PPM)							
UG/L - MICROGRAMS PER LITER (PPB)							
N/R - NOT REGULATED							
PCI/L - PICO CURIES PER LITER, A MEASURE OF RADIOACTIVITY IN WATER							
MREM/YR. - MILLIREMS PER YEAR, A MEASURE OF RADIATION ABSORBED BY THE BODY							
ND - NOT DETECTABLE AT SAMPLE TIME							
NA - NOT APPLICABLE							
MRDLG - MAXIMUM RESIDUAL DISINFECTION LEVEL GOAL							

Table of Detected Contaminants

Listed below is information on those contaminants that were found in the **Brown County Rural Water Association** drinking water.

TABLE OF DETECTED CONTAMINANTS

Contaminants (Units)	MCLG	MCL	Level Found	Range of Detections	Violation	Sample Year	Typical Source of Contaminants
Residual Disinfectants							
Total Chlorine (ppm)	MRDLG = 4	MRDL = 4	1.21	1.13 - 1.28	No	2021	Water additive used to control microbes.
Inorganic Contaminants							
Nitrate (ppm)	10	10	0.79	NA	No	2021	Runoff from fertilizers, erosion of natural deposits.
Fluoride (ppm)	4	4	0.93	0.78- 1.2	No	2021	Water additive required by State of Ohio E.P.A.
Antimony (ppm)	0.006	0.006	<3	NA	No	2020	Discharge from refineries; fire retardants; ceramics; electronics
Arsenic (ppm)	0	0.010	<3	NA	No	2020	Erosion of natural deposits; runoff from industrial sites
Selenium (ppm)	0.05	0.05	<3	NA	No	2020	Discharge from refineries and mines; erosion of natural deposits.
Thallium (ppm)	0.0005	0.002	<1	NA	No	2020	Discharge from factories
Disinfection Byproducts							
Total Trihalomethanes (ppb)	NA	80	31.9	31.5 – 31.9	No	2021	By-product of drinking water chlorination.
HAA5 (ppb)	NA	60	<6	ND-3.1	No	2021	By-product of drinking water chlorination.

Lead and Copper								
Lead and Copper	MCLG	AL	90 th percentile	# of sites found above the AL	Range of Detections	Violation	Sample Year	Typical Source of Contaminants
Lead (ppb)	0	15	0.0	0-30	Nd – 8.9	No	2020	Corrosion of household plumbing systems.
Copper (ppm)	1.3	1.3	0.0	0-30	ND	No	2020	Corrosion of household plumbing systems.

Definitions of some terms contained within this report.

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

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

Parts per Billion (ppb) or Micrograms per Liter ($\mu\text{g/L}$) are units of measure for concentration of a contaminant. A part per billion corresponds to one second in 31.7 years.

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.

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.

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

The "<" 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.

Picocuries per liter (pCi/L): A common measure of radioactivity.

Terms used in the Table of Detected Contaminants and in other parts of this report are defined here.

Non-Detections (ND) - laboratory analysis indicates that the constituent is not detectable at the testing limits.

Parts per million (ppm) or Milligrams per liter (mg/l) – are units of measure for concentration of a contaminant. A part per million corresponds to one second in a little over 11.5 days.

Parts per billion (ppb) or Micrograms per liter - are units of measure for concentration of a contaminant. A part per billion corresponds to one second in 31.7 years.

Parts per trillion (ppt) or Nanograms per liter - are units of measure for concentration of a contaminant. A part per trillion corresponds to one second in 31,700 years.

Nephelometric Turbidity Unit (NTU) - nephelometric turbidity unit is a measure of the clarity of water. Turbidity in excess of 5 NTU is just noticeable to the average person.

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

Not Applicable (N/A)- does not apply.

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

Maximum Contaminant Level - The "Maximum Allowed" (MCL) is 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 - The "Goal" (MCLG) is 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 residual disinfectant level allowed.

Maximum Residual Disinfectant Level Goal (MRDLG) - The level of residual disinfectant below which there is no known or expected risk to health.

PFAS - Per- and polyfluoroalkyl substances (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.

Table of Detected Contaminants

Listed below is information on those contaminants that were found in the City of Wilmington PWS drinking water.

