

## **Municipal Water Department PWSID# KY0900017 Water Quality Report for Year 2019**

The Bardstown Municipal Water Department is pleased to present this Annual Water Quality Report. This report is designed to inform you about the quality of water and services we deliver to you every day. We strive to provide our customers with a safe and dependable supply of drinking water.

### **2019 Water Quality Improvements**

We want you to be aware of the continued efforts made to improve our water system and to protect our water resources. The mission of Bardstown's maintenance program is to improve water quality and increase the longevity of the water system. To this end the City recently completed a \$798,350 project to paint and repair two Water Tanks located at the old fairgrounds site on US-31E / Louisville Road and at the Nelson County Industrial Park between Parkway Drive and the Bluegrass Parkway. The Tanks were painted during the Summer-Fall of 2019 using an eye-catching new color scheme that will protect the tanks from corrosion and help preserve their structural integrity for years to come. 2019 Was also been the first full year that the City utilized Chloramines as part of the disinfection process which has helped keep water compliant with State and Federal requirements all the way to the extremities of the distribution system. Our Plant operators have been utilizing the latest technology for tracking daily monitoring samples taken throughout the system to ensure we are providing the best-quality drinking water to you. Bardstown continues its routine maintenance, tank inspections, and our water line replacement programs to help combat aging infrastructure. All of these efforts allowed Bardstown to maintain DBP compliance in 2019. Thank you for your continued support.

We know that water is the most indispensable product in every home and we ask everyone to be conservative and 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, at the City Annex Building, 116 North Fifth Street at 6:00 P.M.



Bardstown Fairgrounds Tank



Nelson County Industrial Park Tank

The staff at the Bardstown Water Treatment Plant work around the clock to provide top quality water to every tap. If you want further information or want to discuss matters included in this report, please contact Jessica Filiatreau at 502-348-5947 or Timothy Sneed 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.

### **Source Water Assessment**

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 four and a half (4 ½) million gallons per day of raw water from Sympson Lake. Areas of high concern at the 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 is 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.

### **For Additional Information Please Contact**

220 N. 5th St. Bardstown, KY 40004 (502) 348 5947  
<https://www.cityofbardstown.org/government/departments/water>

## Water-Quality Data Tables

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 January 1st to December 31st, 2019. 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.

The data presented in this report, unless otherwise noted, is from January 1 – December 31 of 2019 and is from the most recent testing performed 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. A complete list of all our analytical results is available upon request.							
	<b>Allowable Levels</b>	<b>Highest Single Measurement</b>	<b>Lowest Monthly %</b>	<b>Compliance Achieved</b>	<b>Likely Source</b>		
Turbidity (NTU) TT	No more than 1 NTU Less than 0.3 NTU in 95% of monthly samples	0.30	100%	Yes	Soil runoff		
<b>Regulated Contaminant Test Results</b>							
<b>Contaminant [code] (units)</b>	<b>MCL</b>	<b>MCLG</b>	<b>Level Found</b>	<b>Range of Detection</b>	<b>Date of Sample</b>	<b>Compliance Achieved</b>	<b>Likely Source of Contamination</b>
<b>Radioactive Contaminants</b>							
<sup>226</sup> Combined Radium (pCi/L)	5	0	1.40	1.4 to 1.4	June 2019	Yes	Erosion of natural deposits
<b>Inorganic Contaminants</b>							
Barium [1010] ppm	2	2	0.020	0.020 to 0.020	June 2019	Yes	Drilling wastes; metal refineries; erosion of natural deposits
<sup>63</sup> Copper [1022] (ppm) (0 Sites exceeded the AL)	AL=1.3	1.3	0.030 (90 <sup>th</sup> percentile)	0 - 0.25 0 sites exceed AL	Aug and Sept 2019	Yes	Corrosion of household plumbing systems, erosion of natural deposits; leaching from wood preservatives
Fluoride [1025] (ppm)	4	4	0.7	0.70 to 0.70	June 2019	Yes	Water additive which promotes strong teeth
<sup>208</sup> Lead [1030] (ppb) (1 site exceeded the AL)	AL= 15	0	0 (90 <sup>th</sup> percentile)	0 – 50 1 site exceeds AL	Aug and Sept 2019	Yes	Corrosion of household plumbing systems, erosion of natural deposits
Nitrate (ppm)	10	10	1.1	1.1 to 1.1	June 2019	Yes	Runoff from fertilizer use; leaching from septic tanks, sewage, erosion of natural deposits.
<b>Synthetic Organic Contaminants including Pesticides and Herbicides</b>							
Atrazine [2050] (ppb)	3	3	0.44	0.44 – 0.44	June 2019	Yes	Runoff from herbicide used on row crops
<b>Disinfectants/Disinfection Byproducts and Precursors</b>							
Total Organic Carbon (ppm) (measured as ppm, but reported as a ratio)	TT*	N/A	2.06 (lowest average)	-0.83 to 3.49 (monthly ratios)	Jan-Dec 2019	Yes	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							
Chloramines (ppm)	MRDL 4	MRDLG 4	2.68 (highest average)	1.30 to 3.0	2019	Yes	Water additive used to control microbes.
Haloacetic acids or HAA (ppb) Stage2	60	N/A	38 (highest individual LRAA)	8 to 60	2019	Yes	By-product of drinking water chlorination
TTHM Stage 2 [total trihalomethanes] Stage2 (ppb)	80	N/A	45 (highest individual LRAA)	15 to 64	2019	Yes	By-product of drinking water chlorination

