

# 2010 Water Quality Report



Customer Service Department 270.442.2746  
Water Quality Department 270.442.2746  
website: [pwwky.com](http://pwwky.com)

Paducah Water PWSID 0730533  
Paducah Water/Reidland Area PWSID 0730368

# Welcome to Paducah Water's Annual Report of Water Quality

Inside you will find detailed information about the water you use every day. In addition, departmental summaries show you there is more to your water than the end result of turning on the tap. You will read detailed accomplishments of the previous year and a brief outline of plans for the future. If you have questions about PW, we encourage you to contact any customer service representative.

## Overview

We want to thank you for taking the time to read our Consumer Confidence Report of Water Quality. The past year was a special one for us at Paducah Water – we are pleased to have celebrated our 125th year of service to the people of this community.

The year was marked with many changes, some new additions to our staff, and the loss of two long-time board members, who will be sincerely missed.

In early 2010, long-time board member Bill Gore was tragically killed in an automobile accident in Florida along with his wife and sister-in-law. Gore served on PW's board for several years. His smiling face and quick wit will be sorely missed at monthly board meetings.

Just a few days later, W. J. Brockenborough lost his battle with cancer. Mr. Brockenborough had served on the PW board for nearly 30 years, more than 20 of which he held the position of chair. He was instrumental in the construction of the North 8th Street water treatment facility. Mr. Brockenborough's leadership on PW's board will most surely leave a void.

In recognition of his long-standing service to the organization, PW's board recently renamed and dedicated the treatment facility in his honor. Members of his family along with community leaders and PW employees attended the ceremony.

Our 125th year also was a year of change. PW continued the work that began the previous year to

supply water to the Reidland area from the Paducah treatment facility. The Reidland system will soon be supplied solely from the Paducah plant. You can read more about PW's investment in water quality in the engineering section of this report.

PW's water quality team added a fresh face with the hiring of a new Water Quality Supervisor. You can read more about our newest staff member in the Water Quality section of this report.

For year's we've been telling you about our efforts to ensure water quality and the high level of service we strive to provide. This year, PW was recognized for those efforts with the Ten-Year Director's Award from the Partnership for Safe Water.

PW's 125th year of service was certainly a year of change. We are confident our next 125 years will continue to see the organization advance and grow, while we continue to be the region's Clear Clean Choice for safe, affordable, reliable service.

*Glen Anderson – General Manager*

## Water Quality

Paducah Water's Water Quality Team started off the 125th year of service by meeting all regulatory agencies' requirements. Plus, PW's Microbiology lab again passed the yearly performance evaluation test and audit for certification in Kentucky.

PW's ongoing efforts to provide the cleanest, best-tasting water possible were recognized by the Partnership for Safe Water with a Ten-Year Director's Award for water quality. The Partnership for Safe Water is a voluntary program from the American Water Works Association. As a member of the Partnership, PW performs a rigorous self-assessment of our treatment facility and distribution system using proven tools to determine optimization status. The Ten-Year Director's Award is yet another outward example of our commitment to our customers.

Part of PW's water quality efforts include constant testing of water in the system. PW performs more than 300 water quality tests every day in the company's onsite Wet Chemistry and Microbiology lab. Test samples are taken at the treatment facility

as well as from points throughout PW's service area.

This year saw a change in PW's lab. Mindy Martin has joined the PW team as the company's new Water Quality Supervisor. Martin will head up the water quality team and supervise the lab and all testing within the lab.

Martin holds a Bachelor of Science degree from Murray State University and maintains Kentucky's Safe Drinking Water Certification. She comes to PW after 3 years of work at a state-certified commercial water laboratory.

While not as much in the forefront of customers' minds, chemical treatments play an important role in maintaining water quality. Many of these chemicals can pose hazards if not properly stored and handled. To this end, PW recently completed the renovation of the company's bulk chemical storage room. The changes include new storage tanks, as well as spill prevention measures and retention walls.