Regulated Contaminants (Units)	MCLG	MCL	Level Found	Range of Detections	Violation	Sample Year	Typical Source of Contaminants
Turbidity ¹ (NTU)	N/A	TT	0.16	0.03 - 0.16	No	2021	Soil Run off
Turbidity ¹ (% meeting standard)	N/A	TT	100%	100%-100%	No	2021	Soil Run off
Nitrate (ppm)	10	10	2.39	0.31 - 2.39	No	2021	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits
Fluoride (ppm)	4	4	0.95	0.47 – 1.07	No	2021	Erosion of natural deposits; additive to promote strong teeth
Total Organic Carbon	N/A	TT ²	3.56	3.22 – 4.14	No	2021	Organic Matter
TTHMs (ppb) [Trihalomethanes]	N/A	80 ³	65.8	32.2 – 78.1	No	2021	By-product of drinking water chlorination
HAA5 (ppb) [Haloacetic Acids]	N/A	60 ³	23.4	12.8 – 24.3	No	2021	
Lead (ppb)	AL = 15 90th percentile must be less than 15 ppb	0	90th percentile ND	ND – 13.6	No	2019	May come from erosion of natural deposits. Corrosion of household plumbing is a source of lead and copper contamination.
Copper (ppm)	AL = 1.3 90th percentile must be less than 1.3 ppm	1.3	90th percentile ND	ND - 0.87	No	2019	
Total Chlorine (ppm)	MRDLG 4	MRDL 4	2.31	1.93 - 2.45	No	2021	Element used for disinfection

¹Turbidity 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 and shall not exceed 1 NTU at any time. As reported above, the Wilmington Water System's highest recorded result for 2021 was 0.16 NTU and the lowest monthly percentage of samples meeting the turbidity limits was 100%.

²The value reported under "Level Found" for Total Organic Carbon (TOC) is the lowest ratio between percent of TOC actually removed to the percentage of TOC required to be removed. A value of greater than one (1) indicates that the water system is in compliance with TOC removal requirements. A value of less than one (1) indicates a violation of the TOC removal requirements.

³Maximum Contaminant Level for TTHMs and HAA5s is based on Locational Running Annual Average.

In 2021, our PWS was sampled as part of the State of Ohio's Drinking Water Per- and Polyfluoroalkyl Substances (PFAS) Sampling Initiative. Results from this sampling indicated PFAS were detected in our drinking water below the action level established by Ohio EPA. Follow up monitoring was conducted in 2021 and the samples indicated the results shown in the following table. For more information about PFAS, and to view our latest results, please visit pfas.ohio.gov.

Unregulated Contaminants (Units)	MCLG	MCL	Average Level Detected	Range of Detections	Violation	Sample Year	Typical Source of Contaminants
Perfluorooctanesulfonic acid (ppt)	N/A	N/A	7.4	ND – 14.4	N/A	2021	Man-made chemicals applied to products to make them waterproof, stain resistant, or nonstick as well as firefighting foam
Perfluorohexanesulfonic acid (ppt)	N/A	N/A	4.8	ND – 9.7	N/A	2021	
Perfluorooctanoic acid (ppt)	N/A	N/A	1.6	ND – 6.2	N/A	2021	

2021 CCR Data for GCWW Wholesale Customers

Regulated Contaminants¹: Contaminants subject to a Maximum Contaminant Level (MCL), Action Level (AL) or Treatment Technique (TT)²

Substance	Unit	Maximum Allowed (MCL, AL, TT) ³	Miller Water				Bolton Water				Typical Source of Contamination
			Highest Compliance Level Detected	Range of Detections	Violation	Year Sampled	Highest Compliance Level Detected	Range of Detections	Violation	Year Sampled	
Fluoride	ppm	4	0.88	0.71-1.01	No	2021	0.87	0.74-0.98	No	2021	Additive which promotes strong leath. May come from erosion of natural deposits. Runoff from fertilizer use, leaching from septic tanks, sewage, erosion of natural deposits. Soil runoff
Nitrate	ppm	10	1.00	0.88-1.00	No	2021	1.20	na ²	No	2021	
Turbidity	NTU	TT1 < 1 NTU Max and TT2 < 0.3 NTU 95% of the time	0.19	0.02-0.19	No	2021	nr	nr	No	na	
Total Organic Carbon ³	ppm	TT	1.97	1.89-3.21	No	2021	nr	nr	No	na	Naturally present in the environment.
Barium	ppm	2	0.030	na ²	No	2021	0.013	na ²	No	2021	Erosion of natural deposits; Discharge of drilling wastes; Runoff from glass and electronics production wastes.
Arsenic	ppb	10	1.4	na ²	No	2021	nd	na ²	No	2021	

