



# 2017 Annual Water Quality Report

Northern Division  
Owen and Surrounding Counties  
PWSID: KY0340250



Este informe contiene información muy importante sobre su agua potable. Tradúzcalo o hable con alguien que lo entienda bien.

## A Message from the Kentucky American Water President

To Our Valued Customer:

Kentucky American Water is proud to be your local water service provider, and I am pleased to share with you good news about the quality of your drinking water. Each year, we provide you with our Annual Water Quality Report that provides information about where your water comes from, the results of water testing, and information about what was found during that testing.

Quite a lot goes into bringing that water to your home. The miles of pipeline hidden below the ground. The facilities that draw water from the source. The plant where it's treated and tested. Our treatment plant operators, water quality experts, engineers, and maintenance crews working around the clock to make sure that water is always there when you need it. Delivering high-quality, reliable water service to your tap around the clock also requires significant investment in our water infrastructure to upgrade aging facilities. In fact, we invest approximately \$20 million in capital improvements each year. We are proud that we continue to supply water for **less than a penny per gallon—an exceptional value.**



We do this because we believe we're delivering more than just water service. We deliver a key resource for public health, fire protection, economic development and overall quality of life. Our job is to ensure that quality water keeps flowing not only today, but well into the future. It's part of our commitment to you and the communities we serve.

We hope you agree that it's worth every penny and worth learning more about. Please take the time to review this report. It provides details about the source and quality of your drinking water using the data from water quality testing conducted for your local water system from January through December 2017.

We appreciate the opportunity to serve you.

Sincerely,

A handwritten signature in blue ink that reads "Nick O. Rowe".

Nick O. Rowe  
President, Kentucky American Water

## About Kentucky American Water

Kentucky American Water, a subsidiary of American Water (NYSE: AWK), is the largest investor-owned water utility in the state, providing high-quality and reliable water and/or wastewater services to approximately half a million people.

With a history dating back to 1886, American Water is the largest and most geographically diverse U.S. publicly traded water and wastewater utility company. The company employs more than 6,900 dedicated professionals who provide regulated and market-based drinking water, wastewater and other related services to an estimated 15 million people in 46 states and Ontario, Canada. American Water provides safe, clean, affordable and reliable water services to our customers to make sure we keep their lives flowing. For more information, visit [amwater.com](http://amwater.com) and follow American Water on [Twitter](#), [Facebook](#) and [LinkedIn](#).

## Source Water Information

When it rains, water travels over the surface of the land or through the ground, dissolving naturally occurring minerals (possibly radioactive material) and picking up organic material from animals or humans. The water ends up in rivers, lakes, streams, ponds, reservoirs, springs, and wells, where it may become a source of supply for both drinking and bottled water. The following contaminants may be present in source water because of this process:

- **Microbial Contaminants**, such as viruses and bacteria from sewage, agricultural livestock operations or wildlife.
- **Inorganic Contaminants**, such as salts and metals that occur naturally or may result from urban storm water runoff, industrial or domestic wastewater discharges, oil and gas production, mining or farming.
- **Pesticides and Herbicides**, which come from a variety of sources such as agriculture, urban storm water runoff and residential uses.
- **Organic Chemical Contaminants (including synthetic and volatile organic chemicals)**, which are by-products of industrial processes and petroleum production, and may come from gas stations, urban storm water runoff and septic systems.
- **Radioactive Contaminants**, which occur naturally or result from oil and gas production and mining activities.

Surface water from pool 3 of the Kentucky River as it passes through Owen County provides the primary source of drinking water produced by our Kentucky River Station II at Hardin's Landing water treatment plant for our Northern Division customers. Our treatment processes are designed to protect human health by reducing contaminant concentrations to levels well below what might cause health concerns.

Kentucky American Water customers in the Glencoe area receive water purchased from Gallatin County Water (PWSID# KY0390130). The primary supply for Gallatin County Water is groundwater from an underground aquifer that runs beneath Gallatin County. Our customers may receive treated water that Gallatin County Water purchases from the Warsaw Water Works (PWSID# KY0390444) treatment facility located in Warsaw. The Warsaw Water Works and Gallatin County Water draw water from the same groundwater source. Customers in the Wheatley area receive water purchased from Carroll County Water District #1 (PWSID# KY0210066), whose source is groundwater drawn from a network of wells drilled into the Ohio River alluvial aquifer.

