B B A R D S T O W N

Municipal Water Department PWSID# KY0900017 Water Quality Report for Year 2023

We are pleased to present to you this year's Annual Drinking Water Quality Report. This report is a snapshot of last year's water quality. Included are details about your sources of water, what it contains, and how it compares to standards set by regulatory agencies. Our constant goal is to provide you with a safe and dependable supply of drinking water. We want you to understand the efforts we make to continually improve the water treatment process and protect our water resources. If you have any questions about this report or concerning your water, please contact Jessica Filiatreau at 502-348-5947 or Nic Hume at 502- 348-3064 or write to us at 220 N. 5th St. Bardstown, KY 40004. You can also find more information regarding water quality on our website https://www.cityofbardstown.org/government/departments/water

2023 WATER QUALITY IMPROVEMENTS

We want you to be aware of the continued efforts made to improve our water system and to protect our water re-

sources. The City of Bardstown continued to invest in improvements to the water distribution system that will enhance water quality and supply to our customers including the growing industries in our service area. The City has been working with the Louisville Water Company and North Nelson Water District to bring additional water into the community for both resiliency of water supply and growth. The City of Bardstown awarded a contract in July 2023 to Smith Contractors for the City's portion of a 24" water transmission main and booster station in the amount of \$2,884,700 scheduled for completion in Summer 2024. The City is receiving cost contributions from its largest and fastest growing private industrial customers to help minimize rate impact to all customers.



Newly repainted 1.2 Million Gallon Tank off E John Rowan Blvd (KY-245)

The City's Public Works department also completed an extension of the Water main along Parkway Drive in the Nelson County Industrial Park, finishing out a loop that will provide resiliency within the Park in case of a main break.

Public Works also completed the third phase of the City's ongoing Downtown Aging Infrastructure Replacement initiative that replaced almost 2,400 linear feet of Water Mains in the North-West part of downtown. This project improved water quality and fire flow to 35 customers including the Bardstown City Schools and all the homes on Bluegrass Ct.

2023 saw a number of water main breaks, some due to natural factors but the majority caused by the water lines being hit by excavation. In an attempt to reduce service disruption and water loss, the City joined the Kentucky 811 Before-You-Dig service in July 2023. The City's Public Works department is typically able to restore water services within hours of a break being reported. The City has also started utilizing text-notifications to inform customers when disruptions occur to

The City of Bardstown installed 6,930 ft of 12 inch diameter water main in 2023 to supply potable water to the new Heaven Hill Springs Distillery currently under construction on KY-245. The full \$2,112,6112 cost of design and construction by Kenvirons and Earth Works, LLC was paid for by Heaven Hill. A \$426,000 project to re-paint the interior and exterior of the 1.2 Million gallon elevated storage tank (the largest in the system) on Cardinal Dr was also completed in 2023. This will extend the life of the water tank, and ensure water quality. Bardstown's trademark color scheme and logo was used providing continuity with other tanks in Bardstown's water distribution system that have been painted in recent years.

their service or when boil water advisories are issued. Not getting messages? Contact Bardstown City Hall and update your account by providing your current cell phone number.

The City is continuing its efforts to meet the new State and Federal revised lead and copper rules, which require all water systems in the country to document the material of water service lines. By using information obtained from our own infrastructure projects, historical records and responses from a survey sent to customers in 2023 the City can extrapolate this data and expects that the total number of lead services to be zero or close to zero. To learn more visit the City's website at cityofbardstown.org/leadservice or see page 5 of this report.

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, 2023.

The data presented in this report are 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. Copies of this report are available upon request by contacting our office during business hours.

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.

Turbidity (NTU) TT * Representative samples	Allowable Levels	Highest Single Measurement	Lowest Monthly %	Violation	Likely Source
Turbidity is a measure of the clarity of the water and not a contaminant	No more than 1 NTU* Less than 0.3 NTU in 95% of monthly samples	0.25	100%	No	Soil runoff

REGULATED CONTAMINANT TEST RESULTS									
Contaminant [code] (units)	MCL	MCLG	Level Found	Range of Detection	Date of Sample	Violation	Likely Source of Contamination		
RADIOACTIVE CONTAMINANT	s								
¹ Combined Radium (<i>pCi/L</i>)	5	0	1.4	1.4 to 1.4	Jun-19	No	Erosion of natural deposits		
INORGANIC CONTAMINANTS							•		
Barium [1010] ppm	2	2	0.02	0.02 to 0.02	May-23	No	Drilling wastes; metal refineries; erosion of natural deposits		
Fluoride [1025] (ppm)	4	4	0.74	0.74 to 0.74	May-23	No	Water additive which promotes strong teeth		
Nitrate [1040] (ppb)	10	10	0.41	0.41 to 0.41	Jun-23	No	Runoff from fertilizer use; leaching from septic tanks, sewage, erosion of natural deposits		
DISINFECTANTS/DISINFECTION	N BYPRODUC	TS AND PRE	CURSORS				·		
Total Organic Carbon (ppm)	TT*	N/A	1.84 (lowest average)	1.17 to 2.71	Jan-Dec 2023	No	Naturally present in the environment		
*Monthly ratio is the % TOC removal achieved to the % TOC removal required. Annual average must be 1.00 or greater for compliance.									
Chlorine Residual (Chloramines) (ppm)	MRDL = 4	MRDLG = 4	2.52 (highest average)	1.4 to 3.2	Jan-Dec 2023	No	Water additive used to control microbes.		
HAA (ppb) (Stage 2) [Haloacetic acids]	60	N/A	60 (highest site average)	44 to 66 range of individual sites	Jan-Dec 2023	No	Byproduct of drinking water disinfection		
TTHM (ppb) Stage 2 [total trihalomethanes]	80	N/A	65 (highest site average)	39.8 to 79.8 range of individual sites	Jan-Dec 2023	No	Byproduct of drinking water disinfection		
HOUSEHOLD PLUMBING CONT	AMINANTS		·				·		
² Copper [1022] (ppm) (0 Sites exceeded the AL)	AL=1.3	1.3	0.02 (90th percentile)	0 to 0.05	Jun-21	No	Corrosion of household plumbing systems		
² Lead [1030] (ppb) (1 site exceeded the AL)	AL= 15	0	0	0 to 17	Jun-21	No	Corrosion of household plumbing systems		

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 January 1st to December 31st, 2023.

