2015 Annual Water Quality Report

Central Division
Millersburg
PWS ID: KY0090287

KENTUCKY AMERICAN WATER

Este informe contiene información muy importante sobre su agua beber. Tradúzcalo ó 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 2015.

We appreciate the opportunity to serve you.

Sincerely,

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.

American Water is the largest and most geographically diverse publicly traded U.S. water and wastewater utility company. Marking its 130th anniversary this year, the company employs 6,700 dedicated professionals who provide regulated and market-based drinking water, wastewater and other related services to an estimated 15 million people in 47 states and Ontario, Canada. More information can be found by visiting www.amwater.com.

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 be used as a source of supply for both drinking and bottled water. The following contaminants may be present in source water as a result 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 also 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.

Paris Water Works is the source of supply for the Kentucky American Water – Millersburg customers. The City of Paris uses surface water, Stoner Creek, as its sole source of drinking water. There are four dams on our raw water source with a total gross storage of 378 million gallons. Stoner Creek originates in Clark County as does Strodes Creek which is a major tributary of Stoner Creek. Both are part of the Licking River drainage basin. The water supply from Paris is relatively good compared to some supplies as there is not a lot of industrial pollution; however, there is agricultural runoff and the fertilizers from the runoff can cause algae blooms that can impact treatment.

Protecting Your Water Source

The Kentucky Division of Water approved a Source Water Assessment and Protection Plan for Paris Water Works in 2003. An analysis of the susceptibility of the Paris Water Supply to contamination indicates that this susceptibly is generally moderate; however there are a few areas of high concern. Several highway bridges in the immediate vicinity of the intake may pose a potential threat as an accidental release of contaminants from any of these sites could reach the intake. The same is true for railroads that occur between KY 627 and KY 1678 near Kennedy Creek. In addition, areas of row crops, municipal sewer lines, a KPDES permitted discharger and a waste generator and/or transporter are causes for concern. Finally, there are numerous permitted operations and activities and other potential contaminant sources of moderate concern within the greater watershed that cumulatively increase the potential for the release of contaminants with in the area. These potential contaminant sources include everything from septic systems, to major roads, to hazardous chemical users. A copy of the completed Source Water Assessment and Protection Plan may be viewed by calling the Watershed Management Branch of the Kentucky Division of Water at (502) 564-3410.

Protection of 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 Web site at 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 annual riparian tree planting events to enhance our source water protection, and sponsors and participates in the annual River Sweep on the Kentucky River, coordinated by the Ohio River Valley Sanitation Commission (ORSANCO).

You Can Be Involved in Matters that Affect Your Water

Kentucky American Water welcomes your comments and questions regarding water quality issues. You can contact us with questions about your water, your water bill, service issues, or to obtain additional copies of this report by calling our Customer Service Center at (800) 678-6301.

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 may be obtained by calling the Environmental Protection Agency's Safe Drinking Water Hotline at (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 (FDA) establish limits for contaminants in bottled water that must provide the same protection for public health.

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. EPA and Centers for Disease Control websites provide a substantial amount of information relating to water sources, water conservation and public health. The Kentucky Division of Water Drinking Water Branch has a website that contains useful information as well. 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/pages/default.aspx

A Proud Master Member of the Kentucky EXCEL Program

The Kentucky Department for Environmental Protection administers a voluntary program that is open to anyone who wishes to improve and protect Kentucky's environment beyond regulatory requirements. The Master membership is the highest of the four membership levels, requiring members to demonstrate comprehensive environmental management planning; undergo an independent, third-party assessment of compliance; and commit to complete and report on at least four voluntary projects that will benefit Kentucky's environment. Kentucky American Water is proud to participate in this program at the Master level.

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. Kentucky American Water remains in full compliance with all of the requirements pertinent to lead and copper in drinking water.

Commonly Asked Questions

Why do I have cloudy or milky water? Occasionally your water may look cloudy or milky. Cloudy or milky-looking water is usually the result of lots of tiny air bubbles suspended in the water. The bubbles are so small that they are almost invisible, but together they look like someone poured milk in your water. Our water has dissolved air in it all of the time, but it has more during the colder months. When the colder water warms in your hot water heater or in the pipes of your home, it can no longer hold all of the dissolved air, so air bubbles appear. There is nothing that Kentucky American Water can do to remove these air bubbles from the water, but be assured that these bubbles will clear on their own as the water warms up. If you allow a glass of water to stand for a few moments, the air bubbles will rise to the surface. This phenomenon is called entrained air, does not affect the quality of your water and is not harmful to consume. If the water does not clear from the bottom up, please contact our Customer Service Center at (800) 678-6301.

