

2010



## About your drinking water

The City of Berea public water system has prepared the following report on the quality of our drinking water. Included is general health information, water quality test results, suggestions on how you can participate in decisions concerning your drinking water and how to contact us.

Public comments are encouraged at regular meetings of Berea City Council, which meets on the first and third Mondays of each month, except in July and August.

For more information on this report, contact Sandra Voza r, P.E., Water Treatment Superintendent, at (440) 234-5652 or e-mail [waterplant@cityofberea.org](mailto:waterplant@cityofberea.org)



## Where does my water come from?



*Baldwin Lake*

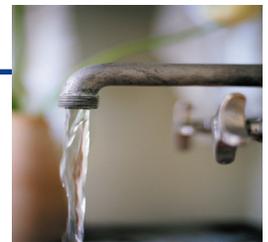
The City of Berea public water system (PWS No. 18000111) uses surface water drawn from the East Branch of the Rocky River. Water also can be drawn from Coe Lake and Baldwin Creek when needed.

Surface waters are susceptible to contamination. Sources of contamination include urban and agricultural runoff, industrial sources, oil and gas production, sanitary sewer overflows, municipal wastewater treatment discharges and septic systems, train and motor vehicle accidents or spills.

The City of Berea public water system treats the water to meet drinking water quality standards, but no single treatment technique can address all potential contaminants. More detailed information is provided in Berea's Drinking Water Source Assessment report, available by contacting the Ohio EPA at (800) 686-6330, by going to [epa.state.oh.us/ddagw/pdu/swap](http://epa.state.oh.us/ddagw/pdu/swap) or by calling the Berea water plant superintendent at (440) 234-5652.

## Is your home adding lead to your water?

Elevated lead levels may pose serious health risks for children and pregnant women. Lead in drinking water is mainly from service lines that connect your home to the water main and home plumbing. While the Berea Water Department is responsible for delivering high quality water, it is not responsible for your home plumbing materials or faucet fixtures. To minimize exposure to lead in the water, flush the tap water for at least 30 seconds before using it.



*Potential lead exposure can be minimized by flushing your tap water for 30 seconds.*

*Mayor*  
**Cyril M. Kleem**

*Director of Public Service*  
**R. James Brown**

*Water Superintendent*  
**Sandra O. Voza r, P.E.**

*Distribution Superintendent*  
**Dan Ticherich**

### Water Service Contact Numbers:

Water Billing: (440) 891-3308

Water Main Breaks (Daytime): (440) 826-5853

(After 3:30 p.m. and weekends): (440) 234-5652

Water Meter Repair: (440) 891-3308

Water Treatment Plant: (440) 234-5652

# Berea continues to upgrade water plant



*Berea's new carbon filtration building*

During the past year, the City of Berea completed two major projects at the Dr. Dimiter Ramandanoff Water Treatment Plant. The new Granular Activated Carbon Building has added another filtration step to the water treatment process, resulting in improvements in odor and taste. The new 800,000-gallon above-ground storage tank ensures that clean water is available when the older 1 million-gallon tank is out of service for maintenance and cleaning. Our water treatment process is state-of-the-art. Despite that, there are times when the water at the tap may appear discolored. A major cause of discoloration is aging cast iron water lines and the water line breaks that occur mainly in the winter. While the City of Berea is proactively replacing those lines, such a project is costly and takes many years to complete. Water quality issues also can be caused by older pipes within the house. Those should be looked at and possibly replaced by your plumber. The water is tested at a minimum of every four hours by water plant personnel to ensure that the water leaving the water plant and the water at the tap meet or exceed EPA quality guidelines. To further enhance Berea water quality, the water plant will add Ultraviolet Light to the disinfection process. UV light is most effective against bacteria, viruses and some cysts and inactivates common viruses such as polio and hepatitis. This complements chemical disinfection, such as chlorine dioxide.

This annual Consumer Confidence Report, required by the Safe Drinking Water Act, will explain where your drinking water comes from and how we keep it safe. If you have any questions or concerns, please call me at City Hall, (440) 826-5816 or e-mail [jbrown@cityofberea.org](mailto:jbrown@cityofberea.org).

R. James Brown, Director of Public Service

## Definitions

The EPA requires regular sampling to ensure drinking water safety. The chart on the next page contains information on those contaminants that were found in the City of Berea Water System.

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.

Parts per Million (ppm) or Milligrams per Liter (mg/L): 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 (µg/L): Units of measure for concentration of a contaminant. A part per billion corresponds to one second in 31.7 years.

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.

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.

Treatment Technique (TT): A required process intended to reduce the level of a contaminant in drinking water.

Action Level (AL): The concentration of a contaminant that, if exceeded, triggers treatment or other requirements which a water system must follow.

Nitrate: Measurements in water above 10 ppm is a health risk to infants less than six months and can cause blue baby syndrome. Levels may rise quickly for a short time due to rain. Ask for advice from your doctor if you are caring for an infant.

