



2015 Annual

Water Quality Report

Crystal Lake

PWS ID: PA2409003



PENNSYLVANIA
AMERICAN WATER



Este informe contiene información importante acerca de su agua potable. Haga que alguien lo traduzca para usted, ó hable con alguien que lo entienda. (This report contains important information about your drinking water. Have it translated if needed.)

A Message from the Pennsylvania American Water President



Dear Valued Customer:

On behalf of all Pennsylvania American Water employees, I am pleased to share some very good news about the quality of your drinking water. As you read through our Annual Water Quality Report based on testing results between January and December 2015, you will see that we continue to supply water that meets or surpasses all state and federal water quality standards. **Better yet, the price you pay for this high-quality water service remains about one penny per gallon.**

This is an exceptional value when you consider the science, expertise, equipment and technology that go into bringing water from the source and treating it, plus the miles and miles of pipe to deliver clean water to your tap. What's more, our plant operators, water quality experts, engineers and maintenance crews work around the clock to make sure that quality water is always there when you need it.

Delivering reliable, high-quality water service also requires significant investment to maintain and upgrade aging infrastructure. **In 2015 alone, we invested approximately \$270 million in system improvements across the commonwealth.**

Water is essential for public health, fire protection, economic development and our overall quality of life. This is a responsibility that Pennsylvania American Water employees take very seriously to ensure that quality water keeps flowing not only today but well into the future. Please take the time to review this report with its details about the source and quality of your drinking water. We hope you agree that your water service is worth every penny.

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 system between January and December 2015.

Sincerely,

Kathy L. Pape
President, Pennsylvania American Water



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WE CARE ABOUT WATER. IT'S WHAT WE DO.®

Our Mark of Excellence

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.

Pennsylvania 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 2.3 million people.

We are once again proud to present our annual water quality report. This edition covers all testing completed from January through December 2015. Over the years, we have dedicated ourselves to producing drinking water that meets or surpasses all state and federal drinking water standards. We continually strive to adopt new and better methods of delivering the best quality drinking water to you. As regulations and drinking water standards change, it is our commitment to you to incorporate these changes system-wide in an expeditious and cost-effective manner, while maintaining our objective of providing quality drinking water at an affordable price.

We are pleased to tell you that our compliance with all state and federal drinking water laws remains exemplary. To that end, we remain vigilant in meeting the challenges of source water protection, water conservation, and community education while continuing to serve the need of all our water users.

For more information about this report, or for any questions relating to your drinking water, please feel free to call our Customer Service Department at 1-800-565-7292.

Source Water Information

Crystal Lake is the sole source of supply for the Crystal Lake service area. Pennsylvania American Water (PAW) maintains a treatment facility on the Crystal Lake Reservoir capable of processing a maximum of 6 million gallons of water per day (MGD). The water supply is distributed for residential, commercial, and industrial use.

Protecting Your Water Source

The Pennsylvania Department of Environmental Protection (DEP) and PAW completed an assessment of the drinking water sources for the Crystal Lake surface water supplies in 2003. The water sources were considered most vulnerable to the following potential impacts: roadways, well drilling, boating, runoff associated with golf courses and timbering, swamps, and salt storage areas.

A summary of the completed Source Water Assessment is available on the DEP website by following the link at the end of this paragraph. Additional information can also be obtained by calling the local office of the DEP at (570) 826-2511. PAW encourages you to take an active part in protecting your water supply by participating in local watershed activities as they occur in your area.

[Crystal Lake Source Water Assessment Program](#)

Other Water Quality Parameters of Interest

Is there lead in your 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. Pennsylvania 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: [U.S. Environmental Protection Agency Web Page on Lead](#)



Does your water contain nitrates?

PAW's normal range of nitrate levels is below the MCL of 10 ppm. Nitrate enters the water supply from fertilizers used on farms and natural erosion of deposits in the watershed. Levels above 10 ppm are a health risk for infants under six months of age and can cause blue baby syndrome. Check with your physician if you have questions.

How hard is your water?

Hardness is a measure of the concentration of two minerals naturally present in water – calcium and magnesium. High hardness levels cause soap not to foam as easily as it would at lower levels. Hardness levels in 2015 ranged from 8 ppm to 12 ppm, or approximately 0.5 to 0.7 grain per gallon of water. This water is classified as soft.

How much sodium is in your water?

The sodium level is approximately 3 ppm.

What is the pH (acidity) range of your water?

Water produced by the treatment facility in 2015 averaged 7.3 pH units. A pH of 7.0 is considered neutral, neither acidic nor basic.

Is there fluoride in your water?

PAW does not add fluoride to your water supply. The naturally occurring fluoride levels are typically at or below 0.1 ppm.

