

The City of Bowling Green draws surface water from the Maumee River during periods when the river supply is of high quality. The water is then stored in the City's 170 million gallon above-ground reservoir to be used at times when the river water quality is less desirable. The reservoir storage provides a means to supply consistently high quality water to the consumer. The water plant's operators work around the clock, 7 days a week to assure the quality of your drinking water.

## Source of Bowling Green's Water



The City of Bowling Green Water Treatment Plant has prepared the following report to provide information to you, the consumer, on the quality of our drinking water. Included in this report is general health information, water quality test results, how to participate in decisions concerning your drinking water, and water system contacts. The City of Bowling Green will notify you immediately if there is any reason for concern about the water.

## 2015 Water Quality Report



## City of Bowling Green



## Water Treatment Plant

**Water Treatment Plant:** 419-878-6986  
**Utilities Director:** 419-354-6246  
**Customer Service:** 419-354-6258

The City of Bowling Green has a current unconditional license to operate our Water System.

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.

The source of drinking water and bottled water includes rivers, lakes, streams, ponds, reservoirs, springs, and wells. As water travels over the surface of land or through the ground, it dissolves naturally-occurring minerals, and in some cases, radioactive materials, and can pick up substances from the presence of animals or human activity. Contaminants that may be present in source water include:  
 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 the water poses a health risk. meets or exceeds all Federal and State requirements. Your drinking water goes through a continuous monitored, 10-step multi-barrier treatment process, which takes several hours to complete.  
 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. Food and Drug Administration regulations establish limits for contaminants in bottled water which must provide the same protection for public health. It's important to remember that the presence of certain contaminants does not necessarily indicate that the water poses a health risk.

Nitrates in drinking water at levels above 10 ppm is a health risk for infants of 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. If you are caring for an infant you should ask advice from your health care provider.  
 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

D). Organic chemicals contaminants, including synthetic and volatile organic chemicals, which are byproducts 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.

### Lead in Drinking Water

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 Bowling Green 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 levels in your home's water, you may wish to have your water tested.

Although there is no detectable lead in our drinking water as it leaves the treatment plant, by the time it reaches your tap, lead levels may increase as a result of materials used in your home's plumbing. Infants and young children are typically more vulnerable to lead in drinking water than the general population. Additional information is available from the **Safe Drinking Water Hotline at 1-800-426-4791** or at <http://water.epa.gov/drink/hotline/index.cfm>

### Water Treatment Improvements

Bowling Green is underway on several additional improvements to the plant. Construction of a new membrane pumping station has already begun and we are in the design process for upgrades to the rapid sand filters. In May of 2016, we are replacing all of the Reverse Osmosis membranes in the Membrane Treatment Plant. Additionally, the carbon media in all 12 Granular Activated Carbon pressure tanks will be replaced in 2016 in preparation for the Harmful Algae Bloom season.

Design work for an additional Microfiltration train will occur in 2016 along with several electrical upgrades to the plant.



### Source Water Assessment

The City of Bowling Green public water system uses surface water drawn from an intake on the Maumee River. For the purposes of source water assessments, in Ohio, all surface waters are considered to be susceptible to contamination. By their nature, surface waters are readily accessible and can be contaminated by chemicals and pathogens which may rapidly arrive at the public drinking water intake with little warning or no time to prepare. The City of Bowling Green's drinking water source protection area contains potential contaminant sources such as runoff from agriculture, industrial storm water, gas stations, home construction, feed lots, wastewater treatment discharges, airports, cemeteries, auto repair shops, landfills, above ground storage tanks, railroads, roadways, and oil and gas wells.

The City of Bowling Green's public water system treats the water to meet drinking water quality standards, but no single treatment technique can address all potential contaminants. The potential for quality impacts can be further decreased by implementing measures to protect the Maumee River.

More detailed information is provided in the City of Bowling Green's Drinking Water Source Assessment report, which can be obtained by

The following table shows the results of our water-quality analysis. Every regulated contaminant that we detected in the water, even in the most minute traces, is listed here. The table contains the name of each substance, the highest level allowed by regulation (MCL), the ideal goals for public health (MCLG), the amount detected, the usual source of such contaminants, and a key to the units of measurement. This table does not show the numerous other contaminants we tested for, and **did not** detect in our water.

## Definitions

# 2015 Water Quality Data

Contaminant (Units)	Violation Y/N	Sample Year	MCL	Detected Level	Range of Detections	MCLG	Likely Source of Contamination
<b>Microbiological Contaminants</b>							
Turbidity (NTU)	No	2015	TT = 0.3	0.16	.05 - 0.16	NA	Soil Runoff
Turbidity (% samples meeting standards)	No	2015	TT	100%	100%	NA	
Total Organic Carbon (TOC)	No	2015	TT	2.50	2.5-2.9	NA	Naturally Present in the Environment

**Action Level** - The concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow.

**IDSE** - Initial Distribution System Evaluation is a one-time study conducted by water systems to identify distribution system locations with greater concentrations of trihalomethanes (THM's) and haloacetic acids (HAA's).

**Maximum Contaminant Level** - The "Maximum Allowed" (MCL) is the highest level of a contaminant that is allowed in drinking water. MCL's are set as close to the MCLG's 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. MCLG's allow for a margin of safety.

**Maximum Residual Disinfectant Level Goal (MRDLG)** - The level of drinking water disinfectant below which there is no known or expected risk to health. MRDLG's do not reflect the benefits of the use of disinfectants to control microbial contaminants.

**Maximum Residual Disinfectant Level (MRDL)** - The level of drinking water disinfectant below which there is no known or expected risk to health. MRDLG's do not reflect the benefits of the use of disinfectants to control microbial contaminants.