Also last year, PW continued working to secure reliability for customers served by the organization's Reidland treatment facility. The treatment facility and well

field of the system is at the end of its life cycle and the water quality team continues to partner with our engineering department to move the \$7.5 million dollar Reidland Project forward. Details and progress of the project are outlined in the engineering section of this report.

## Engineering & Distribution

Paducah Water's Engineering and Distribution Departments continue to move forward with implementation of the company's Capital Plan. The plan includes several mid- to large-sized replacement projects as well as some regular maintenance items. Most notably, the plan outlines PW's work to move treatment of water for the Reidland area from the Reidland Treatment Facility to the Paducah Plant.

In 2007, PW installed an inline booster pumping station on Benton Road, and tied the Paducah and Reidland systems together with a new main under Clarks River. This



## Engineering & Distribution (continued.)

was the first step in the multi-million dollar project that includes the installation of about 37,000 feet of new water main from the Southside pump station to the Said Road area, along with a new two million gallon storage tank and a new pump station on I. C. Avenue. The Reidland Project will be completed this year and will be the major focus of the engineering and distribution teams.

In addition to major tasks like the Reidland Project, the Engineering and Distribution Departments also work to maintain reliability and water quality in the existing distribution system with a program of main replacements. Plus, PW is constantly expanding the system to meet the needs of new customers. The past year was no exception, with several replacement and expansion projects completed. During any given year, PW installs or replaces several thousand feet of water main.

Two of the larger projects this year included the replacement of nearly 3,400 feet of 6-inch water main along 23rd and 24th Streets and 1,600 feet of 8-inch water main at Schneidman Road. These two projects alone represent nearly \$500,000 in investment and renewed service to more than 100 PW customers. Other projects completed in the last year included the replacement of 1,400 feet of 6-inch water main on Bloom Avenue and 2,400 feet of new 6-inch water main along Meredith Road. Crews also completed work on the replacement of nearly 800 feet of 6-inch pipe along Oak Street, 520 feet of 3-inch main at Willowick Trail. The first phase of an extension along New Holt Road was recently completed with the installation of a little more than 400 feet of new 8-inch pipe.

Work will continue in the New Holt Road area throughout the coming year.

In addition to main replacement and expansion, PW continued its flushing program to ensure the highest

quality water. A dedicated crew works year round, systematically flushing the entire distribution system. This crew also performs an inspection of each of the more than 3,600 fire hydrants to ensure operational condition.

## Customer Service

For 125 years, Paducah Water has worked to provide the citizens of this region, with the cleanest, clearest, best-tasting water at the best price possible. While much of that work focuses on treatment facilities, pipes and pumps, PW knows it is much more than that.

The customers that pay the bills are ultimately whom we work for, and that is never more top-of-mind than in PW's customer service team. It's sometimes easy to forget that there are people at the other end of the tap when you are digging a trench in 100-degree weather, but you don't forget that fact when you are the one answering the phones in the business office. Whether it is a question about a bill, or a new customer wanting to establish service, PW's customer service team is there to help.

In the last year, PW's Customer Service Team has made a few changes to better meet customers' needs. Customer Service Representatives now rotate their time between answering phone calls and working at the front desk. This means customer service representatives will be able to see all aspects of the business. Most of the time, the types of customer service inquiries that come on the phone are different than those that happen in person.

Another change made this year was the reclassification of a service technician to the office staff. This change allows for direct contact between Customer Service Representatives and staff in the field, thus eliminating common mistakes due to miscommunication. Further, because the Service Technician is based out of the business office instead of the Distribution Department, they can more quickly respond to customers' needs.

Of course, part of customer service is

accepting payments for customers' water bills. Over the years, PW has made a concerted effort to make paying a bill as easy as possible. PW not only accepts payments in person, but also online and at drop boxes throughout the service area. PW also accepts credit and debit card payments by phone. Plus, PW offers a direct debit service, which automatically deducts the amount of your water bill from your bank account each month.

PW has had a great 125 years and is the Clear Clean Choice for quality service now and will be the same Clear Clean Choice for the next 125 years.

