BARDSTOWN

Municipal Water Department PWSID# KY0900017 Water Quality Report for Year 2021

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 Roni Afable 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

2021 Water Quality Improvements

The City made a number of improvements in 2021 including a $684,000 project to construct a 9,400 feet long Water Main along US-150 Springfield Road. This provides a secondary feed to Poplar Flat Road where City serves over 700 customers.

The City continued its Water Tank painting and rehabilitation program with work being performed on the 500,000 gallon Elevated Storage Tank located near Hurstland Drive, behind the Bardstown Early Childhood Center. This $393,500 project involved cleaning, repairing and painting both the interior and exterior of the tank. This will extend the life of the tank which was originally constructed in 1964.

Bardstown 1/2 Million Gallon Hurstland Tank

photo courtesy of Grizzly Media

In compliance with the America's Water Infrastructure Act of 2018, the City completed its Community Water System Risk & Resilience Assessment in 2021 by updating its Emergency Response Plan. This process helped the City identify and prepare for potential natural or human originated disasters.

In the Fall of 2020 the Bardstown Water Treatment Plant became a Community Partner with Thomas's Nelson High School's Workforce Program. High school seniors Cameron Mattingly and John Robert Hite became the first participants in the co-op program. Mr. Hite began college in the fall of 2021, while Cameron Mattingly is now employed full time as an Operator Trainee. As a result of his co-op work experience, Cameron was able to obtain his Class I Water Treatment Plant Operator's License after only nine months of full time employment. The City is hiring at the Water Plant. See our feature on the back page of this report for more information about this exciting opportunity and how to apply. It is not just a job but a career that fuels our community.

12" Main under construction near US-150 Springfield Road

We know that water is the most indispensable product in every home. We ask everyone to be mindful and help us in our efforts to protect the water source and 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 each month, at the City Annex Building, 116 North 5th Street at 6:00 P.M.

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, 2021.

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	0.29	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 CONTAMINANTS							
[1]Combined Radium (*pCi/L)*	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	Mar-21	No	Drilling wastes; metal refineries; erosion of natural deposits
Fluoride [1025] (ppm)	4	4	0.63	0.63 to 0.63	Mar-21	No	Water additive which promotes strong teeth
Nitrate [1040] (ppb)	10	10	0.75	0.75 to 0.75	Mar-21	No	Runoff from fertilizer use; leaching from septic tanks, sewage, erosion of natural deposits
DISINFECTANTS/DISINFECTION BYPRODUCTS AND PRECURSORS							
Total Organic Carbon (ppm)	TT*	N/A	2.27	1.32 to 2.95	Jan-Dec	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	2.9 (highest average)	2 to 3.8	Jan-Dec	No	Water additive used to control microbes.
HAA (ppb) (Stage 2) [Haloacetic acids]	60	N/A	31 (highest site average)	18 to 44 range of individual sites	Jan-Dec	No	By-product of drinking water
TTHM (ppb) Stage 2 [total trihalomethanes]	80	N/A	68 (highest site average)	43 to 113 range of individual sites	Jan-Dec	No	Byproduct of drinking water disinfection
HOUSEHOLD PLUMBING CONTAMINANTS							
[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, 2020.

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 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)

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.

If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. Bardstown Municipal Water Dept. 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 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 (Unregulated Contaminants Monitoring Rule 4). 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.

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.

Sympson Lake

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.

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. 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).

Notice of Violations List for 2021

The City of Bardstown Water System received no drinking water treatment or distribution violations in 2021.

Become a

WATER PLANT OPERATOR

Being a Water Treatment Professional is an essential and rewarding career.

Be an Environmental Steward

Protect the people, plants and animals who depend on clean water

Chemist Microbiologist Engineer

A large range of responsibilities provides a variety in daily workflow

Machinery Construction Electronics

Put your broad skills to use for the good of your community

A Career In High Demand

We are looking for motivated applicants for the Operator Trainee Program, where you can train to become a licensed water operator while working at our facilities.

Not currently certified? No problem! We can hire candidates as an Operator Trainee and help fast-track their certification by utilizing their education from a regionally accredited college or university in engineering or biological, environmental, physical, or chemical science.

Benefits

- Salary is based on qualifications and experience.
- Health, dental, and vision insurance, paid life insurance, vacation, and personal days and State retirement contributions
- Tuition reimbursement as well as assistance with licensing/certification
- Use your college degree (if applicable) to meet experience requirement for Operator License
- Make a real difference in the community in a stable industry that offers good job security

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Minimum Requirements:

- High school diploma or equivalent
- Valid driver's license
- 18 years or older
- Be able to work flexible shifts
- Must be able to pass a pre-employment physical and drug test