

**Bardstown Municipal Water Department
PWSID#KY0900017
2007 Water Quality Report**

The City of Bardstown's Water Treatment Plant is pleased to present this year's Annual Water Quality Report. We encourage you to take a few minutes to review the contents of this report, so that you will also see that meeting your expectations for high quality water is our first priority. The quality of our water far exceeds the standards set by state and federal regulations. Last year our Certified Operators performed more than 70,000 sample analyses on our drinking water, along with the 800 tests that our Certified Laboratory did for compliance. This report is designed to inform the public about the quality of water and services provided on a daily basis. Our commitment is to provide our customers with a safe, clean, and reliable supply of drinking water. We would like the public to be assured that we will continue to monitor, improve, and protect the water system and deliver high quality water direct from the tap.

We know that water is the most indispensable product in every home and we ask everyone to help us in our efforts to protect the water source and the water system. Please report any suspicious activity that you may see around water storage tanks, fire hydrants, pump stations or Sympson Lake to Law Enforcement Agencies or City Hall employees. Informed consumers are our best allies in maintaining safe drinking water. We encourage public interest and participation in our community's decisions affecting drinking water. Regular City Council meetings occur on the second and fourth Tuesdays of the month, at the City Annex Building, 220 North Fifth Street at 7:00 P.M. If you want further information or want to discuss matters included in this report, please contact George Greenwell at 502-348-5947, Wayne Kendall or Geronimo Afbale at 502- 348-3064.

Water Source

Our water comes entirely from surface water sources – Sympson Lake and the Beech Fork River. An 8.8 square mile area of the Buffalo Creek watershed feeds Sympson Lake. A 669 square mile area extending upstream from Bardstown toward Chaplin, Springfield and Lebanon feeds the Beech Fork River Pumping Station. 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 and through the ground, it dissolves naturally occurring minerals and, in some cases, radioactive minerals, and may pick up substances resulting from the presence of animals or from human activity.

Contaminants that may be present in our source water include:

- a. Microbial contaminants, such as viruses and bacteria that may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife.
- b. Inorganic contaminants, such as salts and metals, that can be naturally-occurring or result from urban stormwater 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 stormwater 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 stormwater runoff, and septic systems.
- e. Radioactive contaminants, which can be naturally-occurring or be the result of oil and gas production and mining activities.

To ensure that tap water is safe to drink, U.S. EPA prescribes regulations that limit the amount of certain contaminants in water provided by public water systems. FDA regulations establish limits for contaminants in bottled water that shall provide the same protection for public health.

A source water assessment of the system's susceptibility to potential sources of contamination has been completed. Following is a summary of the system's susceptibility to contamination, which is a part of the completed Source Water Assessment Plan (SWAP). The completed plan is available for inspection at the Lincoln Trail Area Development District, 613 College St. Rd., Elizabethtown, KY 40601, or by telephone at 270-769-2393. The Bardstown Municipal Water Department withdraws approximately five (5) million gallons per day of raw water from Sympson Lake. Areas of high concern at the raw water intake consist of row crops, bridges and culverts, urban and recreational grasses. These *high areas of concern* do not represent a danger to the environment. It has the potential for chemical spills, leaks, or hazardous material accidentally spilling into the water source that gives these sites the susceptibility ranking of *high*. However, when all aspects of the source assessment are analyzed, the overall ranking for Bardstown's water source is *moderate*.

A Message from the EPA

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

Additional Health Information

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 microbial contaminants are available from the Safe Drinking Water Hotline (1 -800-426-4791).

An Explanation of the Water-Quality Data Table

The Bardstown Municipal Water Department routinely monitors for constituents in your drinking water according to Federal and State laws. This table shows the results of our required monitoring for the period of 01/01/2007-12/31/2007. It is important to remember that the presence of these constituents does not necessarily pose a health risk. The table shows the results of our water-quality analysis. Every regulated contaminant that we detected in the water, even in the minutest 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, the amount detected, the usual sources of such contamination, footnotes explaining our findings, and a key to units of measurement.

