

# Marion Water Department

## Water Quality Report 2022

Water System ID: KY0280267  
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Meeting location and time:  
Marion City Hall 217 S Main St  
3<sup>rd</sup> Monday monthly at 6:00 PM

Marion Water Department treats surface water from Marion City Lake and Lake George. An analysis of Marion's water supply indicates that there are very few potential contaminant sites with the possibility of contaminating the water supply located within the watershed. Potential areas of concern are the impacts of agrichemicals, specifically atrazine. The city has made extensive public health notifications and increased monitoring. Atrazine levels have fallen to nearly zero due to conservation programs and a switch to non-atrazine based chemicals by area farmers. Other areas of concern located within the watershed are roads and highways which pose a risk due to the possibility of hazardous materials entering the water supply from traffic accidents, spills and illegal dumping. Households which are not connected to a public wastewater system present a source of contamination due to the possibility of failing septic systems. Farms located within the watershed present the possibility of siltation, pathogens, pesticides and fertilizer to enter the water supply. The complete Source Water Assessment Plan is available for review at the Marion Water Department.

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 (800-426-4791).

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, (sewage plants, septic systems, livestock operations, or wildlife). Inorganic contaminants, such as salts and metals, (naturally occurring or from stormwater runoff, wastewater discharges, oil and gas production, mining, or farming). Pesticides and herbicides, (stormwater runoff, agriculture or residential uses). Organic chemical contaminants, including synthetic and volatile organic chemicals, (by-products of industrial processes and petroleum production, or from gas stations, stormwater runoff, or septic systems). Radioactive contaminants, (naturally occurring or from oil and gas production or mining activities). In order to ensure that tap water is safe to drink, EPA prescribes regulations that limit the amount of certain contaminants in water provided by public water systems. FDA regulations establish limits for contaminants in bottled water to provide the same protection for public health.

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).

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. Your local public water system 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>.

### Some or all of these definitions may be found in this report:

**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 (N/A)** - 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.

**Variations & 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.

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

**To request a paper copy call (270) 965-2266.**

**To understand the possible health effects described for many regulated contaminants, a person would have to drink 2 liters of water every day at the MCL level for a lifetime to have a one-in-a-million chance of having the described health effect.**

The data presented in this report are from the most recent testing done in accordance with administrative regulations in 401 KAR Chapter 8. As authorized and approved by EPA, the State has reduced monitoring requirements for certain contaminants to less often than once per year because the concentrations of these contaminants are not expected to vary significantly from year to year. Some of the data in this table, though representative, may be more than one year old. **Copies of this report are available upon request by contacting our office during business hours.**

**Regulated Contaminant Test Results Marion Water Department**

Contaminant [code] (units)	MCL	MCLG	Report Level	Range of Detection	Date of Sample	Violation	Likely Source of Contamination
Barium [1010] (ppm)	2	2	0.021	0.021 to 0.021	Apr-22	No	Drilling wastes; metal refineries; erosion of natural deposits
Fluoride [1025] (ppm)	4	4	0.76	0.76 to 0.76	Apr-22	No	Water additive which promotes strong teeth
Nitrate [1040] (ppm)	10	10	0.311	0.311 to 0.311	Feb-22	No	Fertilizer runoff; leaching from septic tanks, sewage; erosion of natural deposits

**Disinfectants/Disinfection Byproducts and Precursors**

Total Organic Carbon (ppm) (measured as ppm, but reported as a ratio)	TT*	N/A	1.18 (lowest average)	0.67 to 1.42 (monthly ratios)	2022	No	Naturally present in environment.
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\*Monthly ratio is the % TOC removal achieved to the % TOC removal required. Annual average must be 1.00 or greater for compliance.

Chlorine (ppm)	MRDL = 4	MRDLG = 4	1.53 (highest average)	0.25 to 1.73	2022	No	Water additive used to control microbes.
HAA (ppb) (Stage 2) [Haloacetic acids]	60	N/A	55 (high site average)	29 to 117 (range of individual sites)	2022	No	Byproduct of drinking water disinfection
TTHM (ppb) (Stage 2) [total trihalomethanes]	80	N/A	85 (high site average)	35 to 176 (range of individual sites)	2022	YES	Byproduct of drinking water disinfection.