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 table 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 general-

ly 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)

µg/L- micrograms per liter

- LRAA locational running annual average
- RTCR Revised Total Coliform Rule
- N/A not applicable

Regulated Contaminant Information

Coliforms- Coliforms are bacteria that are naturally present in the environment and are used as an indicator that other, potentially harmful, waterborne pathogens may be present or that a potential pathway exists through which contamination may enter the drinking water distribution system. We found coliforms indicating the need to look for potential problems in water treatment or distribution. When this occurs, we are required to conduct assessment(s) to identify problems and to correct any problems that were found during these assessments.

During the past year we were required to conduct one (1) Level 1 assessment. One (1) Level 1 assessment was completed. In addition, we were required to take one (1) corrective action and we completed this one (1) of action.

Bardstown routinely monitors for the presence of drinking water contaminants. Drinking water standards require that no more than 1 sample per month may show the presence of coliform bacteria. During the month of June we took 30 samples for Coliform bacteria. Two (2) of our samples showed the presence of coliform bacteria exceeding the required standard.

When we detect coliform bacteria in any sample, we do follow -up testing to see if other bacteria of greater concern, such as fecal coliform or E. coli, are present. Upon receiving the positive test results, Bardstown took additional follow- up/repeat samples in that area as part of a Level 1 assessment. The subsequent water samples did not show bacteria present and all further testing has been free of total coliform bacteria. There was no E.coli found.

As corrective action we reviewed sampling techniques and we believe that the contamination was due to human error during the handling of sample bottles, or that we may have had contaminated bottles. We reviewed our Standard Operating Procedures to reduce the chances of contaminating samples in the future. We disposed the suspected sample bottles and replaced them with new ones completing the corrective actions.

¹**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

² 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. We have completed the Standard Monitoring period (two (2) six months monitoring with increased samples] and are now on the first step of reduced monitoring.

Lead can cause serious health problems, especially for pregnant women and young children. Lead in drinking water is pri-

marily from materials and components associated with service lines and home plumbing. Bardstown Municipal Water Dept is responsible for providing high quality drinking water and removing lead pipes, but cannot control the variety of materials used in plumbing components in your home. You share the responsibility for protecting yourself and your family from the lead in your home plumbing. You can take responsibility by identifying and removing lead materials within your home plumbing and taking steps to reduce your family's risk. Before drinking tap water, flush your pipes for several minutes by running your tap, taking a shower, doing laundry or a load of dishes. You can also use a filter certified by an American National Standards Institute accredited certifier to reduce lead in drinking water. If you are concerned about lead in your water and wish to have your water tested, contact Bardstown City Hall at 502-348-5947. Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available 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.

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.



LEAD SERVICE LINE INVENTORY

In 2022 the EPA began a new initiative to eliminate lead in drinking water. This included steps to find and replace all the lead water service lines in the distribution system of every water system in the U.S., including the service line (pipe) that connects your home to the water system. The City is using a statistical method, approved by the Kentucky Division of Water to perform physical inspections of Service lines on a representative sample of customers across the entire service area.

The inspection will involve excavating around the Water Meter to verify the service line material is not lead. If your address is selected you will be notified by letter and text message. Please note that Lead has been banned from use in drinking water pipes and plumbing fixtures since 1987 so if your home was built after this date you will not be selected. Over the past year NO Lead services have been found. All public water systems are required to perform routine lead and sampling throughout their distribution system. The City of Bardstown has been on reduced monitoring for decades as a result of lead not being present. This is good news for our community health.

If you would like the City to physically inspect your service line to verify the material please contact City Hall at 502-348 -5947 or visit cityofbardstown.org/leadservice for more information

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 and through the ground, it dissolves naturally occurring minerals, and can 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, the 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.

Do I need to take special precautions?

Some people may be more vulnerable to contaminants in drinking water than the general population. Immunocompromised 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).

NOTICE OF VIOLATIONS LIST FOR 2023

The City of Bardstown Water System received no drinking water treatment or distribution violations in 2023.

Source Water Protection & Lake Cleanup







Students from the Thomas Nelson Highschool General's Serve program helped clear trash around Sympson Lake as part of their service program in May.

The volunteers removed 25 contactor bags worth of trash that might otherwise pollute this essential water source we all share. Remember, if it's ON the ground, it's IN your water!



Sympson Lake

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.

Quick Facts

- Sympson Lake has been the primary water source for Bardstown since 1964
- Created in 1963 by construction of a dam across Buffalo Creek. US-62 Boston Rd. runs across this dam.
- Surface area: 135 acres (the size of approx. 101 football fields)
- Capacity of 1.2 billion gallons (nearly 2,450 times the size of the Bardstown City Pool.
- Water is pumped from the Beech Fork River through a 2.5 mile long, 20" pipe constructed in 1994, into Sympson Lake to supplement water during dry spells and peak withdrawal months.