City of PIQUA

2015 Water Quality Report

New Water Treatment Plant Rendering

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PIQUA MUNICIPAL WATER SYSTEM
Drinking Water Consumer Confidence Report For 2015

The Piqua Municipal Water System has prepared the following report to provide information to you, the consumer, on the quality of our drinking water. This report is required as part of the Safe Drinking Water Act Reauthorization of 1996 and is required to be delivered to the consumers by July of 2016. Included within this report is general health information, water quality test results, how to participate in decisions concerning your drinking water, and water system contacts.

Water quality is the number one priority of the Piqua Water Treatment Plant. Constant testing (more than 300 analysis daily) by the dedicated staff of certified operators and laboratory personnel ensure the highest standards for drinking water quality are being met at all times.

How do I participate in decisions concerning my drinking water? {141.153(h)(4)}
If you have any questions or would like more information on your drinking water, visit Piqua's web page at www.piquaoh.org, or contact Don Freisthler of the Piqua Municipal Water System at (937) 778-2090, or by e-mail at dfreisthler@piquaoh.org.

Public participation is encouraged at regular meetings of the City of Piqua Commission, which meets the first and third Tuesdays at 7:30 P.M. at the Piqua Municipal Government Complex.

Source water information.
The Piqua Municipal Water System receives its drinking water from the following three surface water sources:

The Piqua Hydraulic System – 19.43 % The Gravel Pit –36.22 % The Great Miami River – 44.35 %

About your drinking water. {d}
The EPA requires regular sampling to ensure drinking water safety. The Piqua Municipal Water System conducted sampling for bacteria, inorganic, synthetic organic, and volatile organic contaminant sampling during 2015. Samples were collected for a total of 87 different contaminants, most of which were not detected in the Piqua Municipal Water System's water supply. The Ohio EPA requires us to monitor for some contaminants less than once per year because the concentrations of these contaminants do not change frequently. Some of our data, though accurate, are more than one year old.

Who needs to take special precautions?
Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised persons, such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AID's or other immune system disorders, some elderly, and infants, can be particularly at risk from infection. These people should seek advice about drinking water from their health care providers. EPA/CDC guidelines on appropriate means to lessen the risk of infection by *Cryptosporidium* and other microbial contaminants are available from the Safe Drinking Water Hotline (1-800-426-4791).

What are sources of contamination to drinking water? {D}
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 can 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 storm water runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming; (C) Pesticides and herbicides, which may come from a variety of sources, such as agriculture, urban storm water 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 storm water 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. 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 Environmental Protection Agency's Safe Drinking Water Hotline (1-800-426-4791).

Unregulated Contaminant Monitoring Rule.
The Piqua Municipal Water System has completed the monitoring cycle for the chemicals listed in the Unregulated Contaminant Monitoring Rule List 1. None of the chemicals were found above the detection limits. Results or more information can be obtained from the Piqua Municipal Water System.

Elevated Lead Health Effects
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. The City of Piqua 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 drinking 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.

WATER QUALITY DATA

Definitions: MCLG: Maximum Contaminant Level Goal, or 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. - MCL: Maximum Contaminant Level, or the highest level of contaminant that is allowed in drinking water. MCLs are set as close to the MCLGs as feasible using the best available treatment technology. – AL: Action Level, or the concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow. – TT: Treatment Technique, or a required process intended to reduce the level of a contaminant in drinking water.
-"<": a symbol which means less than. A result of <5 means that the lowest level that could be detected was 5, and the contaminant in that sample was not detected. – NA: Not Applicable or no standard set.
Abbreviations: ppm: Parts per Million or Milligrams per Liter (mg/L) are units of measure for concentration of a contaminant. A part per million corresponds to one second in a little over 11.5 days. – ppb: Parts per Billion or Micrograms per Liter (µg/L) are units of measure for concentration of a contaminant. A part per billion corresponds to one second in 31.7 years.