Why do I have brown or yellow water? The internal plumbing of your house may be the culprit if discolored water only appears for a minute or two after your tap is turned on. Since iron is an essential nutrient, this condition poses no health hazard. If the discoloration bothers you, however, flush the tap until the water becomes clear, saving the flushed water for iron-loving plants. If the discoloration is detected only in your hot water supply, it is likely an indication of an issue with your hot water heater. You should consult your owner's manual for instructions and warnings regarding flushing your hot water heater or contact a licensed plumber.

Sediments in water mains sometimes get stirred up when fire hydrants are used and when the flow of water in mains is changed. These sediments may cause your water to turn brown or yellow. Wait 30 to 40 minutes after you notice the discolored water, and try turning on the cold water in your bathtub for a minute or two. You'll probably notice that it clears right away, since sediments settle quickly back to the bottom of water mains. Discolored water due to sediments poses no known health threat, but for aesthetic reasons you should avoid doing laundry until the water color clears. If the water does not clear after a few minutes, please contact our Customer Service Center at (800) 678-6301.

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.

The U.S. EPA issued a rule in January 2006 that requires systems with higher Cryptosporidium levels in their source water to provide additional treatment. Paris began monthly testing of Stoner Creek for cryptosporidium in June of 2005 with no detections occurring in 2005, 2006 or 2007. Testing was not required for 2015.

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, or contact our Senior Cross Connection Control Specialist Kenny Roney, at kenny.roney@amwater.com or (859) 268-6310.

Paris Water Notice of Violation

The City of Paris did not meet the treatment technique requirement for Total Organic Carbon (TOC) in 2015. The TOC treatment technique requirement is calculated based on a monthly ratio of the treatment percent TOC removal achieved to the percent TOC removal required. The annual average of the monthly ratios must be 1.0 or greater for compliance to be achieved. The Paris Water Works calculated average for TOC for 12/1/2015 – 12/31/2015 was .82. Kentucky American Water – Millersburg customers were notified of this violation by direct mail in April 2016.

Notice of Violation

Our water system recently violated a drinking water requirement. Although **this was not an emergency** – as our customers – you have a right to know what happened, what you should do, and what we did to correct this situation.

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 our drinking water meets health standards. During March 2015 we did not complete all monitoring or testing for total coliforms and therefore cannot be sure of the quality of our drinking water during that time.

There is nothing you need to do. The testing was completed as required and showed that the water remained safe to consume. We inadvertently uploaded the incorrect electronic file to the Kentucky Division of Water website and that resulted in the violation. Upon notification that the incorrect file had been uploaded the correct file was immediately submitted and accepted. Corrective measures have been taken to ensure this doesn't happen again.

Please share this information with all the other people who drink this water, especially those who may not have received this notice directly (for example, people in apartments, nursing homes, schools, and businesses). You can do this by posting this notice in a public place or distributing copies by hand or mail.

Unregulated Contaminant Monitoring Rule 3

Monitoring was performed during 2014 by Paris Water Works 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 that were 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.

Water Quality Testing

Kentucky American Water and Paris Water Works conduct extensive monitoring during the year. The results of our monitoring are reported in the following table. While most monitoring was conducted in 2015, 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 was detected and how much of the substance was present in the water.

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 2015 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

- **AL (Action Level):** The concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow.
- **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 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 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 contamination.
- **mrem/year (millirems per year):** A measure of radiation absorbed by the body.
- **NA:** Not applicable
- **ND:** Not detected
- **NTU (Nephelometric Turbidity Unit):** A measurement of the clarity, or turbidity, of the water.
- **pCi/L (picocuries per liter):** Measure of radioactivity in water.
- **pH:** A measurement of acidity, 7.0 being neutral
- **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 picograms per liter.
- **TT (Treatment Technique):** A required process intended to reduce the level of a contaminant in drinking water.