Unregulated Contaminants¹ for which EPA requires monitoring to determine where certain substances occur and whether it needs to regulate these substances.

Substance	Unit	MCLG ²	Miller Water				Bolton Water			
			Average Level Detected	Range of Detections	Violation	Year Sampled	Average Level Detected	Range of Detections	Violation	Year Sampled
Chloroform	ppb	70	3.11	na ²	na	2021	1.51	na ²	na	2021
Bromodichloromethane	ppb	0	3.88	na ²	na	2021	3.41	na ²	na	2021
Dibromochloromethane	ppb	60	3.99	na ²	na	2021	7.01	na ²	na	2021
Bromoform	ppb	0	0.59	na ²	na	2021	6.03	na ²	na	2021
Sulfate	ppm	na	54	45 - 67	na	2021	39	36 - 40	na	2021

¹Detected contaminants from the plant tap

²GCWW collects one sample per year.

³The value reported under "Highest Compliance Level Detected" for Total Organic Carbon (TOC) is the lowest ratio between percentage of TOC actually removed to the percentage of TOC required to be removed. A value of greater than one (1) indicates that the water system is in compliance with TOC removal requirements. A value of less than one (1) indicates a violation of the TOC removal requirements.

Results of GCWW Voluntary Monitoring for *Cryptosporidium*:

GCWW has tested for *Cryptosporidium* (Crypto) in treated waters and has never detected it. Crypto is a microscopic microorganism that, when ingested, can result in diarrhea, fever and other gastrointestinal symptoms. GCWW also tested for Crypto in the Ohio River surface water and it was found in 1 of 12 samples during 2021. 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.

Sodium: GCWW has tested for sodium in treated water as it leaves the treatment plants and has found 29 mg (milligrams) per liter in the Miller water and 35 mg per liter in the Bolton water. There are approximately 4 cups in a liter.

Turbidity: We are required to report on the turbidity as an indication of the effectiveness of our filtration system. Turbidity is a measure of the cloudiness of water. The turbidity limit set by the EPA is 0.3 NTU in 95% of the samples analyzed each month, and shall not exceed 1 NTU at any time. As reported in the table above, GCWW's highest recorded turbidity result for 2021 was 0.19 NTU (Miller Water) and the lowest monthly percentage of samples meeting the turbidity limits was 100%.

GCWW has a current unconditional license to operate our water system. GCWW was in compliance with all state primary drinking water rules during 2021.

The Miller Treatment Plant uses the Ohio River as its source water. As with all surface waters, the Ohio EPA has classified the Ohio River as highly susceptible to contamination. The Ohio EPA has also classified the portion of the Great Miami Buried Valley Aquifer that supplies water to the well fields for the Bolton Treatment Plant as highly susceptible to contamination. It does not have an overlying protective clay layer, the ground water has low levels of nitrate, and there are potential sources of contamination nearby.

Abbreviations

- ppb: parts per billion or micrograms per liter
- ppm: parts per million or milligrams per liter
- na: not applicable
- NTU: Nephelometric Turbidity Unit, used to measure clarity in drinking water
- nd: not detectable at testing limits
- nr: not regulated

*Definitions

- Maximum Contaminant Level Goal or 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 Contaminant Level or MCL:** The highest level of a contaminant that is allowed in drinking water. MCLs are set as close to the MCLGs as feasible using the best available treatment technology.
- Action Level or AL:** The concentration of a contaminant, which, if exceeded, triggers treatment or other requirements which a water system shall follow.
- Treatment Technique or TT:** A method for treating water to achieve acceptable levels of the contaminants in lieu of establishing a maximum contaminant level.
- The < 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.