## Protecting Your Water Source

The Kentucky Division of Water approved Source Water Assessment and Protection Plans for Kentucky American Water's suppliers in 2003. Kentucky American Water is in the process of finalizing a Source Water Assessment and Protection Plan for the Kentucky River Station II at Hardin's Landing water treatment plant that treats water from pool 3 of the Kentucky River. These plans focus on identifying potential sources of contamination for drinking water supplies and encourage ongoing planning to protect source waters. The following are brief summaries of potential contamination sources for Kentucky American Water's sources of supply.

A preliminary evaluation of pool 3 Kentucky River water indicates the Kentucky River is moderately susceptible to contamination from agricultural runoff, which may include pesticides, nutrients and silt from croplands, and

substances resulting from the presence of animals on pasturelands. Industrial and construction runoff in urban areas may include silts, synthetic chemicals and metals.

Carroll County Water sources are moderately susceptible to contamination from row crops, sewage treatment, permitted operations and road exposure. These cumulatively increase the potential for a release of contaminants within their watershed.

Warsaw Water Works' and Gallatin County Water's groundwater supply is moderately susceptible to contamination. Potential sources of contamination within the wellhead protection area include storage tanks, agricultural land use, highways, wastewater treatment, septic systems and machinery storage.

Protecting drinking water is everyone's responsibility. You can help protect our water supplies by:

- Eliminating excess use of lawn and garden fertilizers and pesticides, since they contain hazardous chemicals that can reach our source water.
- Picking up after your pets.
- Disposing of chemicals properly and taking used motor oil to a recycling center.
- Disposing of used medicine properly (visit our website at [www.kentuckyamwater.com](http://www.kentuckyamwater.com) for additional information).
- Volunteering in watershed groups in our area.
- Remembering that storm drains dump directly into local water bodies.

Kentucky American Water encourages you to take an active part in protecting your water supply by participating in activities as they occur in your area. For example, the company participates in Reforest the Bluegrass in Fayette County annually, planting trees near water bodies to enhance our source water protection, and supports the annual River Sweep on the Kentucky River, coordinated by the Ohio River Valley Sanitation Commission (ORSANCO).

### **Special 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 (800-426-4791).

### **Information on the Internet**

The U.S. Environmental Protection Agency (EPA), Centers for Disease Control and the Kentucky Division of Water web sites provide a substantial amount of information relating to water sources, water conservation, and public health. You may visit these sites at the addresses below:

**U.S. Environmental Protection Agency**  
<http://water.epa.gov/drink/index.cfm>

**Centers for Disease Control and Prevention**  
<http://www.cdc.gov/>

**Kentucky Division of Water**  
<http://water.ky.gov/>

### **Substances Expected to Be in Drinking Water**

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 (800-426-4791).

To ensure tap water is safe to drink, the U.S. Environmental Protection Agency (EPA) prescribes regulations limiting the amount of certain substances in water provided by public water systems. The U.S. Food and Drug Administration establishes limits for contaminants in bottled water that must provide the same protection for public health.

### **What is *Cryptosporidium*?**

*Cryptosporidium* is a microbial pathogen found in surface water throughout the United States. Although filtration removes *Cryptosporidium*, the most commonly used filtration methods cannot guarantee 100 percent removal. Ingestion of *Cryptosporidium* may cause *cryptosporidiosis*, an abdominal infection. Symptoms of infection include nausea, diarrhea and abdominal cramps. Most healthy individuals can overcome the disease within a few weeks. People with severely weakened immune systems have a risk of developing life-threatening illness. We encourage such individuals to consult their doctor regarding appropriate precautions to take to avoid infection.

