

# Annual Drinking Water Quality Report for 2011 Poughkeepsies' Water Treatment Facility (PWS# 1302774) and the City of Poughkeepsie (PWS# 1330291)

The Poughkeepsies' Water Treatment Facility, which is owned and operated by the City and Town of Poughkeepsie, provides drinking water to 75,000 individuals within the City of Poughkeepsie, Town of Poughkeepsie, the Dutchess County Water Authority, and the Village of Wappingers Falls. To comply with State regulations, an annual report is issued describing the quality of your drinking water. The purpose of this report is to raise your understanding of drinking water quality and increase awareness of the need to protect drinking water sources. This report provides an overview of last year's water quality. Included are details about where your water comes from, what it contains, and how it compares to State and Federal standards.

We want you to be informed about your drinking water. If you have any questions about this report or the source of your drinking water, please contact Randy Alstadt, Water Plant Administrator, Poughkeepsies' Water Treatment Facility at 451-4173 x2003 or Lee Felshin, Senior Engineer, Dutchess County Department of Health, 387 Main St., Poughkeepsie 12601 at 486-3404. If you have questions concerning the City of Poughkeepsie distribution system please contact Jesse Purcell, Water Distribution Operator at 451-4074. For additional information you may want to visit EPA's drinking water web site ([www.epa.gov/safewater/](http://www.epa.gov/safewater/)) and the New York State Department of Health's web site ([www.health.state.ny.us](http://www.health.state.ny.us)). If you want to learn more, please attend any of our regularly scheduled Joint Water Board meetings. The meetings are held the first Tuesday of every month at the Water Treatment Facility.

We are proud to report that all tests performed on the Plant Effluent (the water which leaves the plant for consumption) verified your tap water meets all State drinking water health standards and no Maximum Contaminate Level (MCL) violation occurred. The tables in this report contain various water quality parameters and the concentration of contaminants detected along with the possible source. A copy of this report and the complete list and results of organic and inorganic contaminants tested throughout the 2011 year can be found on our web site at [www.pokwater.com](http://www.pokwater.com) or obtained by contacting Water Plant Administrator Randy Alstadt at (845) 451-4173 x2003. We are pleased to present to you the 2011 Annual Water Quality Report.

## Where does our water come from?

In general, 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 can pick up substances resulting from the presence of animals or from human activities. Contaminants that may be present in source water include: microbial contaminants; inorganic contaminants; pesticides and herbicides; organic chemical contaminants; and radioactive contaminants. In order to ensure that tap water is safe to drink, the State and the EPA prescribe regulations which limit the amount of certain contaminants in water provided by public water systems and require monitoring for the contaminants. The State Health Department's and the FDA's regulations establish limits for contaminants in bottled water which must provide the same protection for public health. More information about contaminants and potential health effects can be obtained by calling the EPA's Safe Drinking Water Hotline (800-426-4791) or the Dutchess County Department of Health at 486-3404.

Our water source is the Hudson River, which originates from the north in the Adirondacks at Lake Tear of the Clouds, located on the southwest shoulder of Mount Marcy; New York State's highest peak. The Hudson River Water shed is very expansive, covering nearly 12,500 square miles, of which the majority is within New York State; however small portions are located in Vermont, Massachusetts, Connecticut and New Jersey. Raw water is taken from the Hudson River adjacent to our treatment plant, approximately 1,000 feet from shore at a depth of 48 feet below the mean river elevation. Water quality tests have shown the river to be of very high quality. During 2011, our system did not experience any restriction of our water source.

## Facts and Figures

The Poughkeepsies' Water Treatment Facility was constructed in 1962 and is currently rated at a maximum production capacity of 19.3 million gallons per day (MGD). The plant is located along the Hudson River within the Marist College Campus on Route 9.

In 2011, the treatment facility produced 3,648,773,000 gallons of potable water, approximately 10.00 MGD. Our 2011 maximum daily production was 15.76 MGD while our minimum day was 6.01 MGD. Total billed water to the

City was 1,981,961,690 gallons while gallons billed to the Town of Poughkeepsie was 1,666,811,410. The City total includes 589,608,382 gallons that the City sold to Third Party Users. In 2011 City resident water customers were charged \$2.42 per 100 ft<sup>3</sup> (748 gallons). This equates to 3 gallons of water for less than one penny!

The City Distribution System reports unaccounted for water losses as 10.2 percent of total production. Please note that this figure does not include fire fighting, meter age error, water used for street and sewer cleaning.

