

***Annual Drinking Water Quality Report for 2009***  
***Queensbury Water Department***  
***823 Corinth Rd***  
***Queensbury, NY 12804***  
***(Public Water Supply ID# 5600114)***

**INTRODUCTION**

To comply with State and Federal regulations, the Queensbury Water Department will be annually issuing a report describing the quality of your drinking water. The purpose of this report is to raise your understanding of drinking water and awareness of the need to protect our 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 standards.

If you have any questions about this report or concerning your drinking water, please contact **Christopher Harrington, P.E., Engineer, telephone number 793-8866 ext 2019**. We want you to be informed about your drinking water. If you want to learn more, please attend any of our regularly scheduled Town board meetings. The meetings are held on the first and third Mondays of each month (exceptions, because of Holidays will be January, February and September of 2010) at 7:00 PM at the Queensbury Activity Center on Bay Rd. (next to the Town Hall)

**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 that limit the amount of certain contaminants in water provided by public water systems. 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.

The Queensbury Water District source is the Hudson River, a surface water supply that is located at the Sherman Island Dam. During 2009, our system did not experience any restriction of our water source.

**SOURCE WATER ASSESSMENT**

The NYS Department of Health has evaluated the Hudson River's susceptibility to contamination under the Source Water Assessment Program (SWAP), and their findings are summarized in the paragraph below. It is important to stress that these assessments were created using available information and only estimate the potential for source water contamination. Elevated susceptibility ratings do not mean that source water contamination has or will occur for this water supply. The Queensbury Water District provides treatment and regular monitoring to ensure the water delivered to consumers meets all applicable standards.

Based on documented polychlorinated biphenyl (PCBs) contamination of sediments upstream of the intake, the Queensbury Water District is tested quarterly for PCBs. During 2009, PCBs were not detected in source or finished drinking water. It should also be noted that rivers in general are highly sensitive to microbial contaminants.

**HOW IS OUR WATER TREATED?**

Water is pumped from the river into a complete treatment facility consisting of the following: chemical pre-treatment, flocculation, coagulation, sedimentation, pre-chlorination, filtration, post-chlorination, and corrosion control. The treatment plant is manned 24 hours a day, 365 days per year under the supervision of two IA operators.

I. Typical or average raw and treated water information:

	<u>Raw Water</u>	<u>Finished Water (Filtered-Entry Point)</u>
pH	6.6 – 7.2	8.29 (7.6 - 8.8)
Alkalinity	8.7 – 20.0 mg/l	22.55 mg/l
Hardness		19.57 mg/l
Turbidity	0.34 – 2.12 NTU	0.079 NTU (.04-.44 NTU) 0.059 – 1.36 NTU in distribution system The average was .19 NTU. The MCL is 5 NTU/month (average)
Color	20 - 59 units	1 unit (0-8 units)
Chlorine, Free	0 mg/l	.80 mg/l (.65 – .95 mg/l) ND (remote areas) – .70 mg/l in the distribution system The average was .29 mg/l in the distribution system. The MRDL and MRDLG is 4.0 mg/l.

Note: Raw Water Range: Turbidity 0.34– 2.12 NTU’s (0.88 NTU typical)  
Color 20 – 59 units (30 typical)

*Definitions of terminology and abbreviations are found on p. 6.*

II. Chemicals used in the treatment process:

<u>Chemical</u>	<u>Typical Feed Rate</u>	<u>Maximum Feed Rate</u>
Aluminum Sulfate	27.0 mg/l	59.7 mg/l
Sodium Hypochlorite	1.5 mg/l	2.8 mg/l
Sodium Carbonate	17.9 mg/l	41.7 mg/l

**FACTS AND FIGURES**

There are 8,150 connections served by the water treatment plant. The Queensbury Consolidated Water District serves a population of approximately 20,000 +. The system also serves the Kingsbury Water District, Hudson Falls, Moreau and the Warren Washington Industrial Park.

The total amount of water produced in the previous four billing cycles was 1,878,698,000 gallons. The daily average of water treated and pumped into the distribution system is 5,147,000 gallons. Our highest single day was 9,708,000 gallons. The amount of water delivered to customers 1,591,260,000 gallons. This leaves a non-billable total of 287,438,000 gallons or 15.3 %. This unaccounted water use was due to fighting fires, leakage, recreation, street sweeping and illegal use.

We have initiated a change from remote readers to a radio read meter system to correct part of the non-billable water problem. The conversion of our entire system should take about two to three years.

