

TROY

WATER TREATMENT

2022 Water Quality Report



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Introduction

The City of Troy Public Water System (PWS) is pleased to present this report and provide information on the quality of Troy's drinking water. Within this report is general health information, water quality test results for the period of January 1 – December 31, 2022, how to participate in decisions concerning your drinking water, and Troy's water system contacts. Our treated water quality meets or exceeds all of the standards that are set forth by the State of Ohio and the United States Environmental Protection Agency. Ground water is pumped to the Water Treatment Plant (WTP) where it is softened, clarified, disinfected, stabilized, and filtered prior to being pumped to our water consumers. In 2022, the treatment plant produced 1.4 billion gallons of water with an average finished water parameter of 115 parts per million (ppm) hardness, 67 ppm of alkalinity, and pH of 8.73. In addition to serving our Troy customers, we pumped 177.8 million gallons of drinking water to Miami County and 137.6 million gallons to West Milton and Ludlow Falls. In 2022 we had 33 main breaks repaired, 5 new taps made, 100 new services installed, and 419 customer high-usage alerts investigated.

Source Water Information

The City of Troy receives its drinking water from the Great Miami Buried Valley Aquifer (GMBVA). This is an enormous water-bearing sand and gravel formation associated with the Great Miami River. The GMBVA extends from north of Troy to the Ohio River, ranging from 30 to 300 feet in depth and from 1 to 3 miles wide. This aquifer is replenished by underground sources, precipitation, and riverbed filtration. Troy utilizes 10 production wells to pump water from this aquifer for treatment at the water plant. These wells are adjacent to the Great Miami River and are located at the Miami Shores Golf Course and the Troy Community Park.

The City of Troy started a source water monitoring program in 1984. In 1992, Troy developed a Wellhead Protection program. This identifies potential sources of groundwater contamination within a 5-yr. time of travel zone around our wells. We have 25 monitoring wells to test water quality beyond our well fields. Zoning regulations have been adopted to further reduce potential contamination within a 1-yr. time of travel zone. Effective public outreach efforts to inform our residents and businesses are also an important part of this plan for safe-guarding our vital water resource. In 2022 we sampled 19 of these wells, from which it would take a contaminant one year to reach our production wells, we also draw monthly samples for contaminants from each of our production wells. A Source Water Assessment and Protection (SWAP) Plan is a key component of Troy's wellhead protection and monitoring program. An update of this plan was completed in 2016, and approved by the Ohio EPA in 2017. In 2018, the City of Troy received recognition from the Ohio EPA for exceptional implementation of the Drinking Water Source Protection Plan. Due to the highly permeable sand and gravel formation above our aquifer, this SWAP plan designates our water supply with a high susceptibility rating. Safe public practices are thus extremely important in protecting our source water from surface contaminants. Copies of the source water assessment report prepared for City of Troy are available by contacting Gary Evans II or Ralph Walters at (937) 339-4826.

The City of Troy has an eight-inch interconnection through Miami County from Tipp City Public Water System that was not utilized in 2022.

What are sources of contamination to 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: (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 water 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, USEPA 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.

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 Federal Environmental Protection Agency's Safe Drinking Water Hotline (1-800-426-4791).

Who needs 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 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 infection. 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 (1-800-426-4791).

About your drinking water

The EPA requires regular sampling to ensure drinking water safety. The City of Troy conducted sampling for bacteria, nitrate, disinfection by-products, and volatile organics during 2022. Samples were collected for a total of thirty-one different contaminants most of which were not detected in the City of Troy water supply. 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. Some of our data, though accurate, are more than one year old.

Monitoring & Reporting Violations & Enforcement Actions

During 2022, City of Troy Water Treatment Plant did not have any monitoring or reporting violations.

In the 2018 CCR, City of Troy Water Treatment Plant had some incomplete or inaccurate data in the table of Detected Contaminants as follows:

- Barium was reported as detected at a level of 0.051 ppm in 2016 and should not have been included in the table as Barium was tested in 2018 and was not detected.
- Trans-1,2-dichloroethylene was reported as detected at a level of 0.08 ppb in 2018 and should not have been included in the table as Trans-1,2-dichloroethylene was not detected.
- HAA5 was reported as detected at a level of <6.0 ppb in 2018 which is a non-detectable level and should not have been included in the table.
- Nitrate was reported as detected at a level of 0.15 ppm in 2017 sampling and should not have been included in the table as Nitrate was tested in 2018 and was not detected.
- Cis-1,2-dichloroethethylene was reported as a detected at a level of 0.098 ppb in 2018, but should have been reported as 0.4 ppb. The range of detection was correct at 0.00-0.40.

In the 2019 CCR, City of Troy Water Treatment Plant had some incomplete or inaccurate data in the table of Detected Contaminants as follows:

- Cis-1,2-dichloroethethylene was reported as detected at a level of 4.1 ppb in 2019, but should have been reported as 0.3 ppb. The range of detection was also reported as 0.00 - 4.1 ppb, but should have been 0.00 - 0.3 ppb.
- Barium was reported as detected at a level of 0.048 ppm in 2019 and should not have been included in the table as Barium was tested in 2018 and was not detected.
- The 90th percentile for Lead of 0.45 ug/L was reported incorrectly. The calculated 90th percentile for Lead should have been reported as 0 ug/L.
- Fluoride was reported as detected at a level of 0.32 ppm in 2019 but should have been reported as 0.25 ppm based on 2018 compliance sampling data.