## **Water Treatment**

The Poughkeepsies' Water Treatment Facility utilizes conventional, state of the art, filtration process to treat the water supply. This process includes chemical application of polyaluminum chloride to stabilize the small particles in the raw water supply. Once stabilized the particles are combined with an organic polymer and previously settled solids then slowly mixed to form larger particles that are then removed through settling. Following the settling process the water is aerated to improve taste then filtered through a coal and sand media that polishes the final product. Disinfection, the process used to kill disease-producing organisms, is accomplished through application of ultraviolet light followed by a carefully monitored chlorination process.

Post treatment includes the addition of phosphoric acid and sodium hydroxide. Phosphoric acid is added at 2.0 mg/L to reduce corrosion of customer's lead piping and fixtures. Sodium hydroxide is added when necessary to increase the treated water to a pH of 7.7 in effort to minimize corrosion of pipes within the distribution system and customers plumbing.

## **Are There Contaminants in our Drinking Water?**

To insure maximum water quality for our customers, the Poughkeepsies' Water Treatment Facility staff monitors source, treated and distribution water daily. In addition to continuous plant effluent monitoring for turbidity, chlorine residuals, and pH, approximately 50,350 water quality tests were conducted by the water plant staff in 2011. These tests include the following: total coliform (847 samples), turbidity (11,090 samples), pH (6,424 samples), alkalinity (213), hardness (67), and orthophosphate (848 samples) to name a few. Additional analyses performed on raw water, plant effluent, and/or distribution system samples included inorganic compounds (metals), nitrate, nitrite, lead and copper, volatile organic compounds, total trihalomethanes, haloacetic acids, and synthetic organic compounds. Results of regulated contaminants found in our treated water supply, within the City distribution system and at City customer taps are presented in the enclosed Table.

It should be noted that all drinking water, including bottled drinking water, may be reasonably expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that water poses a health risk.

## **Salt Front**

Our water is taken from the Hudson River Estuary, which is subject to increased chloride and sodium levels during low rainfall periods. In 2011, the facility did not experience a salt front episode (defined by USGS as chloride levels exceeding 100 mg/L). There is not a state or federal requirement to monitor sodium on regular basis; rather the use of the water's conductivity and chloride concentration was used as an indicator of sodium level increase. If specific triggers were met, sodium analysis would take place. Last year the average Plant Effluent chloride concentration was 34.7 mg/L (range 22.4-45.9) which did not trigger additional sodium monitoring.

During normal water years the sodium level varies from 15 – 25 mg/L with higher levels occurring during periods of low rainfall. **Customers that are on a salt restricted diet should consult with their physician concerning salt in their drinking water.** Information concerning sodium levels in your water can be obtained at any time by contacting the Water Plant Administrator, Randy Alstadt at 451-4173 x 2003.

## **Hardness**

The water obtained from the Hudson River is considered moderately hard. The average hardness of is 77.81 mg/L or 5 grains.

**SUMMARY OF REGULATED CONTAMINANTS DETECTED IN  
POUGHKEEPSIES' WATER TREATMENT FACILITY'S PLANT EFFLUENT (PWS # 1302774) &  
CITY OF POUGHKEEPSIE'S DISTRIBUTION SYSTEM (PWS # 1330291)**

Poughkeepsies' Water Treatment Facility  
PWS # 1302774  
3431 North Road  
Poughkeepsie, NY 12601  
Licensed Operator: Randy J. Alstadt

City of Poughkeepsie's Distribution System  
PWS# 1330291  
PO Box # 300  
Poughkeepsie, NY 12602  
Licensed Operator: Jesse Purcell

**Microbiological Contaminants**

CONTAMINANT	NYSDOH MCL	USEPA MCLG	VIOLATION Yes/No	# OF SAMPLES	RANGE	AVERAGE	SOURCE IN DRINKING WATER
<b><u>TOTAL COLIFORM BACTERIA</u></b>							
PLANT EFFLUENT	5% <sup>1</sup>	0%	NO	185	All samples analyzed were negative for Coliform Bacteria		
CITY of POUGHKEEPSIE DISTRIBUTION SYSTEM	5% <sup>1</sup>	0%	NO	548	Only 3 samples tested positive for Total Coliform bacteria. Subsequent sampling of the positive sites resulted in samples with no Total Coliform bacteria present.		Naturally Present in the Environment

**Inorganic Contaminants**

**BARIUM**

PLANT EFFLUENT	2 mg/L	2 mg/L	NO	1	0.019 mg/L	n/a	Erosion of natural deposits; discharge of drilling wastes; discharge from metal refineries
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**ZINC**

PLANT EFFLUENT	5 mg/L	5 mg/L	NO	1	0.0074 mg/L	n/a	Erosion of natural deposits; discharged industrial waste
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**MANGANESE**

PLANT EFFLUENT	0.3 mg/L	0.05 mg/L	NO	1	0.0028 mg/L	n/a	Naturally occurring; erosion of soil
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**SODIUM**