Partnership for Safe Drinking Water Program



In 2000, the Crystal Lake system was awarded the prestigious Director's Award under the Partnership for Safe Drinking Water Program. The program is administered by the U.S. Environmental Protection Agency, the Pennsylvania Department of Environmental Protection, and other water related organizations. The award honors utilities for achieving operational excellence by voluntarily optimizing their treatment facility operations and adopting more stringent performance goals than those required by federal and state drinking water standards. We are proud to report that the Crystal Lake system has met the voluntary goals of the program for 15 continuous years. In 2015, Crystal Lake's application for Partnership for Safe Water President's Award successfully met all criteria and was approved for Presidents Award status. The President's Award recognizes treatment plants that have achieved the highest possible levels of individual filter turbidity performance goals.

How to Contact Us

Additional copies of this report can be printed directly from this site at www.amwater.com/ccr/crystallake.pdf. Questions can be presented to our Customer Service Department at 1-800-565-7292. Additional information can be gathered by viewing the following links on the Internet:

[Pennsylvania American Water Web Page](#)

[Pa. Department of Environmental Protection Web Page](#)

[U.S. Environmental Protection Agency Web Page](#)

[Center for Disease Control and Prevention Web Page](#)

[American Water Works Association Web Page](#)

Safe Drinking Water Hotline: (800) 426-4791

Substances Expected to be in Drinking Water

In order to ensure that tap water is safe to drink, the U.S. Environmental Protection Agency (EPA) prescribes regulations which limit the amount of certain contaminants in water provided by public water systems. U.S. Food and Drug Administration regulations also establish limits for contaminants in bottled water, which must provide the same protection for public health. Pennsylvania American Water's treatment processes are designed to reduce any such substances to levels well below any health concern and the processes are controlled to provide maximum protection against microbial and viral pathogens which could be naturally present in surface and groundwater. 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 at (800) 426-4791.



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 may 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 EPA's Safe Drinking Water Hotline (800) 426-4791.

The source of drinking water (both tap water and bottled water) includes 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:

Microbial Contaminants, such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife.

Inorganic Contaminants, such as salts and metals, which can be naturally occurring or may result from urban stormwater runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming.

Pesticides and Herbicides, which may come from a variety of sources, such as agriculture, urban stormwater runoff, and residential uses.

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.

Radioactive Contaminants, which can be naturally occurring or may be the result of oil and gas production and mining activities.

Cryptosporidium

Cryptosporidium is a microbial pathogen found in surface water throughout the US. Although *Cryptosporidium* can be removed through commonly-used filtration methods, US EPA issued a new rule in January 2006 that requires systems with higher *Cryptosporidium* levels in their source water to provide additional treatment. In anticipation of this upcoming rule, Crystal Lake system monitored for *Cryptosporidium* in its raw water in 2007 and 2008. Based on the results of our *Cryptosporidium* monitoring, no additional treatment will be required by this new US EPA regulation. In April of 2009 and throughout the first quarter of 2011, Pennsylvania American Water monitored for *Cryptosporidium* in Bear Creek Reservoir, a supplemental source water for the Crystal Lake Water Treatment Plant. Sample results do not show a need to provide additional treatment.

How to Read This Table

Start with a **Substance** and read across. **Year Sampled** is usually in 2015 or prior year. **MCL** shows the highest level of each substance (contaminant) allowed. **MCLG** is the goal level for that substance (goal may be set lower than what is allowed). **Highest Amount Detected** represents the measured amount (lower is better). In some cases compliance is based on calculated values or values other than the **Highest Amount Detected**. In these instances the **Results** are shown with notations that explain the regulatory requirements. **Range** shows the highest and lowest amounts measured. A **Yes** under **Compliance Achieved** means the amount of the substance met government requirements. **Typical Source** tells where the substance usually originates.

Unregulated substances may be measured, but maximum allowed contaminant levels have not been established by the government. These contaminants are shown for your information.

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.

EP (Entry Point): A point at which finished water representative of each source enters the distribution system.

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 a 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 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.

NA: Not applicable

ND: Not detected

NTU (Nephelometric Turbidity Units): Measurement of the clarity, or turbidity, of the water.

pCi/L (picocuries per liter): Measurement of the natural rate of disintegration of radioactive contaminants in water (also beta particles).

ppm (parts per million): One part substance per million parts water, or milligrams per liter.

ppb (parts per billion): One part substance per billion parts water, or micrograms per liter ($\mu\text{g/L}$).

SS: Single sample

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

%: means percent.

90th Percentile: The highest concentration of lead or copper in tap water that is exceeded by 10 percent of the sites sampled during a monitoring period. This value is compared to the lead or copper action level (AL) to determine whether an AL has been exceeded.

<: means less than.

Water Quality Statement

We are pleased to report that during the past year, the water delivered to your home or business complied with all state and federal drinking water requirements. For your information, we have compiled a list in the table below showing what substances were detected in your drinking water during 2015. The Pennsylvania DEP allows us to monitor for some contaminants less than once per year because the concentration of the contaminants does not change frequently. Some of our data, though representative, are more than one year old. Although all of the substances listed below are under the Maximum Contaminant Levels (MCL) set by the U.S. Environmental Protection Agency and the Pennsylvania DEP, we feel it is important that you know exactly what was detected and how much of each substance was present in the water.