## Water Sources

The sources of the water supply for PW customers are the Ohio and Tennessee Rivers. This is considered to be a surface water source. A final source water assessment for this system has been completed and is contained in the Source Water Assessment and Protection Plan Susceptibility Analysis and Protection Recommendations for McCracken County. The completed plan is available for inspection and can be obtained at the Purchase Area Development District office at 270.247.7171. A summary of the susceptibility analysis is as follows. An analysis of the susceptibility of Paducah Water's water supply to contamination indicates that this susceptibility is generally high. There are numerous petroleum storage facilities along the Ohio and Tennessee Rivers that provide fuel to land and river transportation. Numerous bridges cross the Ohio and Tennessee Rivers as well as major tributaries such as the Clarks River and Island Creek. These bridges are of greater concern due to the possibility of hazardous materials infiltrating the water source near the intake due to traffic accidents, structural collapse of the bridge, or illegal dumping. River traffic is a concern that has become more prevalent in the past few years due in part to increased news coverage of accidents and collisions. Other potential areas of concern are Island Creek and local farming practices.

The sources of the water supply for PW's Reidland customers are seven wells

located in the Reidland area. These wells are considered to be a ground water source drawing water from the unconsolidated sands of the Claiborne Group in McCracken County. A final Source Water Assessment for this system has been completed and is contained in the Wellhead Protection Plan Phase II for Paducah Water's Reidland Treatment Plant approved by the Kentucky Division of Water, Groundwater Branch in November 2003. The completed Source Water Assessment Plan (SWAP) is available for inspection and can be obtained at the Kentucky Division of Water at 502.564.3410 and at the Purchase Area Development

District office at 270.247.7171. A summary of the susceptibility analysis is as follows. An analysis of the overall susceptibility to contamination of Paducah Water's Reidland water supply indicated that the susceptibility is high. There are a total of seven (7) potential sources of contamination within the wellhead protection area with the following susceptibility rankings: 6 high, 1 medium, and 0 low. Sources of high potential impact include: underground storage tanks, dry cleaners, and Highways 62, 131, and 284. Sources of moderate potential impact include underground storage tanks.

## Special Information Available

Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised persons such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly, and infants can be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. EPA/Centers for Disease Control and Prevention (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).

## PADUCAH WATER PWSID KY0730533 Plant A

The data presented in this report are from the most recent testing done during 2008 or in prior years in accordance with administrative regulations in 401 KAR Chapter 8. As authorized and approved by EPA, the State has reduced monitoring requirements for certain contaminants to less often than once per year because the concentrations of these contaminants are not expected to vary significantly from year to year. Some of the data in this table, though representative, may be more than one year old. Unless otherwise noted, the report level is the highest level detected.