Contaminants (Units)	MCLG	MCL	Level Found (Annual Avg.)	Range of Detection	Violation	Sample Year	Typical Source of Contaminants
Microbiological Contaminants							
Turbidity	NA	TT	0.171 (Highest Level)	0.047 – 0.171	NONE	2015	Soil runoff
Turbidity (% samples meeting Standards)	NA	TT	99.9%	99.9% - 100%	NONE	2015	
Inorganic Contaminants							
Fluoride (ppm)	4	4	1.10	0.80 – 1.23	NONE	2015	Erosion of natural deposits; Water additive which promotes strong teeth; Discharge from fertilizer & aluminum factories
Lead (ppb)	0	AL=15	<2.0	<2.0-11.0	NONE	2015	Corrosion of household plumbing systems
	Zero out of thirty samples was found to have lead in excess of the Action Level of 15 ppb. Results based on 90% Lead Level						
Copper (ppm)	1.3	AL=1.3	0.045	<0.010 – 1.0	NONE	2015	Corrosion of household plumbing; Erosion of natural deposits; leaching from wood preservatives
	Zero out of thirty samples was found to have copper levels in excess of the Action Level of 1.3 ppm. Results based on 90% Copper Level						
Barium (ppm)	2	2	0.12 (Single Sample)	NA	NONE	2015	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits
Nitrate (ppm)	10	10	5.93 (Highest Level)	0.71 – 5.93	NONE	2015	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits
Synthetic Organic Contaminants including Pesticides and Herbicides							
Atrazine (ppb)	3	3	0.56	<0.072 –2.3	NONE	2015	Runoff from herbicide used on row crops
Simazine (ppb)	4	4	0.09	<0.053–0.25	NONE	2015	Herbicide runoff
Volatile Organic Contaminants							
TTHMs (Total trihalomethanes) (ppb)	NA	80	63.68	46.2 – 81.3	YES	2015	By-product of drinking water chlorination
HAA5's (Haloacetic Acids) (ppb)	NA	60	23.36	16.1 – 28.9	NONE	2015	By-product of drinking water chlorination
Unregulated Contaminants							
Bromodichloromethane (ppb)	NA	NA	10.5	5.4-16.3	NONE	2015	Component of Total Trihalomethane
Dibromochloromethane (ppb)	NA	NA	3.4	1.46-5.59	NONE	2015	Component of Total Trihalomethane
Bromoform	NA	NA	3.7	<0.5-52.4	NONE	2015	Component of Total Trihalomethane
Chloroform (ppb)	NA	NA	41.64	10.0-98.2	NONE	2015	Component of Total Trihalomethane
Dichloroacetic Acid (ppb)	NA	NA	15.19	9.09 – 27.5	NONE	2015	Component of Haloacetic Acids
Trichloroacetic Acid (ppb)	NA	NA	4.19	2.62 – 7.17	NONE	2015	Component of Haloacetic Acids
Monochloroacetic Acid (ppb)	NA	NA	2.19	<2.0 –3.14	NONE	2015	Component of Haloacetic Acids
Dibromoacetic Acid (ppb)	NA	NA	1.3	<1.0 –1.62	NONE	2015	Component of Haloacetic Acids
Total Organic Carbon (ppb)	NA	NA	2.46	1.96 – 4.53	NONE	2015	Naturally occurring Organic material in water
Residual Disinfectants							
Chlorine (ppm)	MRDL=4	MRDLG=4	1.09	0.89 –1.30	NONE	2015	Water additive used to control microbes

Turbidity is a measure of the cloudiness of the water and is an indication of the effectiveness of our filtration system. The turbidity limit set by the EPA is 0.3 NTU's in 95% of the daily samples and shall not exceed 1 NTU at any time. As reported above, the Piqua Municipal Water System's highest recorded turbidity result for 2014 was 0.238 NTU and the lowest monthly percentage of samples meeting the turbidity limit was 99.9%.

VIOLATION: The City of Piqua's Water System was in violation for exceeding the MCL of TTHM's(Total Trihalomethanes) in the third quarter of 2015(July. 1-Sept.. 30, 2015). The MCL for TTHM's is a four quarter running average of 80 ppb per site tested (EPA requires four sites to be tested quarterly), and the average for Piqua's water at one site was 81 ppb. During this time frame, the E. Ash Street Water Tower was out of service for painting. A TTHM removal system was installed in the E. Ash Tower during that time. Piqua returned to compliance in the fourth quarter with a current running average of 77 ppb.