PLANT EFFLUENT	n/a	n/a	n/a	2	14.4 - 20.7 mg/L	17.6 mg/L	Naturally occurring; run off
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**COPPER**

CITY of POUGHKEEPSIE DISTRIBUTION SYSTEM	90 <sup>th</sup> Percentile Action Limit = 1.3 mg/L	0	NO	30	<0.005 - 0.222 mg/L	0.087 mg/L <sup>5</sup>	Erosion of natural materials; corrosion of household plumbing
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**LEAD**

CITY of POUGHKEEPSIE DISTRIBUTION SYSTEM	90 <sup>th</sup> Percentile Action Limit = 0.015 mg/L <sup>4</sup>	0	No	30	<0.001 - 0.009 mg/L	0.003 mg/L <sup>5</sup>	Erosion of natural materials; corrosion of household plumbing
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**Miscellaneous Water Quality Parameters**

<b>CONTAMINANT</b>	<b>NYSDOH MCL</b>	<b>USEPA MCLG</b>	<b>VIOLATION YES/NO</b>	<b># OF SAMPLES</b>	<b>RANGE</b>	<b>AVERAGE</b>	<b>SOURCE IN DRINKING WATER</b>
<b><u>TURBIDITY</u></b>							
PLANT EFFLUENT	95% OF SAMPLES < 0.3NTU <sup>2</sup>	95% OF SAMPLES < 0.3NTU <sup>2</sup>	NO	Continuous	0.03 - 0.10 NTU	0.04 NTU	Soil runoff; flushing hydrants
CITY of POUGHKEEPSIE DISTRIBUTION SYSTEM	Monthly Average >/= 5.0 NTU <sup>3</sup>	n/a	NO	598	0.04 - 7.03 NTU	0.18 NTU	
<b><u>CHLORINE</u></b>							
PLANT EFFLUENT	4 mg/L	n/a	NO	Continuous Monitoring	1.35 - 3.45 mg/L	1.09 mg/L	Disinfectant Additive
CITY of POUGHKEEPSIE DISTRIBUTION SYSTEM	4 mg/L	n/a	NO	967	0.13 - 4.0 mg/L	1.31 mg/L	
<b><u>HARDNESS</u></b>							
Hudson River (Raw)	n/a	n/a	NO	63	57 - 103.7 mg/L	77.81 mg/L	Primarily from calcium & magnesium in geological formations
<b><u>NITRATE as N</u></b>							
PLANT EFFLUENT	10 mg/L	10 mg/L	NO	1	0.169 mg/L	n/a	Runoff from fertilizer; Leaching from septic tanks; Sewage; Erosion of natural materials
<b><u>NITRITE as N</u></b>							
PLANT EFFLUENT	1 mg/L	1 mg/L	NO	1	<0.0100 mg/L	n/a	Runoff from fertilizer; Leaching from septic tanks; Sewage; Erosion of natural materials
<b><u>SULFATE</u></b>							
PLANT EFFLUENT	250 mg/L	250 mg/L	NO	1	11.6 mg/L	n/a	Erosion of natural deposits
<b>Organic Contaminants<sup>6</sup></b>							
<b><u>TOLUENE</u></b>							
PLANT EFFLUENT	5 µg/L	5 µg/L	NO	7	<0.5 - 6.26 µg/L	0.094 µg/L	Discharge from petroleum factories
<b><u>ACETONE</u></b>							
PLANT EFFLUENT	50 µg/L	50 µg/L	NO	2	<2.6 - 9.61 µg/L	4.81 µg/L	Photoreaction of dissolved organic matter; discharge from manufacturing plants; leaching from landfills
<b><u>METOLACHLOR</u></b>							
PLANT EFFLUENT	0.005 mg/L	0.005 mg/L	NO	1	0.000043 mg/L	n/a	Herbicide carried by runoff

CONTAMINANT	NYSDOH MCL	USEPA MCLG	VIOLATION YES/NO	# OF SAMPLES	RANGE	AVERAGE	SOURCE IN DRINKING WATER
<b>HALOACETIC ACIDS</b> (includes mono, di, & trichloroacetic acid; mono & dibromoacetic acid)							
CITY of POUGHKEEPSIE DISTRIBUTION SYSTEM	60	n/a	NO	24	9.55 - 43.1 µg/L	25.91 µg/L	Naturally occurring
<b>TOTAL TRIHALOMETHANES</b> (THM includes chloroform, bromodichloromethane, dibromochloromethane & bromoform)							
PLANT EFFLUENT	80	n/a	NO	2	14.6 - 40.9 µg/L	27.74 µg/L	Naturally occurring
CITY of POUGHKEEPSIE DISTRIBUTION SYSTEM	80	n/a	NO	24	19.6 - 98.1 µg/L	64.03 µg/L	