Definitions and Abbreviations

Maximum Contaminant Level or MCL - the highest level of a contaminant that is allowed in drinking water. MCLs are set as close to the MCLGs as feasible using the best available treatment technology.

Maximum Contaminant Level Goal or MCLG - the level of a contaminant in the drinking water below which there is no known or expected risk to health. MCLGs allow for a margin of safety.

Maximum Residual Disinfectant Level or 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 or MRDLG - the level of a 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 or AL - the concentration of a contaminant, which, if exceeded, triggers the treatment or other requirements, which a water system must follow.

Treatment Technique or TT - A required process intended to reduce the level of a contaminant in drinking water.

NTU - Nephelometric Turbidity Units. NTU is a measure of the cloudiness of water. Low turbidity is an indicator of the effectiveness of the filtration process.

ppm - parts per million, or milligrams per liter (mg/l)

ppb - parts per billion, or micrograms per liter (ug/l)

pCi/l - picocuries per liter (a measure of radioactivity)

N/A - Not Applicable

The Bardstown Water Treatment Plant is currently monitoring for Cryptosporidium and Giardia which are microscopic organisms that, when ingested, may cause gastrointestinal symptoms in some people. We started sampling for these organisms in October 2007 and will continue through September 2009 as required by the Long Term 2 Enhanced Surface Water Treatment Rule.

There were no positive coliform samples among the 480 samples taken in 2007.

The data presented in this report is from the most recent testing done in accordance with administrative regulations in 401 KAR Chapter 8. As authorized and approved by EPA, the State has reduced monitoring requirements for certain contaminants to less often than once per year because the concentrations of these contaminants are not expected to vary significantly from year to year. Some of the data in this table, though representative, may be more than one year old. Unless otherwise noted, the report level is the highest level detected

	Allowable Levels	Highest Single Measurement	Lowest Monthly %	Violation	Likely Source
Turbidity (NTU) TT	No more than 1 NTU Less than 0.3 NTU in 95% of monthly samples	0.16	100	No	Soil runoff

REGULATED CONTAMINANT TEST RESULTS

Contaminant [code] (units)	MCL	MCLG	Level Found	Range of Detection	Date of Sample	Violation Yes/No	Likely Source of Contamination
Microbiological Contaminants							
Total Coliform Bacteria [3100] (% positive samples)	5 %	0	0	0	1/2/07 to 12/28/07	No	Naturally present in the environment

Radioactive Contaminants							
Contaminant [code] (units)	MCL	MCLG	Level Found	Range of Detection	Date of Sample	Violation Yes/No	Likely Source of Contamination
Alpha emitters [4000] (pCi/l) ^a	15	0	5.8 +/- 1.5	0 - 7.3	2/20/02 to 11/6/02	No	Erosion of natural deposits
Combined radium (pCi/l) ^a	5	0	1.9 +/- 0.8	0.8 - 2.7	2/20/02 to 11/6/02	No	Erosion of natural deposits
Inorganic Contaminants							
Barium [1010] (ppm)	2	2	.037	0.037 to 0.037	3/7/07	No	Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits
Copper [1022] (ppm) (# sites exceeded the AL) ^b	AL=1.3 ^b	1.3	0.048 (90 th percentile)	.001 -.098 0 sites exceed AL	9/10/04	No	Corrosion of household plumbing systems, erosion of natural deposits; leaching from wood preservatives
Fluoride [1025] (ppm)	4	4	1.34 (maximum)	0.89 to 1.34	Aug (highest month)	No	Water additive which promotes strong teeth
Lead [1030] (ppb) (# sites exceeded the AL) ^b	AL= 15 ^b	0	2 (90 th percentile)	0 - 6.0 0 sites exceed AL	9/10/04	No	Corrosion of household plumbing systems, erosion of natural deposits
Nitrate (as Nitrogen) [1040] (ppm)	10	10	1.48 (maximum)	1.48 to 1.48	03/07/07	No	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits
Disinfectants/Disinfection Byproducts and Precursors							
Total Organic Carbon (ppm) (measured as ppm, but reported as a ratio)	TT*	N/A	1.71 (lowest average)	0.61 - 3.21	Jan-Dec 2007	No	Naturally present in the environment
* Monthly ratio is the % TOC removal achieved to % TOC removal required. Annual average of the monthly ratio must be 1.00 or greater for compliance							
Chlorine (ppm)	MRDL 4	MRDLG 4	0.96 (highest average)	0.2 - 2.62	1/4/07 to 12/28/07	No	Water additive used to control microbes.
Haloacetic acids or HAA (ppb) ^c	60 ^c	N/A	53 (highest average)	13 - 78	1 st QTR-4 th QTR 2007	No	By-product of drinking water Chlorination
TTHM [total trihalomethanes] (ppb) ^c	80 ^c	N/A	56 (highest average)	29 - 89	1 st QTR-4 th QTR 2007	No	By-product of drinking water chlorination