- (A) Turbidity is the measure of the cloudiness of water and the effectiveness of our filtration system. The highest recorded result for 2010 was 0.25 NTU. It shall not exceed 5 NTU at any time.
- (B) Total trihalomethanes and haloacetic acids are reported as the highest annual rolling average and highest and lowest quarterly measurement.
- (C) Value reported under level found for Total Organic Carbon is lowest ratio between percentage of TOC actually removed to percentage of TOC required to be removed. A value of greater than (1) indicates that the water system is in compliance with TOC removal requirements. NOTE: We are required by USEPA to test unregulated contaminants under UCMR Rule 2. We conducted testing in 2009 for four consecutive quarters as required and there were no significant findings.

# Sampling Berea's drinking water

The City of Berea public water system has a current, unconditioned license to operate our water system and conducted sampling for bacteria, inorganic, synthetic organic and volatile organic contaminants during 2010. Samples were collected for 95 different contaminants, most of which were not detected in the City of Berea public 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.

Contaminants (Units)	MCLG	MCL	Level Found	Range of Detections	Violation	Sample Year	Typical Source of Contaminants
<b>Bacteriological</b>							
Turbidity (NTU)	NA	TT	.25	0.09-0.25	NO	2010	Soil run off
Turbidity % meeting standard See (A)	NA	TT	100%	100%	NO	2010	
Total Organic Carbon See (C)	NA	TT	2.1	1.0-2.1	NO	2010	Naturally present in the environment
<b>Inorganic Contaminants</b>							
Flouride (ppm)	4	4	1.09	0.78-1.09	NO	2010	Erosion of natural deposits, additive which promotes strong teeth
Chlorite (ppm)	0.08	1.0	0.93	0.00-0.93	NO	2010	By-product of drinking water chlorination
Nitrate (ppm)	10	10	8.4	1.4-8.4	NO	2010	Run off from fertilizer and animal grazing
Copper (ppm)	1.3	AL=1.3	0.03*	NA	NO	2008	Corrosion of household plumbing systems; erosion of natural deposits.
(*90 <sup>th</sup> percentile ) Zero out of 30 samples in excess of the Action Level.							
Lead (ppb)	15	AL=15	6.4*	NA	NO	2008	
(*90 <sup>th</sup> percentile) One out of 30 samples in excess of the Action Level							
<b>Volatile Organic Contaminants</b>							
HAA5 (ppb) See B	NA	60	28.3	2.9-35.2	NO	2010	By-product of drinking water chlorination
TTHMs (ppb) See B	NA	80	72.4	14.7-144.9	NO	2010	
<b>Average Range</b>							
Chloroform (ppb)	NA	NA	22.9	.65-69.1	NO	2010	By-product of drinking water chlorination
Bromoform (ppb)	NA	NA	4.5	2.7-7.2	NO	2010	
Bromodichloromethane (ppb)	NA	NA	18.8	2.6-38.2	NO	2010	
Dibromochloromethane (ppb)	NA	NA	15.9	6.4-28.3	NO	2010	
<b>Residual Disinfectants</b>							
Total Chlorine (ppm)	4	4	0.92	0.71-1.25	NO	2010	Water additive to control microbes
Chlorine Dioxide (ppb)	800	800	0.32	0.0-0.32	NO	2010	
<b>Initial Distribution System Evaluation</b>							
IDSE TTHM	NA	NA	NA	26.2-139.4	NO	2009	By-product of drinking water chlorination
IDSE HAA5	NA	NA	NA	10.1-45.5	NO	2009	

City of Berea  
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Berea, OH 44017

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2010 Water Quality Report Inside

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## Sources of contamination to drinking water

Sources for tap water and bottled water can be contaminated as they travel over the surface or through the ground. The water dissolves naturally occurring minerals and in some cases radioactive material plus waste from animals and humans.

Contaminants may include:

- Microbes: viruses, bacteria, Cryptosporidium, Giardia, which come from sewage treatment plants, septic systems, livestock and wildlife.
- Inorganics: salts and metals, which can occur naturally or result from urban storm runoff, industrial or domestic wastewater discharges, oil and gas production, mining or farming.
- Pesticides and herbicides.
- Organic chemicals: synthetic and volatile chemicals that are byproducts of industry, petroleum production, gas stations, urban water runoff and septic systems.
- Radioactive material: can occur naturally or be the result of oil and gas production and mining.

The EPA regulations limit the amount of certain contaminants in

drinking water. The FDA regulates contaminants in bottled water. Both can be expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily mean the water poses a health risk.

## Taking special precautions

Some people may be more vulnerable to contaminants in drinking water. Immuno-compromised people such as those undergoing chemotherapy, those 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 from their health care providers about drinking water. EPA/CDC guidelines on how to lessen the risk of infection from Cryptosporidium and other microbial contaminants are available from the Safe Drinking Water Hot Line, (800) 426-4791.

## Berea monitors for Cryptosporidium

Berea monitored for Cryptosporidium in 2008, 2009, and 2010. Crypto was found in 10 of 24 samples collected from the East Branch of the Rocky River. Cryptosporidium is a microbial pathogen found in surface water throughout the United States. Filtration cannot guarantee 100% removal. Berea is not required to test the finished water for Cryptosporidium. Current test methods do not indicate whether the organisms are dead or are capable of causing disease. Symptoms of infection include nausea, diarrhea and cramps. Cryptosporidium must be ingested to cause disease, and it may be spread through means other than drinking water. Berea plans on utilizing UV disinfection to additionally protect against Crypto.



Carbon filter tanks add another step to the water treatment process.