



MIDDLETOWN
Bright past, brighter future **2010**
ANNUAL DRINKING WATER REPORT

The following report explains how drinking water provided to you continues to meet or exceed current USEPA and OEPA regulatory requirements. Included in this report is an explanation of where your water comes from, the contents of drinking water, and a listing of water quality test results with information on how to interpret the data.

Your drinking water comes from the Great Miami Buried Valley Aquifer. Thirteen production wells produce up to twenty million gallons per day of drinking water. The untreated well water is pumped to the Water Treatment Plant where it is softened using lime, disinfected with Chlorine, and then filtered through dual media water filters. Before the finished water is pumped to the residents of the City of Middletown, Fluoride is added as a measure to prevent tooth decay. Middletown has also established water supply connections with Warren County and the City of Monroe. These emergency connections were established for extraordinary conditions such as drought, source failure, line breaks, fires, and other periods of unusually high water demand.

The contents of 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 1-800-426-4791.

To ensure that tap water is safe to drink, EPA prescribes regulations that limit the amount of certain contaminants in drinking water provided by public water systems. Our dedicated team of certified operators and laboratory personnel monitor the treatment process and frequently test the water supply to make sure the highest standards for drinking water quality are met at all times. The Ohio Environmental Protection Agency requires Middletown to monitor for some contaminants less than once per year because the concentrations of these contaminants do not change frequently. The EPA requires regular sampling to ensure drinking water safety. The City of Middletown conducted sampling for the presence of bacteria, Lead and Copper, HAA5, TTHM, and Nitrate contaminants in 2010. In addition to annual sampling for over 18 regulated contaminants listed in this report, OEPA also requires sampling for unregulated contaminants to comply with the UCMR2 or Unregulated Contaminant Monitoring Regulation. All UCMR2 sample results were below the minimum detection limit of each contaminant.

Chlorination of drinking water began in the early years of the 20th Century in Great Britain, where its application sharply reduced Typhoid deaths. Shortly after this dramatic success, Chlorination of drinking water was introduced into the United States, which has resulted in the virtual elimination of waterborne diseases such as Cholera, Typhoid, Dysentery, and Hepatitis A. Chlorine has protected America's drinking water supply from waterborne infectious diseases for nearly a century. The certified operators at the City of Middletown's Water Treatment Plant make sure the water is properly Chlorinated. The average level of Chlorine found in the drinking water in 2010 was 0.68 ppm. The range of detections was from 0.22 ppm to 0.95 ppm.

Definition of terms contained in this report:

MCL = Maximum Contaminant Level (The highest level of a contaminant that is allowed in drinking water)

MCLG = Maximum Contaminant Level Goal (level below which there is no known or expected health risk)

ppm = Parts per million, or milligrams per liter (mg/L) **NA** = Not applicable **AL** = Action level

ppb = Parts per billion, or micrograms per liter (ug/L) **ND** = Not detected **n/r** = Not regulated

Maximum Contaminant Levels (MCLs) and **Maximum Contaminant Level Goals (MCLGs)** have been established by the EPA for many substances in drinking water. MCLs and MCLGs are based on scientific information about possible health effects of these substances. As shown in the table, the test results indicate contaminants in Middletown's drinking water are well below the MCLs. **The safe drinking water supplied by the City of Middletown consistently meets or exceeds established water quality standards.** Information concerning detected contaminants is listed in this report. Although a very small amount of contaminants were detected in the drinking water, the level at which they were detected poses no known or expected risk to 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 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)**.