*Cryptosporidium* must be ingested to cause disease, and it may be spread through means other than drinking water. Kentucky American Water began a second round of 24 consecutive months of monitoring for *Cryptosporidium* in our source waters in April 2015. Sample results were as follows:

- 2015: *Cryptosporidium* detected in 3 of our 9 source water samples with levels ranging from 0.091 to 0.390 oocysts per liter
- 2016: *Cryptosporidium* detected in 4 of our 12 source water samples with levels ranging from 0.182 to 0.857 oocysts per liter
- 2017: *Cryptosporidium* detected in 1 of our 3 source water samples with a level of 0.089 oocysts per liter

Kentucky American Water's treatment processes are designed to remove *Cryptosporidium* from the water, but additional treatment options are being evaluated.

### **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.

### **Special Information about Lead in Drinking Water**

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. Kentucky American Water 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>.

### **Unregulated Contaminant Monitoring Rule 3**

Monitoring was performed during 2013 under the U.S. Environmental Protection Agency (EPA) Unregulated Contaminant Monitoring Rule 3 (UCMR 3). Unregulated contaminants are those that don't have a drinking water standard set by EPA. The purpose of monitoring for these contaminants is to help EPA decide whether the contaminants should have a standard. Contaminants detected as part of the UCMR 3 monitoring are included in the Water Quality Results table. For a report, containing all testing performed under the UCMR 3 rule, please contact our Customer Service Center at (800) 678-6301.

### **Important Information about Your Drinking Water - Monitoring Requirements Not Met by Gallatin County Water District**

Gallatin County Water (PWSID# KY0390130) received a Notice of Violation (NOV) for failure to complete Radionuclide sampling for Treatment Plant B in 2017. The contaminants tested in this sampling include: Gross Alpha Particles, Combined Radium 226 & 228, and Uranium. Gallatin County Water has since taken the required

samples. Corrective action measures have been taken to ensure all future sampling requirements are met and submitted to the state in a timely manner. Please note that these violations were issued to a system from whom we purchase water (i.e. Gallatin County Water), but we want you to be aware of this information. There is nothing you need to do regarding this violation. You do not need to seek an alternative water supply. The “we” listed in the mandatory paragraph below refers to Gallatin County Water.

*We are required to monitor your drinking water for specific contaminants on a regular basis. Results of regular monitoring are an indicator of whether or not your drinking water meets health standards. During the 2017 compliance period, we did not complete all monitoring or testing for Radionuclides and therefore cannot be sure of the quality of our drinking water during that time.*

### You Can Be Involved in Matters That Affect Your Water

Kentucky American Water welcomes your comments and questions regarding your water. To provide feedback on decisions that may affect the quality of your water, for questions about your water or this report, or to obtain additional copies of this report, please call our Customer Service Center at (800) 678-6301.

As a customer of a utility regulated by the Kentucky Public Service Commission, you have the opportunity to participate in periodic public hearings regarding Kentucky American Water. For more information about this process, please refer to the Public Service Commission website at <http://psc.ky.gov/> or call (800) 772-4636.

### Protecting Our Water Supply – Backflow Prevention

Kentucky American Water has a backflow prevention program that ensures proper installation and maintenance of thousands of backflow prevention devices throughout our system. These devices ensure hazards originating on customers' properties and from temporary connections do not impair or alter the quality of water in our distribution system. For more information about Kentucky American Water's backflow prevention program, please visit our web site at [www.kentuckyamwater.com](http://www.kentuckyamwater.com), or contact the Cross Connection department at [KAW.cc@amwater.com](mailto:KAW.cc@amwater.com) or (859)268-6310.

### Water Quality Testing

Kentucky American Water conducts extensive monitoring to ensure that your water meets all water quality standards. The following tables contain results of our monitoring. While most monitoring occurred in 2017, certain substances are monitored less than once per year because the levels do not change frequently. We believe it is important that you know exactly what is in your water and how much of the substance is present in the water. For help with interpreting this table, see “How to Read This Table.”

### How to Read This Table

Start by finding a **Substance**, and then read across to find the information about that substance. The **Year Sampled** is usually in 2017 or the prior year. **MCL** shows the highest level of substance (contaminant) allowed. **MCLG** is the goal level for that substance (this may be lower than what is allowed). **Highest Value** (results) represents the measured amount (less is better). **Range** tells the highest and lowest amounts measured. **Typical Source** tells where the substance usually originates.