In 2010, water customers will be billed quarterly at the rate of \$20.00 for the first 8,000 gal then \$1.52 per 1,000 gallons up to 4,000,000 gallons. The rate then drops to \$0.95 per 1,000 gal. This rate has remained the same since 1996 and covers operating and maintenance expenses. An Ad Valorem tax of \$.884/\$ 1,000 of assessed property is collected through the town’s property tax bill and is directed toward capital improvements. Last year’s rate was \$.948/\$ 1,000.

**ARE THERE CONTAMINANTS IN OUR DRINKING WATER?**

The table presented below depicts which compounds were detected in your drinking water. The State allows us to test for some contaminants less than once per year because the concentrations of these contaminants do not change frequently. Some of our data, though representative, are more than one year old.

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. 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 (New York State Department of Health – Glens Falls District Office) at (518) 793-3893.

As the State regulations require, we routinely test your drinking water for numerous contaminants. These groups of contaminants, followed by the number of contaminants in each group, exist at levels that were *Non Detects* in your drinking water: Volatile Organic Compounds (54) and Synthetic Organic Compounds (44) which include PCB's. Odor was also not detected. Inorganic contaminants that were *Non Detects* are: Arsenic, Antimony, Beryllium, Cadmium, Chromium, Iron, Mercury, Nickel, Selenium, Silver, Thallium and Zinc. Microbiological: No violations for Total Coliform or E. Coli (20 distribution samples per month).

Table of Detected Contaminants							
<i>Radiologicals</i>							
Contaminant	Violation Yes/No	Date of Sample	Level Detected	Unit Measurement	MCLG	Regulatory Limit MCL	Likely Source of Contamination
Gross Alpha	No	11/19/01	2.5	pCi/L	0	15 pCi/L	Erosion of natural deposits.
Gross Beta	No	11/19/01	3.61	pCi/L	0	50 pCi/L	Erosion of natural deposits.
Combined Radium 226 and 228	No	2008	0.468	pCi/L	0	5 pCi/L	Erosion of natural deposits.
Radium 228	No	5/13/08 2/14/08	0.139 0.129	pCi/L	0	5pCi/L	Erosion of natural deposits.
Radium 226	No	2/19/08	0.0334	pCi/L	0	5pCi/L	Erosion of natural deposits.
<i>Combined Filter Effluent Turbidity (5 filters) and Microbiologicals</i>							
Turbidity <sup>1</sup>	No	4/2/09	.44	NTU	N/A	TT=<1 NTU	Soil Runoff
Turbidity <sup>1</sup>	No	April 2009	97.22	%	100%	TT=95% of samples <0.3 NTU	Soil Runoff
Total Coliform Bacteria <sup>2</sup>	No	3/19/09	Present in initial sample; not detected in 4 repeat sample	Present/ Absent	0	2 or more	Naturally present in environment
<i>Inorganic Contaminants</i>							
Barium	No	2/4/09	0.0061	mg/l	2.0 mg/l	2.0 mg/l	Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits
Cyanide	No	2/4/09	.10	mg/l	.20 mg/l	.20 mg/l	Discharge from steel/ metal factories. Discharge from plastic and fertilizer factories.

Contaminant	Violation Yes/No	Date of Sample	Level Detected	Unit Measurement	MCLG	Regulatory Limit MCL	Likely Source of Contamination
Sodium	No	2/4/09 5/6/09 8/6/09 11/4/09	14.0 14.0 16.0 21.0 <sup>3</sup>	mg/l	N/A	N/A	Naturally occurring, road salt, animal waste, sodium carbonate
Copper	No	7/22/08	51 <sup>4</sup> ND – 79	µg/l	1300 µg/l	AL – 1300 µg/l	Corrosion of household plumbing systems; Erosion of natural deposits
Lead	No	7/22/08	1.7 <sup>5</sup> ND – 5.8	µg/l	0	AL-15 µg/l	Corrosion of household plumbing systems; Erosion of natural deposits
Chloride	No	2/4/09	8.2	mg/l	N/A	250 mg/l	Naturally occurring or indicative of road salt contamination
Sulfate	No	2/4/09	16.0	mg/l	N/A	250 mg/l	Naturally occurring, aluminum sulphate
Nitrate	No	2/4/09	0.30	mg/l	10 mg/l	10.0 mg/l as Nitrogen	Erosion of natural deposits, Runoff from fertilizer
Fluoride	No	2/4/09	0.18	mg/l	2.2 mg/l	2.2 mg/l	Erosion of natural deposits; discharge from fertilizer and aluminum factories
Manganese	No	2/4/09	.011	mg/l	N/A	.3 mg/l	Naturally occurring; used in manufacturing
<b>Disinfection Byproducts – Stage 1 Samples</b>							
Total Trihalomethanes	No	Quarterly Samples 2/4/09 5/6/09 8/5/09 11/4/09	32.7 (1st Qtr) <sup>6</sup> 18-43 <sup>7</sup>	µg/l	N/A	80 µg/l	By-products of drinking water chlorination. TTHM's are formed when source water contains large amounts of organic matter.
Total Haloacetic Acids	No	Quarterly Samples 2/4/09 5/6/09 8/5/09 11/4/09	26.5 (4 <sup>th</sup> Qtr) <sup>6</sup> 19 – 35 <sup>7</sup>	µg/l	N/A	60 µg/l	By-products of drinking water chlorination. HAA5's are formed when source water contains large amounts of organic matter.
Total Organic Carbon	No	Monthly	Range <sup>8</sup> 1.40 – 1.90 Average 1.60	mg/l	N/A	TT	Naturally Present in the environment
<b>Disinfection Byproducts – Stage 2 Samples <sup>9</sup></b>							
Total Trihalomethanes	No	8/5/09	Range 27 - 60	µg/l	N/A	80 µg/l	By-products of drinking water chlorination. TTHM's are formed when source water contains large amounts of organic matter.
Total Haloacetic Acids	No	8/5/09	Range 5.4 - 28	µg/l	N/A	60 µg/l	By-products of drinking water chlorination. HAA5's are formed when source water contains large amounts of organic matter.