	Allowable Levels	Highest Single Measurement	Lowest Monthly %	Violation	Likely Source		
<b>Turbidity (NTU) TT<sup>A</sup></b>	No more than 1 NTU <sup>A</sup> Less than 0.3 NTU in 95% of monthly samples	0.17	100	No	Soil runoff		
<b>REGULATED CONTAMINANT TEST RESULTS</b>							
Contaminant [code] (units)	MCL	MCLG	Report Level	Range of Detection	Date of Sample	Violation	Likely Source of Contamination
<b>RADIOACTIVE CONTAMINANTS</b>							
<b>Alpha emitters [4000] (pCi/L)<sup>B</sup></b>	15	0	2.1	2.1 to 2.1	Oct. 08	No	Erosion of natural deposits
<b>Combined radium (pCi/L)</b>	5	0	1.0	1 to 1	Oct. 08	No	Erosion of natural deposits
<b>INORGANIC CONTAMINANTS</b>							
<b>Barium [1010] (ppm)</b>	2	2	0.022	0.022 to 0.022	Jan-09	No	Drilling wastes; metal refineries; erosion of natural deposits
<b>Copper [1022] (ppm) sites exceeding action level 0</b>	AL = 1.3	1.3	0.192 (90th percentile)	0.001 to 0.657	July-09	No	Corrosion of household plumbing systems
<b>Fluoride [1025] (ppm)</b>	4	4	1.01	0.773 to 1.243	Bimonthly max Oct-09	No	Water additive which promotes strong teeth
<b>Lead [1030] (ppb) sites exceeding action level 0</b>	AL = 15	0	0 (90th percentile)	0 to 22	July-09	No	Corrosion of household plumbing systems
<b>Nitrate [1040] (ppm)</b>	10	10	0.584	0.584 to 0.584	Jan-09	No	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits
<b>SYNTHETIC ORGANIC CONTAMINANTS INCLUDING PESTICIDES AND HERBICIDES</b>							
<b>Atrazine [2050] (ppb)</b>	3	3	0.25	0.25 to 0.25	July 09	No	Runoff from herbicid used in row crops.
<b>DISINFECTANTS/DISINFECTION BYPRODUCTS AND PRECURSORS</b>							
<b>Total Organic Carbon (ppm) (measured as ppm, but reported as a ratio)</b>	TT <sup>*</sup>	N/A	1.21 (lowest average)	1.09 to 1.55 (monthly ratios)	N/A	No	Naturally present in environment.
<i>*Monthly ratio is the % TOC removal achieved to the % TOC removal required. Annual average of the monthly ratios must be 1.00 or greater for compliance.</i>							
<b>Chlorine (ppm)</b>	MRDL = 4	MRDLG = 4	1.12 (highest average)	0.02 to 2.0	N/A	No	Water additive used to control microbes.
<b>Chlorite (ppm)</b>	1	0.8	0.92 (average)	0.0 to 0.958	Monthly July	No	Byproduct of drinking water disinfection.
<b>Chlorine dioxide (ppb)</b>	MRDL = 800	MRDLG = 800	660	0 to 660	Monthly Max Jan	No	Water additive used to control microbes.
<b>HAA (ppb) [Haloacetic acids]</b>	60	N/A	24(RAA) (system average)	0 to 67 (range of system sites)	N/A	No	Byproduct of drinking water disinfection
<b>TTHM (ppb) (all sites) [total trihalomethanes]</b>	80	N/A	38 (system average)	4 to 88 (range of system sites)	N/A	No	Byproduct of drinking water disinfection
<b>OTHER CONTAMINANTS</b>							
<b>Cryptosporidium [oocysts/L]</b>	0	TT (99% removal)	0 (positive samples)	12 (number of samples)	N/A	No disinfection	Human and animal fecal waste

<sup>A</sup> Turbidity: Turbidity is used to measure cloudiness in drinking water. Analysis is conducted on representative samples of filtered water. We monitor because it is a good indicator of the quality of water and the effectiveness of our filtration system.

<sup>B</sup> Alpha Emitters were measured as Gross Alpha

\* Treatment Technique (TT) for TOC's is based on the lowest running annual average of the monthly ratios of the % TOC removal achieved to the % TOC removal required. A minimum ratio of 1.00 is required to meet the TT.

## Definitions and Abbreviations

**Maximum Contaminant Level (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 (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 (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 (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.

> - GREATER THAN < - LESS THAN

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

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

**N/A** – Not applicable. Does not apply

**NTU** - Nephelometric Turbidity Unit, a measure of water clarity

**pCi/l** – PicoCuries per liter, a measure of radioactivity in water.

**ppb (µg/l)** – Parts per billion or micrograms per liter.

**ppm (mg/l)** – Parts per million or milligrams per liter.

**RAA** – Running annual average of all the samples taken from a sampling point.

**BDL** – Below Detection Levels. Laboratory analysis indicates that the contaminant isn't present.

## PADUCAH WATER/REIDLAND AREA PWSID KY0730368 (533 After August 19) Plant B

The data presented in this report are from the most recent testing done during 2008 or in prior accordance with administrative regulations in 401 KAR Chapter 8. As authorized and approved by EPA, the State has reduced monitoring requirements for certain contaminants to less often than once per year because the concentrations of these contaminants are not expected to vary significantly from year to year. Some of the data in this table, though representative, may be more than one year old. Unless otherwise noted, the report level is the highest level detected.

