# 2006 Water Quality Report

# City of Bowling Green

# Water Treatment Plant


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


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 take immediate steps to notify you if there is any reason for concern about the water.

## Source of Bowling Green's Water

The City of Bowling Green draws surface water from the Maumee River during periods when the river supply is of high water 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 meets or exceeds all Federal and State requirements. Your drinking water goes through a continuously monitored, 10-step multi-barrier treatment process that takes several hours to complete.

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. 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

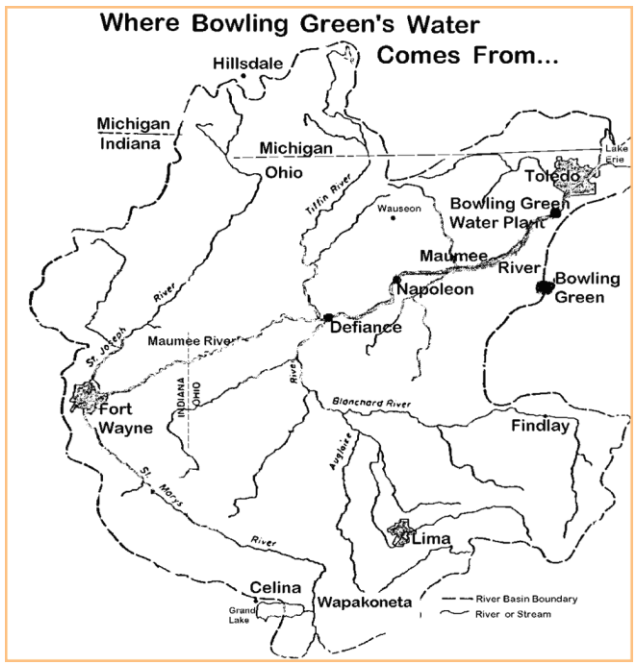
The City of Bowling Green continues to update and expand its Water Treatment Facility.

In 2006, design for a new river pumping station was started for the water treatment plant. This structure will increase our pumping capacity by 16 Million Gallons per day from the river into the reservoir. This increased capacity will allow the plant to draw water from the river only at times of low turbidity and nitrates.

The next project for the Water Treatment Plant is a pilot test using membranes. This process will determine if membrane treatment can be used with our source water to produce an even higher quality water for the consumers. The plant will perform a pilot study from July through September using two different systems to determine which one runs best in producing high quality water at the lowest operational and energy costs. With Environmental Protection Agency's approval of this system the production capacity of the plant may be increased by 3 to 4 MGD in 2009.

The treatment plant has installed security cameras that are monitored by the police division and the water plant operators. Automatic gates and motion detectors have also been installed.

*Best available technology* Membrane treatment for City of Bowling Green Water Treatment Process.




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

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.

## Membrane Improvements

The future drinking water treatment process in Bowling Green may include membranes. Water treatment processes employ several types of membranes. They include microfiltration (MF), ultra filtration (UF), reverse osmosis (RO), and nano filtration (NF) membranes. MF membranes have the largest pore size and typically reject large particles and various microorganisms. UF membranes have smaller pores and can reject bacteria. RO membranes are effectively non-porous and, therefore, exclude particles and even many low molar mass species such as organics.

## 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 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, waste water 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 calling (419)878-6986.

D). Organic 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. 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 are 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.

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. Infants and young children are typically more vulnerable to lead in drinking water than the general population. It is possible that lead levels at your home may be higher than at other homes in the community as a result of materials used in your home's plumbing. If you are concerned about lead levels in your home's water, you may wish to have your water tested, and flush your tap for 30 seconds to 2 minutes before using tap water. Additional information is available from the **Safe Drinking Water Hotline (1-800-426-4791)**.

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.