**NTU** - A unit of measure to determine the concentration of particles in the water that affect clarity.

**Parts per Million (ppm)** - Units of measure for concentration of contaminant. A part per million corresponds to one second in approximately 115 days.

**Parts per Billion (ppb)** - Units of measure for concentration of contaminant. A part per billion corresponds to one second in approximately 31.7 years.

**Treatment Technique (TT)** - A treatment technique is a required process intended to reduce the level of a contaminant in drinking water.

**Unregulated Contaminant Monitoring Rule (UCMR)** - An EPA program to collect data for contaminants that do not have health based standards set under the safe drinking water act.

<b>Inorganic Contaminants</b>							
Barium (ppm)	No	2015	2	0.016	NA	2	Discharges from metal refineries & of drilling wastes; Erosion of natural deposits
Copper (ppm)	No	2015	AL = 1.3	0.122	NA	1.3	Corrosion of household plumbing systems
Fluoride (ppm)	No	2015	4	1.22	0.80-1.22	4	Water additive which promotes strong teeth; Erosion of Natural Deposits
Lead ** (ppb)	No	2015	AL = 15	< 4	NA	0	Corrosion of household plumbing systems
** No lead sample sites out of 61 sites sampled were above the AL of 15 ppb.							
Nitrate (ppm) as Nitrogen	No	2015	10	4.73	0.20 - 4.73	10	Runoff from fertilizer use; sewage; erosion of natural deposits

<b>Volatile Organic Contaminants</b>							
Total Trihalomethanes TTHM (ppb)	No	2015	80	54.2	27.8 - 73.8	0	By-product of drinking water chlorination
Bromodichloro-methane (ppb)	No	2015	NR	5.7	NA	0	EPA regulations require us to monitor for these contaminants while EPA considers setting a limit on them.
Chloroform (ppb)	No	2015	NR	6.5	NA	0	
Dibromochloro-methane (ppb)	No	2015	NR	3.1	NA	0	
Haloacetic Acids (HAA5) (ppb)	No	2015	60	25.6	11.8 - 35.9	NA	
Dichloroacetic Acid (ppm)	No	2015	NR	21.4	5.9 - 21.4	NA	By-product of drinking water chlorination
Trichloroacetic Acid (ppm)	No	2015	NR	14.5	3.1 - 14.5	NA	
Dibromoacetic Acid (ppm)	No	2015	NR	3.9	1.0 - 3.9	NA	
Monobromoacetic Acid (ppm)	No	2015	NR	1.4	1.4	NA	

<b>Residual Disinfectants</b>							
Total Chlorine (ppm)	No	2015	MRDL	1.35	1.13 - 1.68	MRDL G 4.0	Water additive used to control microbes

TT Violation	Explanation	Length	Corrective Action	Health Effects Language
Failed to monitor continuously the filtrate turbidity of the microfiltration membrane in accordance with rules 3745-81-73(C) and 3745-91-08(G)(1)	On 9/10/15 staff was performing calibration on the Microfiltration Membrane Turbidity In-line Meters as required by the OEPA. After the calibration was performed, the operator failed to return the meter to active mode, which caused the meter to stay on hold position and record false turbidity readings in the SCADA data records.	9/10/15 thru 10/06/15	Implemented a manual 8-hour shift re-cording on paper for Pall Rack 1 & Rack 2 meter readings to alert operators of problems in the future. All fully chemical certified operators have been informed of their responsibilities as related to these turbidity meters. Engineering controls are being pursued within our new SCADA system to prevent this in the future.	This was not an emergency. Plant tap turbidity is also measured at the entry point of the water distribution system in which all effluent turbidities met all OEPA standards. If it had been an emergency, you would have been notified immediately. Turbidity has no health effects. However, turbidity can interfere with disinfection and provide a medium for microbial growth. Turbidity may indicate the presence of disease-causing organisms. These organisms include bacteria, viruses and parasites that can cause symptoms such as nausea, cramps, diarrhea, and associated headaches.

### Key to Table

AL = Action Level	ppm = parts per million, or milligrams per liter
MCL = Maximum Contaminant Level	ppb = parts per billion, or micrograms per liter
MCLG = Maximum Contaminant Level Goal	TT = Treatment Technique
MRDL = Maximum Residual Disinfectant Level	NTU = Nephelometric Turbidity Units
MRDLG = Maximum Residual Disinfectant Level Goal	NR = Not Regulated
< = A symbol that means less than	NA = Not available

**"<" Symbol** - A symbol which means less than. A result of <5 means that the lowest level that could be detected was 5 and that the contaminant in that sample was not detected.

Turbidity is a measure of the cloudiness of the 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. As reported above, Bowling Green's highest recorded turbidity result for 2015 was 0.16 and 100% of our samples met the turbidity limits.

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. At risk individuals 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 microbiological contaminants are available from the **Safe Drinking Water Hotline 1-800-426-4791**.

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 systems, and may have an increased risk of getting cancer.

Bowling Green's drinking water contains small amounts of naturally-occurring minerals such as calcium and magnesium. Fluoride is added to protect teeth as required by law.

The value reported in the table under "Detected Level" 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 indicates that the water system is in compliance with TOC removal requirements. A value of less than one indicates a violation of TOC removal requirements.

The City of Bowling Green encourages public interest and participation in our community's decisions affecting drinking water. Board of Public Utilities meetings are held regularly at 5:00 p.m. the second and fourth Mondays of each month at the City Administrative Services Building located at 304 North Church Street in the City Council Chambers. The public is welcome to attend these meetings to ask questions or express concerns as a lobby visitation if desired. Find out more about the City of Bowling Green on the internet at <http://www.bgohio.org/departments/utilities-department/water-treatment-plant>.