1. A violation occurs when more than 5% of the total number of samples collected are positive for Total Coliform.
2. Turbidity is a measure of the cloudiness of the water. It is used as an indicator for overall water treatment. State and Federal regulations require that turbidity must always be less than 1.0 NTU leaving the treatment plant.
3. A violation occurs when the monthly average of the results of all distribution samples collected in any calendar month exceeds 5.0 NTU round off to the nearest whole number.
4. A violation occurs when the 90 percentile calculated on all samples collected for each sampling event exceeds the Action Limit of 0.015 mg/L for lead and 1.3 mg/L for copper.
5. This value is the 90% value, not the average.
6. Annually, the source and plant effluent is tested for over 120 compounds. Only compounds detected are listed in this report. For a complete list of Synthetic and Volatile Organic Compounds tested for, please visit our website at [www.pokwater.com](http://www.pokwater.com).

#### Table Definitions

**NYSDOH:** New York State Department of Health

**USEPA:** United States Environmental Protection Agency

**MCL (Maximum Contaminate Level):** The highest level of a contaminant that is allowed in the drinking water.

**MCLG (Maximum Contaminate Level Goal):** The level of a contaminant in drinking water below which there is no known or expected risk to health. MCLG's allow for a margin of safety.

**NTU (Nephelometric Turbidity Unit):** A measure of the clarity of the water. Turbidity in excess of 5.0 NTU is just noticeable to the average person.

**mg/L (milligrams per liter):** Corresponds to one liquid part in one million parts of another liquid (parts per million)

**µg/L (micrograms per liter):** Corresponds to one liquid part in one billion parts of another liquid (parts per billion)

## Lead in Your Drinking Water

The facility adds phosphoric acid at 2.0 mg/L to the treated water in order to protect lead plumbing in customer's homes. This program has resulted in reducing lead levels significantly in most homes. With this years testing, the City of Poughkeepsie has fulfilled and passed the lead and copper testing requirements and therefore does not have to test again until 2014.

Lead present at elevated levels can cause serious health problems, especially for pregnant women, infants, and young children. It is possible that lead levels at your home may be higher than at other homes in the community as a result of materials used in your home's plumbing. City of Poughkeepsie Distribution System is responsible for providing high quality drinking water, but cannot control the variety of materials used in plumbing components. Potential exposure to lead in drinking water can be minimized by running the water from the tap for 30 seconds to 2 minutes before using it for drinking or cooking, especially if it has been unused for several hours. 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 (1-800-426-4791) or at [www.epa.gov/safewater/lead](http://www.epa.gov/safewater/lead).

## Do I Need to Take Special Precautions?

Although our drinking water met or exceeded state and federal regulations, some people may be more vulnerable to disease causing microorganisms or pathogens 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 from their health care provider about their drinking water. EPA/CDC guidelines on appropriate means to lessen the risk of infection by Cryptosporidium, Giardia and other microbial pathogens are available from the Safe Drinking Water Hotline (800-426-4791).

## Why Save Water and How to Avoid Wasting It?

Although our water source has an adequate amount of water to meet present and future demands, there are a number of reasons why it is important to conserve water:

- ◆ Saving water reduces the cost of energy required to pump water and the need to construct costly new wells, pumping systems and water towers; and
- ◆ Saving water lessens the strain on the water system during a dry spell or drought, helping to avoid severe water use restrictions so that essential fire fighting needs are met.

You can play a role in conserving water by becoming conscious of the amount of water your household is using, and by looking for ways to use less whenever you can. It is not hard to conserve water. Conservation tips include:

- ◆ Automatic dishwashers use 15 gallons for every cycle, regardless of how many dishes are loaded. So get a run for your money and load it to capacity.
- ◆ Turn off the tap when brushing your teeth.
- ◆ Check every faucet in your home for leaks. Just a slow drip can waste 15 to 20 gallons a day. Fix it up and you can save almost 6,000 gallons per year.
- ◆ Check your toilets for leaks by putting a few drops of food coloring in the tank, watch for a few minutes to see if the color shows up in the bowl. It is not uncommon to lose up to 100 gallons a day from one of these otherwise invisible toilet leaks. Fix it and you save more than 30,000 gallons a year.
- ◆ Use your water meter to detect hidden leaks. Simply turn off all taps and water using appliances, then check the meter after 15 minutes, if it moved, you have a leak.

*Thank you for allowing us to continue to provide your family with quality drinking water this year. We ask that all our customers help us protect our water sources, which are the heart of our community and our way of life.*