# 2006 Water Quality Data

| Contaminant (Units) | Violation Y/N | Sample Year | MCL | Detected Level | Range of Detections | MCLG | Likely Source of Contamination |
|---|---|---|---|---|---|---|---|
| **Microbiological Contaminants** | | | | | | | |
| Turbidity (NTU) | No | 2006 | TT=0.3 | 0.21 | .04 – 0.21 | NA | Soil runoff |
| Turbidity (% samples meeting standards) | No | 2006 | TT | 100% | 100 % | NA | |
| Total Organic Carbon (TOC) | No | 2006 | TT | 2.18 | 2.18 - 2.32 | NA | Naturally present in the Environment |
| **Inorganic Contaminants** | | | | | | | |
| Barium (ppm) | No | 2006 | 2 | 0.013 | NA | 2 | Discharges from metal refineries & of drilling wastes; Erosion of natural deposits |
| Copper (ppm) | No | 2006 | AL=1.3 | 0.072 | <.023-.246 | 1.3 | Corrosion of household plumbing systems |
| Fluoride (ppm) | No | 2006 | 4 | 1.21 | 0.84 - 1.21 | 4 | Water additive which promotes strong teeth; Erosion of natural deposits |
| Lead** (ppb) | No | 2006 | AL=15 | 4 | <4 - 12 | 0 | Corrosion of household plumbing systems |
| | ** No lead sample sites out of 35 sites sampled were above the AL of 15 ppb. | | | | | | |
| Nitrate (ppm) as Nitrogen) | No | 2006 | 10 | 7.46 | 1.33-7.46 | 10 | Runoff from fertilizer use; sewage; erosion of natural deposits |
| **Volatile Organic Contaminants** | | | | | | | |
| (Total Trihalomethanes) TTHM (ppb) | No | 2006 | 80 | 68.1 | 30.7 – 135 | 0 | By-product of drinking water chlorination |
| Bromo-dichlormethane (ppb) | No | 2006 | NR | 11.8 | NA | 0 | EPA regulations require us to monitor for these contaminants while EPA considers setting a limit on them. |
| Chloroform (ppb) | No | 2006 | NR | 23.8 | NA | 0 | |
| Dibromo-chloromethane (ppb) | No | 2006 | NR | 3.5 | NA | 0 | |
| Haloacetic Acids (HAA) (ppb) | No | 2006 | 60 | 33.6 | 7.6– 48.4 | NA | By-product of drinking water chlorination |
| **Synthetic Organic Contaminants** | | | | | | | |
| Atrazine (ppb) | No | 2006 | 3 | 0.077 | 0 - 0 .306 | 3 | Runoff from herbicide used on row crops |
| **Residual Disinfectants** | | | | | | | |
| Chlorine (ppm) | No | 2006 | MRDL 4.0 | 1.02 | 1.11 | MRDLG 4.0 | Water additive used to control microbes |

Data presented in this table is from the most recent monitoring done in compliance with regulations.

| **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 |

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 2006 was 0.21 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. 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 microbiological contaminants are available from the **Safe Drinking Water Hotline (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.

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 7:30 pm every 2nd and 4th Monday of each month, at the City Administrative Service Building located at 304 N. Church St. in the City Council Chambers. The public is welcome to attend these meetings and can address their concerns as a lobby visitation if desired. Find out more about the City of Bowling Green on the Internet at http://www.bgohio.org/water-treatment/index.html . Bowling Green's drinking water contains small amounts of naturally-occurring minerals such as calcium and magnesium. We add fluoride to protect your teeth (as required by law).

The value reported in the table under "Level Found" 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 the TOC removal requirements.

**Action Level**:

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

**Maximum Contaminant Level (MCL):**

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 (MCLG)** :

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 highest level of disinfectant allowed in drinking water. There is convincing evidence that the addition of a disinfectant is necessary for control of microbial contaminants.

**Parts per Million (ppm):**

A unit of measure for concentration of contaminant. A part per million corresponds to one second in approximately 11.5 days .

**Parts per Billion (ppb)**

A unit of measure for concentration of contaminant. A part per billion corresponds to one second in 31.7 years.

**Treatment Technique (TT)**

A treatment technique is a required process intended to reduce the level of a contaminant in drinking water.

**"<" 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.