Water Quality Results

Regulated Substances (Measured by Paris Water Works, KY0090343, on Water Leaving the Treatment Facility)

Substance (units)	Year Sampled	MCL	MCLG	Paris Water Works		Typical Source
				Highest Value	Range Low-High	
Gross Alpha emitters (pCi/L)[1]	2008	15	0	1.8	1.8 – 1.8	Erosion of natural deposits
Combined Radium (pCi/L)[2]	2008	5	0	0.79	0.79 – 0.79	Erosion of natural deposits
Barium (ppm)	2015	2	2	0.02	NA	Discharge from petroleum refineries; Fire retardants; Ceramics; Electronics; Solder
Chlorobenzene (ppb)	2015	100	100	0.7	ND - 0.7	Discharge from chemical and agricultural chemical factories.
Fluoride (ppm)	2015	4	4	0.90	NA	Water additive that promotes strong teeth
Nitrate (ppm)	2015	10	10	2.2	NA	Runoff from fertilizer use; Leaching from septic tanks; Sewage; Erosion of natural deposits
Total Organic Carbon (ppm)[3]	2015	TT	NA	0.82	0 – 1.87	Naturally present in the environment
Turbidity (NTU)[4]	2015	TT	NA	0.381	100% monthly lowest	Soil runoff
Uranium (ppb)	2008	20	3	0.41	0.41 – 0.41	Naturally present in the environment
Xylenes (ppm)	2015	10	10	0.0012	ND - 0.0012	Discharge from petroleum factories; Discharge from chemical factories
Chromium (ppb)[5]	2014	NA	NA	0.24	0.23 - 0.24	Discharge from steel and pulp mills; Erosion of natural deposits

Unregulated Substances (Measured by Paris Water Works, KY0090343, on Water Leaving the Treatment Facility)

Substance (units)	Year Sampled	MCL	MCLG	Highest Value	Range (Low-High)	Typical Source
Chromium-6 (ppb)[5]	2014	NA	NA	0.095	0.031 - 0.095	Naturally-occurring element; used in making steel and other alloys; chromium-3 or -6 forms are used for chrome plating, dyes and pigments, leather tanning, and wood preservation
Strontium (ppb)[5]	2014	NA	NA	160	100 - 160	Naturally-occurring element; historically, commercial use of strontium has been in the faceplate glass of cathode-ray tube televisions to block x-ray emissions
Vanadium (ppb)[5]	2014	NA	NA	0.98	0.29 - 0.98	Naturally-occurring elemental metal; used as vanadium pentoxide which is a chemical intermediate and a catalyst

Bacterial Results (Measured in the Distribution System Kentucky American Water, KY0090287)

Substance (units)	Year Sampled	MCL	MCLG	Highest Percentage Detected	Typical Source
Total Coliform	2015	1 positive monthly sample	NA	1	Naturally present in the environment

Regulated Substances (Measured in the Distribution System by Kentucky American Water, KY0090287)

Substance (units)	Year Sampled	MCL	MCLG	Highest RAA	Range Low-High	Typical Source
Total Trihalomethanes (ppb)[6]	2015	80	NA	54	33 - 76	By-product of drinking water disinfection
Haloacetic Acids (ppb)[6]	2015	60	NA	47	28 - 82	By-product of drinking water disinfection
Chlorine (ppm)	2015	MRDL = 4	MRDLG = 4	1.85	0.69 - 4.49	Water additive used to control microbes

Regulated Substances (Measured at the Customer's Tap by Kentucky American Water, KY0090287)

Substance (units)	Year Sampled	Action Level	MCLG	90th Percentile	Number of Samples	Number of Samples Above Action Level	Typical Source
Copper (ppm)[7]	2015	1.3	1.3	0.111	12	0	Corrosion of household plumbing systems
Lead (ppb)[7]	2015	15	0	3	12	0	Corrosion of household plumbing systems

1. **Alpha and Beta or Photon Emitters:** The MCL for beta or photon emitters is 4 mrem/year (millirems per year is a measure of radiation absorbed by the body). The results in the table are reported in picocuries/liter (pCi/L). EPA considers 50 pCi/L the level of concern for beta emitters. Paris Water Works conducted analysis in 2008.
2. **Combined Radium**: Radium-226 and Radium-228 concentrations added together. Paris Water Works conducted analysis in 2008.
3. **Total Organic Carbon:** Although the concentration is listed as ppm, the values shown are ratios that are 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. The number reported in the Highest Value column is actually the lowest RAA, calculated quarterly, for the year.
4. **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.
5. **Unregulated Contaminant Monitoring Rule 3 (UCMR3):** Results in table are for 2014 monitoring by the Paris Water Works. Chromium is a regulated contaminant that was tested with the rest of the UCMR3 constituents.
6. **Total Trihalomethanes (TTHM's) and Haloacetic Acids (HAA's):** Compliance is 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.
7. **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. Lead and copper results are from samples collected by Kentucky American Water.