



2016 water QUALITY REPORT

OVERVIEW

This Water Quality Report (also known as a Consumer Confidence Report) presents information about the steps we take to ensure we provide the highest quality product and service our customers expect. The data shown in this report are the results of testing conducted from January through December 2015.

The recent water crisis in Flint, Michigan has emphasized the need for well-educated and experienced staff, each of whom is dedicated to producing and distributing safe, high-quality drinking water to the people we serve. The em-



ployees at Paducah Water understand that supplying clean tap water to this community is our responsibility. Our employees are knowledgeable of the water industry and are continu-

ally trained on industry standards, regulations and guidelines. Each of our water treatment plant operators must have or obtain a Class IV Operator's license (the highest level available) which requires either a minimum of 5 years of experience or a technical college degree combined with at least 1 year of experience. PW distribution operators are required to have or must work toward a Class IV Distribution license (the highest level available). We employ 2 civil engineers with combined experience of over 45 years. And our management staff has a collective total of 75 years of experience at Paducah Water.

Well trained, experienced, knowledgeable employees who understand the significant impact clean drinking water has on our community—that's why Paducah Water is still the Clear, Clean Choice!

Bill Robertson, GENERAL MANAGER



PADUCAH WATER CONTACT INFORMATION

For questions about the quality of our drinking water or about this report, call PW's Water Quality Department at 270.444.5572. The members of the Commissioners of Waterworks meet at 5 p.m. on the last Wednesday of each month at the Paducah Water office, 1800 North 8th Street. Board meetings are open to the public.

Customer Service
Department
270.442.2746

Water Quality Department
270.444.5572

Paducah Water
PWSID-KY0730533
pwwky.com

PADUCAH WATER PWSID KY0730533 TEST RESULTS FROM 2015

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. Unless otherwise noted, the report level is the highest level detected.

Turbidity (NTU)	Allowable Levels TT*	Highest Single Measurement 0.26	Lowest Monthly % 100	Violation No	Likely Source Soil runoff
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*Treatment Technique (TT) for Turbidity is a representative sample of filtered water. No more than 1 NTU and less than 0.30 NTU in at least 95% of the samples is required to meet TT.

REGULATED CONTAMINANTS TEST RESULTS

Contaminant [code] (units)	MCL	MCLG	Report Level	Range of Detection	Date of Sample	Violation	Likely Source of Contamination
Microbiological Contaminants							
Total Coliform Bacteria # or % positive samples	5%	0	2.47% monthly maximum	3 Positive Samples	July - 15	No	Naturally present in the environment
Radioactive Contaminants							
Combined radium (pCi/L)	5	0	2.3	2.3 to 2.3	April - 14	No	Erosion of natural deposits
Inorganic Contaminants							
Barium [1010] (ppm)	2	2	0.019	0.019 to 0.019	Jan. - 15	No	Drilling wastes; metal refineries; erosion of natural deposits
Copper [1022] (ppm) sites exceeding action level 0	AL = 1.3	1.3	0.112 (90th percentile)	0.0087 to 0.215	Sept - 15	No	Corrosion of household plumbing systems
Fluoride [1025] (ppm)	4	4	0.8	0.8 to 0.8	Jan. - 15	No	Water additive which promotes strong teeth
Lead [1030] (ppb) sites exceeding action level 0	AL = 15	0	0 (90th percentile)	0 to 9	Sept. - 15	No	Corrosion of household plumbing systems
Nitrate [1040] (ppm)	10	10	0.5	0.5 to 0.5	Jan. - 15	No	Fertilizer runoff; leaching from septic tanks, sewage; erosion of natural deposits
Synthetic Organic Contaminants including Pesticides and Herbicides							
Atrazine [2050] (ppb)	3	3	0.20	0.20 to 0.20	July - 15	No	Runoff from herbicide used on row crops
Disinfectants/Disinfection Byproducts and Precursors							
Total Organic Carbon (ppm) (measured as ppm, but reported as a ratio)	TT*	N/A	1.13 (lowest average)	1.08 to 1.7 (monthly ratios)	2015	No	Naturally present in environment