### Definitions of Terms Used in This Report

- **Action Level:** The concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow.
- **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 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.
- **NA:** Not applicable
- **ND:** Not detected
- **NTU (Nephelometric Turbidity Units):** A measurement of the clarity, or turbidity, of the water.
- **pCi/L (picocuries per liter):** Measure of radioactivity in water.
- **ppb (parts per billion):** One part substance per billion parts water, or micrograms per liter.
- **ppm (parts per million):** One part substance per million parts water, or milligrams per liter.
- **ppt (parts per trillion):** One part substance per trillion parts water, or nanograms per liter.
- **TT (Treatment Technique):** A required process intended to reduce the level of a contaminant in drinking water.

## Water Quality Results

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.

### Regulated Substances (Measured on the Water Leaving the Treatment Facility)

Substance (units)	Year Sampled	MCL	MCLG	Owenton Area Customers		Glencoe Area Customers						Wheatley Area Customers		Typical Source	
				Kentucky River Station II		Gallatin County Water				Warsaw Water Works		Carroll County Water District			
				Highest Value	Range Low-High	Treatment Plant A		Treatment Plant B		Highest Value	Range Low-High	Highest Value	Range Low-High		
						Highest Value	Range Low-High	Highest Value	Range Low-High						
Fluoride (ppm)	2017	4	4	0.61	NA	0.72	NA	0.88	NA	0.80	NA	0.79	NA	Erosion of natural deposits; Water additive which promotes strong teeth; Discharge from fertilizer and aluminum factories	
Nitrate (ppm)	2017	10	10	0.88	NA	7.36	0.37-7.36	5.92	NA	6	1.4-6	5.04	2.37-5.04	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits	
Total Organic Carbon (ppm) <sup>1</sup>	2017	TT	NA	1.55	1.34-2.24	NA	NA	NA	NA	NA	NA	NA	NA	Naturally present in the environment	
Turbidity (NTU) <sup>2</sup>	2017	TT	NA	0.09	100% Lowest Monthly	NA	NA	NA	NA	NA	NA	NA	NA	Soil runoff	
2,4-D (ppb)	2017	70	70	0.3	ND-0.3	NA	NA	NA	NA	NA	NA	NA	NA	Runoff from herbicide used on row crops	
Barium (ppm)	2017	2	2	ND	NA	0.035	NA	0.035	NA	0.0512	NA	0.044	NA	Drilling wastes; Metal refineries; Erosion of natural deposits	
Chlorobenzene (ppb)	2017	100	100	ND	NA	NA	NA	NA	NA	0.928	NA	ND	NA	Discharge from chemical and agricultural chemical factories	
Combined Radium 226 & 228 (pCi/L) <sup>3</sup>	2017	5	0	ND	NA	NA	NA	4.1	1.2-2.9	NA	NA	NA	NA	Erosion of natural deposits	

Uranium ( $\mu\text{g/L}$ ) <sup>4</sup>	2017	30	0	ND	NA	NA	NA	1	0-1	NA	NA	NA	NA	Erosion of natural deposits
--	------	----	---	----	----	----	----	---	-----	----	----	----	----	-----------------------------

#### Regulated Substances (Measured in the Distribution System)

Substance (units)	Year Sampled	MCL	MCLG	Highest RAA	Range (Low-High)	Typical Source
Total Trihalomethanes (ppb) <sup>5</sup>	2017	80	NA	64	18.9-91.8	By-product of drinking water disinfection
Haloacetic Acids (ppb) <sup>5</sup>	2017	60	NA	46	4.5-57.8	By-product of drinking water disinfection
Chloramines (ppm) <sup>6</sup>	2017	4	4	2.3	0.5-4.6	Water additive used to control microbes
Chlorine (ppm) <sup>7</sup>	2017	4	4	0.91	0.40-1.65	Water additive used to control microbes

#### Regulated Substances (Measured at the Customer's Tap)

Substance (units)	Year Sampled	Action Level	MCLG	90 <sup>th</sup> Percentile	Number of Samples	Number of Samples Above Action Level	Typical Source
Copper (ppm) <sup>8</sup>	2015	1.3	1.3	0.147	51	0	Corrosion of household plumbing systems; Erosion of natural deposits
Lead (ppb) <sup>8</sup>	2015	15	0	ND	51	0	Corrosion of household plumbing systems; Erosion of natural deposits