Some people who drink water containing TTHM's in excess of the MCL over many years may experience problems with their liver, kidneys, or central nervous system and may have an increased risk of getting cancer.

The value reported under "Level Found" for Total Organic Carbon (TOC) is the lowest ratio between percent of TOC actually removed to the percentage of TOC required to be removed. A value of greater than one (1) indicates that the water system is in compliance with TOC removal requirements. A value of less than one (1) indicates a violation of the TOC removal requirements.

Contaminants (Units)	MCLG	MCL	Level Found	Range of Detection	Violation	Sample Year	Typical Source of Contaminants
Combined Raw Water Sample (Composited Data)							
Cryptosporidium (Oocysts/liter)	NA	NA	NA	0.00 – 0.03	No	2009	Human and animal activity; combined sewer overflows

The City of Piqua Water Department monitored for Cryptosporidium in the source water during 2009. Cryptosporidium was detected in 1 sample of 12 collected from the raw water. It was not detected in the finished water. Cryptosporidium is a microbial pathogen found in surface water throughout the U.S. Although filtration removes cryptosporidium, the most commonly used filtration methods cannot guarantee 100% removal. Monitoring of source water indicates the presence of these organisms. Currently test methods do not enable us to determine if the organisms are dead or if they are capable of causing disease. Symptoms of infection include nausea, diarrhea, and abdominal cramps. Most healthy individuals can overcome the disease. However, immuno-compromised people are at greater risk of developing life-threatening illness. We encourage immuno-compromised 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 City will again be conducting these tests in 2016 and 2017 as required by the Ohio EPA.

Unregulated Contaminate Testing

The Piqua Water Treatment Facility analyzed its plant tap water and a distribution source for Unregulated Contaminants on October 8, 2013. These results will be used for future regulations.

Unregulated Contaminate	Tap Result	Distribution Result	MRL
Hexavalent Chromium	0.23 ug/L	0.24 ug/L	0.030 ug/L
Chromium	0.24 ug/L	0.27 ug/L	0.20 ug/L
Molybdenum	5.1 ug/L	6.5 ug/L	1.0 ug/L
Strontium	710.0 ug/L	700.0 ug/L	0.30 ug/L
Vanadium	0.21 ug/L	0.27 ug/L	0.20 ug/L

Source Water Assessment

The City of Piqua Public Water System uses surface water drawn from the Piqua Hydraulic System, a gravel pit, and the Great Miami River. For the purposes of source water assessments, in Ohio all surface waters are considered to be susceptible to contamination. By their nature, surface waters are readily accessible and can be contaminated by chemicals and pathogens, which may rapidly arrive at the public drinking water intake with little warning or time to prepare. The City of Piqua drinking water source protection area contains a number of potential contaminant sources, which include runoff from row crop agriculture, septic systems, housing and commercial development in the watershed of the Hydraulic System. Potential spills at numerous road and rail bridges crossing the Great Miami River and its tributaries are also a threat.

The City of Piqua Public Water System uses a multiple barrier system to treat the water to meet drinking water quality standards, but no single treatment technique can address all potential contaminants. Implementing measures to protect the City's drinking water sources can further decrease the potential for water quality impacts. More detailed information is provided in the City of Piqua Drinking Water Source Assessment Report, which can be viewed by calling Don Freisthler, Water System Superintendent at 937-778-2090.

- **We have a current, unconditional license to operate our water system.**

Piqua Water Plant Update

On January 28th of 2015, the City of Piqua broke ground for the construction of the new water treatment plant. The plant is situated on 40 acres located at 9801 N. State Route 66. Just as the current treatment plant, the new plant will use the same three water sources, be lime softening, and have rapid sand filters.

The new plant however will have many updates that will give us better control and options for water treatment. The main feature of the new plant will be the use of granular activated carbon filters. These filters will assist us in the removal of taste and odor issues, reduce atrazine, and help reduce disinfectant byproducts. The new plant will also be more automated and give us better control of the treatment process. Peterson Construction Company is the contractor for the new plant. Construction of the plant is expected to be completed in July of 2017.