- 1 - Turbidity is a measure of the cloudiness of the water. We measure it because it is a good indicator of the effectiveness of our filtration system. Our highest single entry point turbidity measurement for the year occurred on 4/2/09 (.44 NTU). State regulations require that entry point turbidity must always be below 1.0 NTU. The regulations also require that 95% of the entry point turbidity samples collected have measurements below 0.3 NTU. All levels recorded were well below the acceptable range allowed and did not constitute a treatment violation.
- 2 - On 3/19/09, a sample from our distribution system tested positive for Total Coliform. The Queensbury Water Department immediately resampled according to the Total Coliform Rule and all 4 samples tested negative for Total Coliform. E. coli was not present.
- 3 - Water containing more than 20 mg/l sodium should not be used for drinking by people on severely restricted diets. This represents 4.73 mg of sodium in one 8 fluid oz. glass of water.
- 4 - The level presented represents the 90<sup>th</sup> percentile of the 30 sites tested. A percentile is a value on a scale of 100 that indicates the percent of a distribution that is equal to or below it. The 90<sup>th</sup> percentile is equal to or greater than 90% of the copper values detected at your water system. In this case, 30 samples were collected at your water system and the 90<sup>th</sup> percentile value was 51 µg/l. Of the 30 samples taken, 10 results were *NON DETECTS*. The action level for copper was not exceeded at any of the sites tested with the highest level being 79 µg/l. ND (*NON DETECTS*) is any sample less than 20 µg/l.
- 5 - The level presented represents the 90<sup>th</sup> percentile of the 30 samples collected. The 90<sup>th</sup> percentile is equal to or greater than 90% of the lead values detected at your water system. In this case, 30 samples were collected at your water system and the 90<sup>th</sup> percentile value was 1.7 µg/l. Of the 30 samples taken 21 results were *NON DETECTS*. The action level for lead was not exceeded at any of the sites tested with the highest level being 5.8 µg/l. ND (*NON DETECTS*) is any sample less than 1 µg/L.
- 6 - The level presented represents the running annual quarterly average from the samples collected.
- 7 - The level presented represents the range of detects of the four quarterly samples collected in 2009.
- 8 - Total Organic Carbon is not regulated, but its calculated removal and compliance ratio must equal or exceed performance requirements established by the USEPA. All levels recorded were well below the acceptable range allowed and did not constitute a treatment technique violation.
- 9 - During the 3<sup>rd</sup> Quarter of 2009, our distribution system was evaluated for the presence of disinfection byproducts. The purpose of this evaluation is to determine future sample locations for routine disinfection byproduct sampling. The study consisted of collecting 8 samples during the month most likely to produce the highest levels.

#### **WHAT DOES THIS INFORMATION MEAN?**

As you can see by the table, our system had no MCL violations. We have learned through our testing that some contaminants have been detected; however, these contaminants were detected below the level allowed by the state. MCL's are set at very stringent levels. To understand the possible health effects described for many regulated constituents, a person would have to drink 2 liters of water everyday at the MCL level for a lifetime to have a one-in-a-million chance of having the described health effect.

#### **SUMMARY OF DISTRIBUTION SYSTEM SAMPLING POINTS:**

Distribution system samples are collected daily for turbidity, chlorine residual, pH and bacteriological analysis. Over 20 sample locations are regularly monitored throughout the distribution system.