Water Quality Results

Turbidity – A Measure of the Clarity of the Water at the Treatment Facility

Substance (units)	Year Sampled	MCLG	MCL	Highest Single Measurement or Lowest Monthly % of Samples ≤ 0.3 NTU	Compliance Achieved	Typical Source
Turbidity (NTU) ¹	2015	NA	TT = 1 NTU for a single measurement	0.06 (Highest Reading)	Yes	Soil runoff
		NA	TT = at least 95% of monthly samples ≤ 0.3 NTU	100%	Yes	Soil runoff

¹ All turbidity readings were below the treatment technique requirement of 0.3 NTU in 95% of all samples taken for compliance on a monthly basis. Turbidity is a measure of the cloudiness of the water. It is monitored because it is a good indicator of the effectiveness of the filtration process.



Regulated Substances - Measured on the Water Leaving the Treatment Facilities

Substance (units)	Year Sampled	MCLG	MCL	Highest Amount Detected	Range Low - High	Compliance Achieved	Typical Source
Nitrate as Nitrogen (ppm)	2015	10	10	0.03	SS	Yes	Runoff from fertilizer use; Leaching from septic tanks; Sewage; Erosion of natural deposits

Disinfectant Residuals – Measured on the Water Leaving the Treatment Facility

Substance (units)	Year Sampled	Minimum Disinfectant Residual Required	Lowest Amount Detected	Range Low - High	Compliance Achieved	Typical Source
Entry Point Chlorine (ppm) ²	2015	0.2	1.3	1.3 - 2.2	Yes	Added as a disinfectant to the treatment process

² All chlorine readings were above the treatment technique requirement of not less than 0.2 ppm for more than 4 hours on water being supplied to the distribution system.

Disinfectant Residuals – Measured on the Water in the Distribution System

Substance (units)	Year Sampled	MRDLG	MRDL	Highest Monthly Average Detected	Range Low - High	Compliance Achieved	Typical Source
Distribution Chlorine (ppm) ³	2015	4	4	1.3	0.9 - 1.5	Yes	Added as a disinfectant to the treatment process

³ Routine individual samples were collected monthly with the results from all locations averaged each month. The monthly averages were then used to calculate a running annual average computed each quarter. The result represents the highest running annual average computed quarterly for the year. The range represents the range of monthly average results reported for compliance during the entire year.

Bacterial Results - Measured in the Distribution System

Substance	Year Sampled	MCLG	MCL	Highest Number of Positive Samples per Month	Compliance Achieved	Typical Source
Total Coliform Bacteria	2015	Zero bacteria	1 positive sample during the month	0	Yes	Naturally present in the environment

Regulated Compounds - Measured on the Water in the Distribution System

Substance (units)	Year Sampled	MCLG	MCL	Results	Range Low - High	Compliance Achieved	Typical Source
Combined Radium (pCi/l)	2014	0	5	1.03	SS	Yes	Erosion of natural deposits
Total Trihalomethanes (TTHM) (ppb) ⁴	2015	NA	80	24.6	11.6 – 41.7	Yes	By-product of drinking water chlorination
Haloacetic Acids (HAA5) (ppb) ⁴	2015	NA	60	17.4	12.5 – 22.6	Yes	By-product of drinking water chlorination

⁴ MCL (maximum contaminant level) applies and is based on a Locational Running Annual Average (LRAA) calculated quarterly. Under the Disinfection Byproducts Rule 2 (DBPR2) sample sets are collected each quarter and the levels detected at each location are averaged for each location individually on a running annual basis. Compliance is based on the resulting running annual average at each individual location. The Result represents the highest LRAA for all locations during the year. The Range represents the results at individual sample results for all locations from all four quarters.



Tap Water Samples: Lead and Copper Results

Substance (units)	Year Sampled	Action Level	MCLG	Number of Samples Taken	90th Percentile	Number of Samples Above Action Level	Compliance Achieved	Typical Source
Lead (ppb)	2013	15	0	20	3	1	Yes	Corrosion of household plumbing systems; Erosion of natural deposits
Copper (ppm)	2013	1.3	1.3	20	0.16	0	Yes	Corrosion of household plumbing systems; Erosion of natural deposits; Leaching from wood preservatives

There's a lot more to your water bill than just water.

When you turn on the tap, it's easy to see what your water bill buys. What's not as easy to see is what it takes to bring 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. The scientists, engineers, and maintenance crews working around the clock to make sure that water is always there when you need it. Your water payments are helping to build a better tomorrow by supporting needed improvements that will keep water flowing for all of us—today and well into the future. All for about a penny a gallon.

AT ABOUT A PENNY PER GALLON WATER IS A GREAT VALUE™ **WE CARE ABOUT WATER. IT'S WHAT WE DO. FIND OUT WHY YOU SHOULD, TOO, at amwater.com.**

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