### REGULATED CONTAMINANT TEST RESULTS

Contaminant [code] (units)	MCL	MCLG	Report Level	Range of Detection	Date of Sample	Violation	Likely Source of Contamination
<b>RADIOACTIVE CONTAMINANTS</b>							
<b>Alpha emitters<sup>A</sup> [4000] (pCi/L)</b>	15	0	5.6	5.6 to 5.6	May 08	No	Erosion of natural deposits
<b>Combined radium (pCi/L)</b>	5	0	2.0	2.0 to 2.0	May 08	No	Erosion of natural deposits
<b>INORGANIC CONTAMINANTS</b>							
<b>Barium [1010] (ppm)</b>	2	2	0.093	0.093 to 0.093	Jan-08	No	Drilling wastes; metal refineries; erosion of natural deposits
<b>Copper [1022] (ppm) sites exceeding action level 0</b>	AL = 1.3	1.3	0.003 (90th percentile)	0.003 to 0.003	Jan-09	No	Corrosion of household plumbing systems
<b>Fluoride [1025] (ppm)</b>	4	4	1.04	0.834 to 1.27	Dec.-09	No	Water additive which promotes strong teeth
<b>Lead [1030] (ppb) sites exceeding action level 0</b>	AL = 15	0	0 (90th percentile)	0 to 7	Sept.-08	No	Corrosion of household plumbing system
<b>Nitrate [1040] (ppm)</b>	10	10	0.063	0.063 to 0.063	July - 09	No	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits
<b>DISINFECTANTS/DISINFECTION BYPRODUCTS AND PRECURSORS</b>							
<b>Chlorine (ppm)</b>	MRDL = 4	MRDLG = 4	1.37 (highest average)	0.33 to 2.2	N/A	No	Water additive used to control microbes.
<b>HAA (ppb) [Haloacetic acids]</b>	60	N/A	10 (RAA)	0 to 42	N/A	No	Byproduct of drinking water disinfection.
<b>TTHM (ppb) [total trihalomethanes]</b>	80	N/A	22 (RAA)	4 to 77	N/A	No	Byproduct of drinking water disinfection.

<sup>A</sup> Alpha Emitters were measured as Gross Alpha



Paducah Water  
P.O. Box 2377  
Paducah, KY 42002-2377

PRSR STD  
U.S. Postage  
**PAID**  
Paducah, KY  
Permit #154

## Paducah Water Contact Information

If you are interested in learning more about the water department and water quality, there are a number of opportunities available. Questions about water service may be answered by calling our Customer Service office at 270.442.2746. Questions about water quality may be answered by calling our Water Quality Department at 270.442.2746.

The members of the Commissioners of Waterworks meet at 5:00 p.m. on the last Wednesday of each month at the Paducah Water Works office, 401 Washington Street. Board sessions are open to the public.

The sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs, and wells. As water travels over the surface of the land or through the ground, it dissolves naturally-occurring minerals and, in some cases, radioactive material, and may pick up substances resulting from the presence of animals or from human activity.

Contaminants that may be present in source water include:

- (A) *Microbial contaminants*, such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife.
- (B) *Inorganic contaminants*, such as salts and metals, which can be naturally-occurring or result from urban stormwater runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming.
- (C) *Pesticides and herbicides*, which may come from a variety of sources such as agricultural, urban stormwater runoff, and residential uses.
- (D) *Organic chemical contaminants*, including synthetic and volatile organic chemicals, which are by-products of industrial processes and petroleum production, and can also come from gas stations, urban stormwater runoff, and septic systems.
- (E) *Radioactive contaminants*, which can be naturally-occurring or be the result of oil and gas production and mining activities.

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

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 **EPA's Safe Drinking Water Hotline (800.426.4791)**.

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. Paducah 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 two 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 Safe Drinking Water Hotline of at <http://www.epa.gov/safewater/lead>.

For questions about the quality of our drinking water or about this report, call Paducah Water's Water Quality Department at 270.442.2746