Protecting our water source is one important way the City of Middletown limits contaminants in our drinking water. The Ohio Environmental Protection Agency (OEPA) recently completed a study of the City of Middletown's source of drinking water to determine its susceptibility. According to this study, the aquifer (water-rich zone) that supplies water to the City of Middletown has a high susceptibility to contamination. This determination is based on the following:

- < Lack of a protective layer of clay overlying the aquifer;
- < Shallow depth (less than 15 feet below ground surface) of the aquifer;
- < The presence of significant potential contaminant sources in the protection area; and
- < Past detections of manmade contaminants in Middletown's aquifer

The risk of future contamination is being minimized by implementing appropriate protective measures. The City of Middletown has developed and implemented a comprehensive **Wellhead/Source Water Protection Plan** to help prevent potential contamination from entering the aquifer. The protection plan contains an educational component, source control strategies, a contingency and emergency response plan, and ground water monitoring strategies. More information about the source water assessment or what consumers can do to help protect the aquifer is available by calling (513) 425-1860 or (513) 425-7781. 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 some 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 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, storm water runoff, and residential uses.
- (D) Organic chemical contaminants, including synthetic and volatile organics, 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.

Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. 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. Information on lead is available from the Safe Drinking Water Hotline (800-426-4791) or at <http://www.epa.gov/safewater/lead>. There are other sources of lead exposure, including paint chips. Lead was **not** detected in most of the samples collected at the City of Middletown homes.

How do I participate in decisions concerning my drinking water? Public participation and comments are encouraged at regular meetings of City Council or by calling one of the numbers listed below. Important information is also available on the web at www.cityofmiddletown.org.

For more information concerning your drinking water please contact:

Water Billing	(513) 425-7870 →Water Bills, water turned on or off — Daytime 8AM till 5PM
Water Distribution	(513) 425-1896 →Leaks or water pressure problems — Daytime 8AM till 4PM
Water Treatment Plant	(513) 425-7781 →Water Quality and after hour emergency calls
General Information	(513) 425-7766

Contaminants	Type	MCLG	MCL	Detected Level	Range	Violation
Fluoride	Inorganic	4.0 mg/L	4.0 mg/L	1.00 ppm	0.76-1.20 mg/L	No
Nitrate	Inorganic	10.0 mg/L	10.0 mg/L	1.38 mg/L	NA	No
Barium	Inorganic	2.0 mg/L	2.0 mg/L	0.0456 mg/L	NA	No
Total Trihalomethanes	Volatile Organic	NA	80 ppb	24.05 ppb	13.95 - 25.73 ppb	No
Bromoform	Volatile Organic	n/r	n/r	4.99 ppb	2.72 - 6.91 ppb	No
Chloroform	Volatile Organic	n/r	n/r	2.49 ppb	1.05 - 4.75 ppb	No
Dibromochloromethane	Volatile Organic	n/r	n/r	8.40 ppb	5.31 - 10.40 ppb	No
Bromodichloromethane	Volatile Organic	n/r	n/r	5.32 ppb	3.78 - 7.61 ppb	No
Total Haloacetic Acids	Volatile Organic	NA	60 ppb	<6 ppb	<6-6.77 ppb	No
Bromochloroacetic Acid	Volatile Organic	n/r	n/r	3.19 ppb	2.13 - 4.14 ppb	No
Dibromoacetic Acid	Volatile Organic	n/r	n/r	4.77 ppb	2.58 - 6.70 ppb	No
Dichloroacetic Acid	Volatile Organic	n/r	n/r	1.17 ppb	<1- 1.98 ppb	No
Lead	Inorganic	0 ppb	AL=15 ppb	<2 ppb	<2 - 7.83 ppb	No
Copper	Inorganic	1300 ppb	AL=1300 ppb	51.9 ppb	<5- 62.6 ppb	No
Total Chlorine	Disinfectant	4 mg/L	4 mg/L	0.68 mg/L	0.22 - 0.95 mg/L	No

Sample Year**Typical source of Contaminants**

2010	Water additive, which promotes strong teeth.
2010	Runoff from fertilizer use, Erosion of natural deposits.
2008	Erosion of natural deposits.
2010	Chlorination By-Product.
2010	Chlorination By-Product.
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2010	Chlorination By-Product.
2010	Chlorination By-Product.
2010	Chlorination By-Product.
2010	Chlorination By-Product.
2010	Chlorination By-Product.
2010	Chlorination By-Product.
2010	Corrosion of household plumbing.
2010	Corrosion of household plumbing.
2010	Water additive used to control microbes.