#### **IS OUR WATER SYSTEM MEETING OTHER RULES THAT GOVERN OPERATIONS?**

We are required to monitor your drinking water for specific contaminants on a regular basis. Results of regular monitoring are an indicator of whether or not your drinking water meets health standards. On April 3<sup>rd</sup>, 2009, the Department failed to monitor the effluent turbidity of Filter # 1 for a period exceeding 4 hours and therefore cannot be sure of the quality of your water during that time. We are required to continuously monitor each individual filter's effluent turbidity according to Public Health Law Subpart 5-1.52. It should be noted that there was no lapse in chlorination during that period and that the combined filter effluent turbidity never exceeded 1.0 NTU.

#### **Information on Cryptosporidium**

Cryptosporidium is a microbial pathogen found in surface water and groundwater under the influence of surface water. Although filtration removes Cryptosporidium, the most commonly used filtration methods cannot guarantee 100 percent removal. During 2009, as part of our routine sampling plan, twelve samples of the Hudson River source water were collected and analyzed for Cryptosporidium oocysts. Of these raw untreated source water samples, one was positive for the presence of Cryptosporidium. Therefore, our monitoring indicates that Cryptosporidium may be present in our source water. Current test methods do not allow us to determine if the organisms are dead or if they are capable of causing disease. Ingestion of Cryptosporidium may cause cryptosporidiosis, a gastrointestinal infection. Symptoms of infection include nausea, diarrhea, and abdominal cramps. Most healthy individuals can overcome disease within a few weeks. However, immuno-compromised

people are at greater risk of developing life-threatening illness. We encourage immuno-compromised individuals to consult their health care provider 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.

### **Information on Giardia**

Giardia is a microbial pathogen present in varying concentrations in many surface waters and groundwater under the influence of surface water. Giardia is removed/inactivated through a combination of filtration and disinfection or by disinfection. During 2009, as part of our routine sampling plan, twelve samples of the Hudson River source water were collected and analyzed for Giardia cysts. Of these samples, eight were tested positive for Giardia. Therefore, our monitoring indicates that Giardia may be present in our source water. Current test methods do not allow us to determine if the organisms are dead or if they are capable of causing disease. Ingestion of Giardia may cause giardiasis, an intestinal illness. People exposed to Giardia may experience mild or severe diarrhea, or in some instances no symptoms at all. Fever is rarely present. Occasionally, some individuals will have chronic diarrhea over several weeks or a month, with significant weight loss. Giardiasis can be treated with anti-parasitic medication. Individuals with weakened immune systems should consult with their health care providers about what steps would best reduce their risks of becoming infected with Giardiasis. Individuals who think that they may have been exposed to Giardiasis should contact their health care providers immediately. The Giardia parasite is passed in the feces of an infected person or animal and may contaminate water or food. Person to person transmission may also occur in day care centers or other settings where hand washing practices are poor.

### **Definitions:**

**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.

**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. MRDLG's do not reflect the benefits of the use of disinfectants to control microbial contamination.

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

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

**Non Detects (ND):** Laboratory analysis indicates that the constituent is not present.

**Non-Applicable:** (NA)

**Nephelometric Turbidity Unit (NTU):** A measure of the clarity of water. Turbidity in excess of 5 NTU is just noticeable to the average person.

**Milligrams per liter (mg/l):** one part per million corresponds to one minute in two years or a single penny in \$10,000.

**Micrograms per liter (µg/l):** one part per billion corresponds to one minute in 2,000 years or a single penny in \$10,000,000.

**Picocuries per liter (pCi/L):** A measure of the radioactivity in water.

### **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 system 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 saves energy and some of the costs associated with both of these necessities of life.
- ♦ Saving water reduces the cost of energy required to pump water and the need to construct costly new wells, pumping systems and water towers.
- ♦ 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 up to 10 gallons for every cycle, regardless of how many dishes are loaded.
- ♦ 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 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.

### **SYSTEM IMPROVEMENTS:**

**In 2009: Approximately 1,590 L.F. new Ductile Iron water main was placed on Ryan/Richardson St. This replaced the existing cast iron pipe that dated from the 1930's.**

**Two of our 400 HP Finished Water Pumps were replaced with two 300 HP Finished Water Pumps.**

**In 2010: 13,000 Linear Feet of 8" substandard piping will be replaced in kind with Ductile Iron Pipe. This will be done in the Broadacres, Carlton and Lynnfield areas of the district.**

**As part of the County "Main Street" project, 5200' of 8" cast iron pipe dating from the 1930's will be replaced with 12" Ductile Iron water main. An additional 655' of Ductile Iron water main will be added to improve transmission reliability in the vicinity.**

For additional information about the Queensbury Water Department please visit the Town of Queensbury web site at: [www.queensbury.net](http://www.queensbury.net) , from the menu select "Departments" then choose "Water".