^a **Radioactive Contaminants**– The data presented in this report are from the most recent testing done in accordance with the administrative regulations in 401 KAR Chapter 8. Our next compliance monitoring for Gross Alpha particle activity and Combined Radium should be conducted in the first calendar quarter of 2010.

^b **Lead and Copper** sampling will resume within the first six months of 2008 due to the addition of blended sodium polyphosphate to the treatment process. Although we were on a reduced monitoring schedule before the phosphate pilot testing started, it is possible that lead and copper levels at your home are higher because of materials used in your plumbing. If you are concerned about the possibility of elevated levels of lead and copper, run your faucet for two (2) minutes before using your water. Use cold water for drinking, cooking and preparing baby formulas.

^c The current MCL for **Total Trihalomethanes** (TTHM) is 80 ppb and for **Haloacetic Acids** (HAA) is 60 ppb respectively. The results shown above are reported in a rolling annual average, which is the average of the quarterly tests for the most recent quarters. Although the TTHM's and HAA's annual average in our water is below the MCL, it has been detected above the MCL at times in certain quarters.

Some people who drink water containing TTHM's and HAA's 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. To understand the possible health effects described for many regulated constituents, a person would have to drink two (2) liters of water everyday at the MCL level for a lifetime to have a one-in-a-million chance of having an adverse health effect.

Bardstown's Water Treatment Plant received two Notices of Violations for the year of 2007.

The first Notice of Violation was for failure to submit analytical results for Odor, for the compliance period 01/01/2007 – 12/31/2007. Samples for secondary analysis (which include odor) were collected by a Certified Laboratory, however the laboratory failed to perform the test, and was inadvertently overlooked by the Bardstown Water Department. As a corrective measure we will review all data from the laboratory to make sure all secondary analysis are performed. Current MCL for Odor is 3 TON (Threshold Odor Number). A follow up analysis for Odor was taken in February 6, of 2008 with a result of less than one (<1) TON (Threshold Odor Number).

The second Notice of Violation was for a failure to submit analytical results for Dioxin (2,3,7,8-TCDD) for the compliance period 01/01/2005-12/31/2007. A Certified Laboratory collected samples for Synthetic Organic Chemicals, however the laboratory failed to perform the test for Dioxin, and was inadvertently overlooked by the Bardstown Water Department. Some people who drink water containing dioxin in excess of the MCL over many years could experience reproductive difficulties and may have an increased risk of getting cancer. We monitored for four quarters in 2007 for Dioxin and all results were below detection levels. We started testing again in March of 2008 and results were below detection levels (BDL). We will continue to monitor for three more quarters in 2008. As a corrective measure the Bardstown Water Department will review all data from the laboratory to make sure all Synthetic Organic Chemical analyses are performed.