## An Explanation of the Water-Quality Data Table

In order to ensure that tap water is safe to drink, EPA prescribes regulations which limit the amount of contaminants in water provided by public water systems. The table below lists all of the drinking water contaminants that we detected during the calendar year of this report. Although many more contaminants were tested, only those substances listed below were found in your water. All sources of drinking water contain some naturally occurring contaminants. At low levels, these substances are generally not harmful in our drinking water. Removing all contaminants would be extremely expensive, and in most cases, would not provide increased protection of public health. A few naturally occurring minerals may actually improve the taste of drinking water and have nutritional value at low levels. Unless otherwise noted, the data presented in this table is from testing done in the calendar year of the

report. The EPA or the State requires us to monitor for certain contaminants less than once per year because the concentrations of these contaminants do not vary significantly from year to year, or the system is not considered vulnerable to this type of contamination. As such, some of our data, though representative, may be more than one year old. In this table you will find terms and abbreviations that might not be familiar to you. To help you better understand these terms, we have provided the definitions below the table.

**Maximum Contaminant Level (MCL's) are set at very stringent levels. To understand the possible health effects described for many regulated contaminants, a person would have to drink 2 liters of water every day at the MCL level for a lifetime to have a one-in-a-million chance of having the described health effect.**

### Definitions and Abbreviations

**MCL (Maximum Contaminant Level)** - 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.

**MCLG (Maximum Contaminant Level Goal)** - 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.

**MRDL (Maximum Residual Disinfectant Level)** - 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.

**MRDLG (Maximum Residual Disinfectant Level Goal)** - 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.

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

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

**RTCR Level 1 Assessment** - A Level 1 assessment is a study of the water system to identify potential problems and determine (if possible) why total coliform bacteria have been found in our water system.

**RTCR Level 2 Assessment** - A Level 2 assessment is a very detailed study of the water system to identify potential problems and determine (if possible) why an *E. coli* MCL violation has occurred and/or why total coliform bacteria have been found in our water system on multiple occasions.

**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.

**BDL** - below detection level

**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)

**ug/L** - micrograms per liter

**LRAA** - locational running annual average

**RTCR** - Revised Total Coliform Rule

**N/A** - not applicable

## Regulated Contaminant Information

<sup>1</sup>**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 8:550 Section 1. Samples were taken June 2019 yielded the above results and the next sample needs to be collected from the entry point to the distribution system during any quarter in the **2025** calendar year.

<sup>2</sup>**Lead and Copper** - Bardstown Municipal Water Department had fulfilled Standard Monitoring procedure with the post disinfectant change in December of 2018. The data presented above reflects the most recent sampling event and it is lower than the January to June 2019 levels.

*Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. City of Bardstown 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 in your water, you may wish to have your water tested. Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available from the Safe Drinking Water Hotline or at <http://www.epa.gov/safewater/lead>.*

**Barium.** Some people who drink water containing barium in excess of the MCL over many years could experience an increase in their blood pressure.

**Nitrate.** Nitrate 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.

#### **Unregulated Contaminants Monitoring Rule 4 (UCMR4)**

Bardstown Municipal Water Department tested for **UCMR4** All test for cyanotoxins (AM3) yielded Below Detection Levels (BDL). For more information please visit <https://www.epa.gov/dwucmr/fourth-unregulated-contaminant-monitoring-rule>.

Your drinking water has been sampled for a series of unregulated contaminants. Unregulated contaminants are those that EPA has not established drinking water standards.

There are no MCLs and therefore no violations if found. The purpose of monitoring for these contaminants is to help EPA determine where the contaminants occur and whether they should have a standard. As our customers, you have a right to know that these data are available. If you are interested in examining the results, please contact our office during normal business hours.

#### **Disinfectants/Disinfection Byproducts and Precursors.**

Disinfection By-products (DBPs) compliance regulation monitors Total Haloacetic Acids (HAA5s) and Total Trihalomethanes (TTHMs) at designated locations in the water distribution system. These TTHMs and HAA5s are by-products of the chlorine disinfection process. The regulatory annual quarterly average for HAA5 is 0.06 ppm (parts per million) and 0.08 ppm for TTHMs. We have remained in compliance with the regulation but want to further improve water quality for our Bardstown water customers and our wholesale water districts' customers.

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#### **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 (EPA) Safe Drinking Water Hotline (800-426-4791).

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:

- 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, which 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.

In order to ensure that tap water is safe to drink, EPA prescribes regulations that limit the amount of certain contaminants in water provided by public water systems. Food and Drug Administration (FDA) regulations establish limits for contaminants in bottled water which must provide the same protection for public health.

#### **Do I need to take special precautions?**

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/Centers for Disease Control (CDC) guidelines on appropriate means to lessen the risk of infection by Cryptosporidium and other microbial contaminants are available from the Safe Water Drinking Hotline (800-426-4791).

#### **Notice of Violations List for 2019**

##### **Violation Number – 2019-9950648**

The City of Bardstown failed to provide the Kentucky Department of Environmental Protection with a Level 1 Assessment under the 401 KAR 8:200 Revised Total Coliform Rule before the 11/17/2018 Deadline. Routine monitoring in late 2018 showed two positive samples for total Coliforms that can indicate the presence of harmful pathogens such as E.coli. If present, these pathogens can pose a risk to individuals who are elderly, pregnant or have compromised immune systems. A Level 1 Assessment was performed and we did not find any coliform or E.coli. We believe the contamination was the result of human error handling sample bottles and that the health of our customers was never at risk. We provided public notice of this violation to all our customers in an insert mailed out with utility bills on 4/15/2019 and 5/1/2019. We have since revised our Standard Operating Procedures to reduce the chance of contaminating samples in future.