#### Microbiological Results (Measured in the Distribution System)

Substance (units)	Year Sampled	MCL	MCLG	Highest Percentage Detected	Typical Source
Total Coliform	2017	TT	NA	1.05%	Naturally present in the environment

#### Unregulated Contaminant Monitoring Rule 3<sup>6</sup> (Measured on the Water Leaving the Treatment Facility)

Substance (units)	Year Sampled	MCL	MCLG	Owenton Area Customers		Glencoe Area Customers				Wheatley Area Customers		Typical Source	
				Kentucky American Water Kentucky River Station II		Gallatin County Water		Warsaw Water Works		Carroll County Water District			
				Average	Range Low-High	Average	Range Low-High	Average	Range Low-High	Average	Range Low-High		
Chromium (ppb) <sup>9</sup>	2013	NA	NA	0.18	ND - 0.70	NA	NA	NA	NA	NA	NA	Discharge from steel and pulp mills; Erosion of natural deposits	
Chromium-6 (ppb) <sup>9</sup>	2013	NA	NA	0.05	0.04 - 0.08	NA	NA	NA	NA	NA	NA	Naturally-occurring element	
Molybdenum (ppb) <sup>9</sup>	2013	NA	NA	0.70	ND - 1.50	NA	NA	NA	NA	NA	NA	Naturally-occurring element found in ores and present in plants, animals and bacteria	

Strontium (ppb) <sup>9</sup>	2013	NA	NA	177	140 - 226	NA	NA	NA	NA	NA	NA	Naturally-occurring element
Vanadium (ppb) <sup>9</sup>	2013	NA	NA	0.20	ND - 0.40	NA	NA	NA	NA	NA	NA	Naturally-occurring elemental metal

<sup>1</sup> **Total Organic Carbon:** Although the concentration listed is ppm, the values shown are ratios used to determine compliance. Compliance with the TOC Treatment Technique (TT) requirement is based on the lowest running annual average (RAA) of the monthly ratios of the % TOC treatment removal achieved compared to the required removal. A minimum annual average ratio of 1.00 is required.

<sup>2</sup> **Turbidity:** Turbidity is the clarity of water. It is measured as an indicator of water quality and the effectiveness of the filtration system. Compliance with the turbidity Treatment Technique (TT) is achieved when 95% of four-hour filtered water readings are 0.3 NTU or lower and no readings are greater than 1 NTU. Lowest monthly percentage of samples meeting the turbidity limit = 100%.

<sup>3</sup> **Combined Radium** Radium-226 and Radium-228 concentrations added together. Kentucky American Water-Northern Division sampled for Combined Radium in 2017. Gallatin County Water District sampled for Combined Radium in 2014.

<sup>4</sup> **Uranium** Kentucky American Water sampled for Uranium in 2017. Gallatin County Water District sampled for Uranium in 2014.

<sup>5</sup> **Total Trihalomethanes (TTHMs) and Haloacetic Acids (HAAs):** Compliance based on the highest LRAA (locational running annual average) that is calculated quarterly. The highest quarterly LRAA is the measured value in the table. Some people who drink water containing trihalomethanes 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. Some people who drink water containing haloacetic acids in excess of the MCL over many years may have an increased risk of getting cancer.

<sup>6</sup> **Chloramine:** The highest RAA for total chlorine or chloramines is for the in Owenton area customers.

<sup>7</sup> **Chlorine:** The highest RAA for free chlorine is for the Warsaw Water Works, Gallatin County Water and Carroll County Water customer areas.

<sup>8</sup> **Lead and Copper:** Compliance is achieved when at least 90% of samples collected from water standing in contact with plumbing for at least 6 hours are below the Action Level. The 90<sup>th</sup> percentile for lead was below the detection limit.

<sup>9</sup> **Unregulated Contaminant Monitoring Rule 3 (UCMR3):** Results are for 2013 quarterly monitoring at all Kentucky American Water treatment plants and in the distribution system. Chromium is a regulated contaminant tested with the rest of the UCMR 3 constituents.