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

Chlorine (ppm)	MRDL = 4	MRDLG = 4	1.00 (highest average)	0.2 to 2.05	2015	No	Water additive used to control microbes
Chlorite (ppm)	1	0.8	0.65 (average)	0.31 to 0.67	2014	No	Byproduct of drinking water disinfection
Chlorine dioxide (ppb)	MRDL = 800	MRDLG = 800	171	0 to 171	2014	No	Water additive used to control microbes
HAA (ppb) (Stage 2) [Haloacetic acids]	60	N/A	57 (highest LRAA)	7 to 84 (range of individual sites)	2015	No	Byproduct of drinking water disinfection
TTHM (ppb) (Stage 2) [total trihalomethanes]	80	N/A	86 (highest LRAA)	30 to 136 (range of individual sites)	2015	Yes	Byproduct of drinking water disinfection

Unregulated Contaminants (UCMR 3) Plant Tap

Contaminant [code] (units)	Average	Range (ppb)	Highest Month
1,4-dioxane	0.16	0.08 to 0.23	Nov. - 13
Vanadium	0.45	0.00 to 0.70	Aug. - 13
Molybdenum	0.78	0.00 to 2.10	Nov. - 13
Strontium	97.50	55.00 to 140.00	Nov. - 13
Chromium-6	0.07	0.06 to 0.07	Aug. - 13
Chlorate	322.50	190.00 to 540.00	Aug. - 13

Unregulated Contaminants (UCMR 3) Distribution

Contaminant [code] (units)	Average	Range (ppb)	Highest Month
Vanadium	0.60	0.30 to 0.80	Aug. - 13
Molybdenum	0.80	0.00 to 2.20	Nov. - 13
Strontium	106.00	65.00 to 150.00	Nov. - 13
Chromium-6	0.11	0.08 to 0.12	Aug. - 13
Chlorate	373.00	230.00 to 650.00	Aug. - 13

UCMR 3 testing was performed quarterly from 5/2013-2/2014

Our water system has sampled for a series of unregulated contaminants. Unregulated contaminants are those that don't yet have a drinking water standard set by the USEPA. The purpose of monitoring for these contaminants is to help EPA decide whether the contaminants should have a standard. There are no MCLs and therefore no violations if found.

Contaminant [code] (units)	Average	Range of Detection	Date of Sample
Unregulated Contaminant			
Sodium (ppm) EPA Guidance Level - 20 ppm	9.9	9.9 to 9.9	Jan. - 15

DEFINITIONS & 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.

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.

> GREATER THAN < LESS THAN

Not Applicable (N/A): Does not apply.

Nephelometric Turbidity (NTU): A measure of water clarity.

Picocuries per liter (pCi/l): A measure of radioactivity in water.

Parts per billion (ppb): Micrograms per liter.

Parts per million (ppm): Milligrams per liter.

LRAA: Locational running annual average. The annual average of one monitoring location.

Below Detection Level (BDL): Laboratory analysis indicates that the contaminant is not present.

WATER SOURCES

The sources of the water supply for Paducah Water customers are the Ohio and Tennessee Rivers. These are considered to be surface water sources. 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 PW'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.



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SOURCE WATER CONTAMINANTS

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 natural-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.*

SPECIAL HEALTH INFORMATION

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 the Safe Drinking Water Hotline or by going to www.epa.gov/safewater/lead.

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).

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

Turbidity has no health effects. However, turbidity can interfere with disinfection and provide a medium for microbial growth. Turbidity may indicate the presence of disease-causing organisms. These organisms include bacteria, viruses, and parasites that can cause symptoms such as nausea, cramps, diarrhea and associated headaches.

TTHMs [Total Trihalomethanes]. Testing results from 7/7/2015 show that our system exceeded the standard, or maximum contaminant level (MCL), for TTHM. The standard for TTHM is 0.080 mg/L. The MCL is determined by averaging all the samples collected at each sampling location for the past 12 months. The level of TTHM averaged at one of our system's locations for the compliance period of 7/1/2015 to 9/30/2015 was 0.086 mg/L. Elevated levels of algae on the Ohio River was identified as the cause. Actions taken at the Treatment Plant included moving disinfectant and carbon feed locations and maintaining a higher residual of an oxidant and coagulant. In distribution, alterations were made to storage tanks and flushing volume to assist in TTHM removal. Biweekly testing proved our efforts were effective during the study. 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.