Table of Detected Contaminants

How to read the Water Quality Data Table: EPA establishes the safe drinking water regulations that limit the amount of contaminants allowed in drinking water. The table shows the concentrations of detected substances in comparison to regulatory limits. Substances that were tested for, but not detected, are not included in this table.

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

Contaminants (Units)	MCLG	MCL	Level Found	Range of Detections	Violation	Sample Year	Typical Source of Contaminants
Inorganic Contaminants							
Nitrate (ppm)	10	10	0.38	NA	No	2022	Runoff from fertilizer use; Leaching from septic tanks sewage; Erosion of natural deposits.
Fluoride (ppm)	4	4	0.36	NA	No	2021	Erosion of natural deposits; Discharge from fertilizer and aluminum factories.
Barium (ppm)	2	2	0.056	NA	No	2021	Discharge of drilling water; Discharge from metal refineries; Erosion of natural deposits.
Mercury (ppm)	2	2	0.1	NA	No	2021	Erosion of natural deposits; Discharge from refineries and factories; Runoff from cropland.
CIS-1,2 Dichloroethylene (ppb)	70	70	0.3	0.07 – 0.3	No	2022	Discharge from industrial chemical factories.

Contaminants (Units)	MCLG	MCL	Level Found	Range of Detections	Violation	Sample Year	Typical Source of Contaminants
Disinfection Byproducts							
Total Trihalomethanes TTHM (ppb)	NA	80	4.5	4.1 – 4.5	No	2022	By-product of drinking water chlorination.
Haloacetic Acids HAA5 (ppb)	NA	60	23.9	17.6 – 23.9	No	2022	By-product of drinking water chlorination.
Residual Disinfectants							
Total Chlorine (ppm)	MRDLG 4	MRDL 4	0.88	0.78 – 0.99	No	2022	Water additive used to control microbes.

Lead and Copper							
Contaminants (units)	Action Level (AL)	MCLG	Individual Results over the AL	90% of test levels were less than	Violation	Year Sampled	Typical source of Contaminants
Lead (ppb)	15	0	NA	<0.7	No	2022	Corrosion of Household plumbing systems; Erosion of natural deposits.
	0 out of 30 samples were found to have lead levels in excess of the lead AL of 15 ppb.						
Copper (ppm)	1.3	1.3	NA	0.034	No	2022	Corrosion of Household plumbing systems; Erosion of natural deposits.
	0 out of 30 samples were found to have copper levels in excess of the copper AL of 1.3 ppm.						

Violations

The City of Troy did not have any MCL, treatment technique, filtration or disinfection (CT) violation or action level exceedance during 2022.

Lead Educational Information

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 Troy 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 at 800-426-4791 or at <http://www.epa.gov/safewater/lead>.

Revised Total Coliform Rule (RTCR) Information

All water systems were required to begin compliance with a new rule, the Revised Total Coliform Rule, on April 1, 2016. The new rule maintains the purpose to protect public health by ensuring the integrity of the drinking water distribution system and monitoring for the presence of total coliform bacteria, which includes E. coli bacteria. The U.S. EPA anticipates greater public health protection under the new rule, as it requires water systems that are vulnerable to microbial contamination to identify and fix problems. As a result, under the new rule there is no longer a maximum contaminant level violation for multiple total coliform detections. Instead, the new rule requires water systems that exceed a specified frequency of total coliform occurrences to conduct an assessment to determine if any significant deficiencies exist. If found, these must be corrected by the PWS.

License to Operate (LTO) Status Information

In 2022 we had an unconditioned license to operate our water system.

Public Notice

City of Troy Water Treatment Plant has no public notifications that are required.

Public Participation and Contact Information

How do I participate in decisions concerning my drinking water?

Public participation and comments are encouraged at regular meetings of Troy City Council, which meets the first and third Mondays of each month at 7pm at 100 S. Market Street. For more information on your drinking water contact Gary Evans II or Ralph Walters at (937) 339-4826.

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.
- **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 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.
- **Action Level (AL):** The concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow.
- **Not Applicable (NA):** Indicates when information in a data table is not provided because it does not apply.
- **Treatment Technique (TT):** A required process intended to reduce the level of a contaminant in drinking water.
- **Contact Time (CT)** means the mathematical product of a “residual disinfectant concentration” (C), which is determined before or at the first customer, and the corresponding “disinfectant contact time” (T).

- Level 1 Assessment is a study of the water system to identify the potential problems and determine (if possible) why total coliform bacteria have been found in our water system.
- Level 2 Assessment is a very detailed study of the water system to identify potential problems and determine (if possible) why an E. coli MCL violation has occurred and/or why total coliform bacteria have been found in our water system on multiple occasions.
- 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 fire fighting 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.
- 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 ($\mu\text{g}/\text{L}$) are units of measure for concentration of a contaminant. A part per billion corresponds to one second in 31.7 years.
- 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.