**Household Plumbing Contaminants**

Copper [1022] (ppm) Round sites exceeding action level 0	AL = 1.3	1.3	0.01 (90 <sup>th</sup> percentile)	0 to 0.1	Jul-20	No	Corrosion of household plumbing systems
Lead [1030] (ppb) Round 1 sites exceeding action level 0	AL = 15	0	3 (90 <sup>th</sup> percentile)	0 to 6	Jul-20	No	Corrosion of household plumbing systems

**Other Constituents**

Turbidity (NTU) TT * Representative samples	Allowable Levels	Highest Single Measurement	Lowest Monthly %	Violation	Likely Source of Turbidity
Turbidity is a measure of the clarity of the water and not a contaminant.	No more than 1 NTU* Less than 0.3 NTU in 95% of monthly samples	0.298	100	No	Soil runoff

Fluoride (added for dental health)	<b>Average</b>	<b>Range of Detection</b>
	0.8	0.61 to 0.96

Violation 2023-9739225

Since we are currently unable to use Lake George as our raw water source, we have been treating water from the old City Lake and purchasing water from Crittenden-Livingston Water District. We are experiencing higher than normal disinfection byproducts and this caused a violation for exceeding the MCL for total trihalomethanes (TTHM). We anticipate better values when our raw water source issue is resolved.

Some people who drink water containing trihalomethanes in excess of the MCL over many years may experience problems with their liver, kidneys, or central nervous system, and may have an increased risk of getting cancer. A public notice was distributed for this violation.

During 2022, when our City Lake reached very low levels, we purchased supplemental water from Crittenden-Livingston Co. Water District. We are including their information in our Water Quality Report.

<b>Regulated Contaminant Test Results - Crittenden-Livingston Co. Water District</b>							
<b>Contaminant [code] (units)</b>	<b>MCL</b>	<b>MCLG</b>	<b>Report Level</b>	<b>Range of Detection</b>	<b>Date of Sample</b>	<b>Violation</b>	<b>Likely Source of Contamination</b>
Barium [1010] (ppm)	2	2	0.025	0.025 to 0.025	2022	No	Drilling wastes; metal refineries; erosion of natural deposits
Fluoride [1025] (ppm)	4	4	0.79	0.79 to 0.79	2022	No	Water additive which promotes strong teeth
Nitrate [1040] (ppm)	10	10	0.75	0.75 to 0.75	2022	No	Fertilizer runoff; leaching from septic tanks, sewage; erosion of natural deposits
<b>Disinfectants/Disinfection Byproducts and Precursors</b>							
Total Organic Carbon (ppm) (measured as ppm, but reported as a ratio)	TT*	N/A	0.75 (lowest average)	0.79 to 1.69 (monthly ratios)	2022	YES	Naturally present in environment.
*Monthly ratio is the % TOC removal achieved to the % TOC removal required. Annual average must be 1.00 or greater for compliance.							
<b>Other Constituents</b>							
Turbidity (NTU) TT * Representative samples	<b>Allowable Levels</b>		<b>Highest Single Measurement</b>	<b>Lowest Monthly %</b>	<b>Violation</b>	<b>Likely Source of Turbidity</b>	
Turbidity is a measure of the clarity of the water and not a contaminant.	No more than 1 NTU* Less than 0.3 NTU in 95% of monthly samples		0.14	100	No	Soil runoff	

Violation 2022-9951921

Crittenden-Livingston received a violation for an inadequate TOC removal ratio during the fourth quarter of 2021. Since the compliance calculation involves an average of the previous twelve months, the first quarter of 2022 still had a value below the 1.00 required ratio.

Total Organic Carbon. Total organic carbon (TOC) has no health effects. However, TOC, provides a medium for the formation of disinfection byproducts. These byproducts include trihalomethanes (THM's), and haloacetic acids (HAA's). Drinking water containing these byproducts in excess of the MCL may lead to adverse health effects, liver or kidney problems, or nervous system effects, and may lead to an increased risk of getting cancer. Public notices were distributed for the violation.