

*Annual Drinking Water Quality Report for 2008*  
*Community Water System Name- Town of Yates Water District #2*  
*8 South Main Street , Box 484, Lyndonville NY 14098*  
*(Public Water Supply ID NY 3600604)*

**March 1, 2009**

## **INTRODUCTION**

To comply with State regulations, the Niagara County Water District (NCWD) 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. Last year, your tap water met all State and Federal drinking water health standards. We are proud to report that our system did not violate a maximum contaminant level or any other water quality standard. In 2008, we conducted tests for over 100 contaminants. Less than a quarter of the tested contaminants were detected. The 90<sup>th</sup> percentile level of lead detected, 9.1µg/L, was below the regulatory limit of 15.0µg/L; however, lead was found at a level higher than the action level (AL) recommended by the State at three (3) of 53 sites tested. 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 Herbert A. Downs, Administrative Director, at (716) 434-8835. Roger W. Wolfe Water Superintendent 585-765-9735. We want you to be informed about your drinking water. If you want to learn more, please attend any of our regularly scheduled board meetings at the NCWD Service Center at 5450 Ernest Road, Lockport New York. The meetings are held on the third Thursday of each month at 4 p.m. Town of Yates Board meetings second Thursday of each month at 7:00 p.m at the Yates Town Hall, 8 South Main Street, Lyndonville NY.

## **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, in some cases, radioactive material, 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. 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.

Our water source is located in the west branch of the Niagara River. The water quality is considered excellent. During 2008, our system did not experience any restriction of our water source. The treatment plant uses pre-chlorination, coagulation, rapid mix, flocculation, sedimentation and filtration processes to ensure the quality of the water. The NCWD also uses chlorination for disinfection. Active carbon is used to improve the "taste" of water at the raw water pump station on Grand Island. The water treatment plant has been approved as a direct filtration plant; however, water is treated using conventional filtration including all of the processes described above. In addition, fluoride and a corrosion inhibitor are added to the potable water prior to distribution.

The New York State Department of Health recently completed a draft Source Water Assessment of the supplies **raw water source** under the States Source Water Assessment Program (SWAP). The purpose of this program is to compile, organize, and evaluate information regarding possible and actual threats to the quality of public water supply (PWS) sources. It is important to note that source water assessment reports estimate the **potential** for untreated drinking water sources to be impacted by contamination. These reports do not address the safety or quality of treated finished potable tap water. The Great Lakes' watershed is exceptionally large and too big for a detailed evaluation in the SWAP. General drinking water concerns for public water supplies which use these sources include:

storm generated turbidity, wastewater, toxic sediments, shipping related spills, and problems associated with exotic species (e.g. zebra mussels - intake clogging and taste and odor problems). The SWAP is based on the analysis of the contaminant inventory compiled for the drainage area deemed most likely to impact drinking water quality at this public water supply raw water intake. This assessment found an elevated susceptibility to contamination for this source of drinking water. The amount of agricultural lands in the assessment area results in elevated potential for protozoa and pesticides contamination. There is also a high density of sanitary wastewater discharges, which results in elevated susceptibility for numerous contaminant categories. Non-sanitary wastewater could also impact source water quality. There is also noteworthy contamination susceptibility associated with other discrete contaminant sources, and these facility types include: Mines and Resources Conservation and Recovery Act (RCRA) facilities. If you have any questions about the State Source Water Assessment Program, please contact Ronald Gwozdek, Principal Public Health Engineer, Niagara County Department of Health at (716) 439-7452.

## FACTS AND FIGURES

The Town of Yates system serves 180 people through 63 service connections. The amount of water delivered to the customers in 2008 was 16,195,000.

## ARE THERE CONTAMINANTS IN OUR DRINKING WATER?

As the State regulations require, we routinely test your drinking water for numerous contaminants. These contaminants include: microbiological contaminants, radioactive contaminants, inorganic compounds, nitrate, nitrite, lead and copper, volatile organic compounds, synthetic organic compounds, trihalomethanes, haloacetic acids, and disinfection by-products. The table presented below depicts only those compounds which 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 Niagara County Health Department at (716) 439-7430.

<b>Table 1: Table of Detected Contaminants</b>							
<b>Contaminant</b>	<b>Violation Yes/No</b>	<b>Date of Sample</b>	<b>Level Detected (Avg. / Max.) (Range)</b>	<b>Unit of Measurement</b>	<b>MCLG</b>	<b>Regulatory Limit</b>	<b>Likely Source of Contamination</b>
<b>Inorganic Contaminants</b>							
Arsenic	No	2/08	0.0007	mg/L	N/A	MCL=0.010	Erosion of natural deposits, waste runoff from glass and electronics production or runoff from orchards
Barium	No	2/08	0.2270	mg/L	2.00	MCL=2.00	Discharge of drilling wastes and from metal refineries; Erosion of natural deposits.
Copper <sup>1</sup>	No	6/08-9/08	0.1 (0.0018-	mg/L	1.3	AL=1.3	Corrosion of galvanized pipes; Erosion of

			0.15)				natural deposits.
Fluoride	No	2/08	0.64	mg/L	N/A	MCL=2.2	Erosion of natural deposits; Water additive that promotes strong teeth
Lead <sup>[1]</sup> (in distribution system)	No	6/08 - 9/08	9.1 (ND - 93)	µg/L	0	AL=15	Corrosion of household plumbing systems; Erosion of natural deposits.
Sodium	No	2/08	16.6	mg/L	N/A	AL=20	Corrosion of galvanized pipes; Erosion of natural deposits.
Nitrate	No	10/08	0.17	mg/L	10.0	MCL=10.0	Corrosion of galvanized pipes; Erosion of natural deposits.
Entry Point <sup>[2]</sup> Turbidity	No	1/08 - 12/08	0.026 (0.02 - 0.05)	NTU	N/A		Soil runoff
Entry Point <sup>2</sup> Turbidity	No	1/08 - 12/08	100% of samples less than 0.3 NTU	NTU	N/A	TT=95% of samples < 0.3 NTU	Soil runoff
<b>Radioactive Contaminants</b>							
Gross Alpha Particles	No	2/08	0.07	pCi/L	N/A	MCL=15	Erosion of natural deposits of certain radioactive minerals
Radium 226 and 228 combined	No	2/08	1.31	pCi/L	N/A	MCL=5	Decay of natural and man-made deposits of certain radioactive minerals.
Uranium	No	2/08	<0.51	µg/L	N/A	MCL=30	Erosion of natural deposits

**Disinfection Byproducts**

Total Trihalomethanes	No	1/08 - 10/08	29.3 <sup>[3]</sup> (13.6 - 51.9)	µg/l	N/A	MCL=80	By-product of drinking water chlorination
Total Haloacetic Acids	No	1/08 - 10/08	19.5 <sup>3</sup> (12.5 - 33.3)	µg/l	N/A	MCL=60	By-product of drinking water chlorination

**Table 2: Substances Related to Long Term 2 Enhanced Surface Water Treatment Rule**

Parameter	Period of	Average Level	Unit of	Regulatory	MCLG
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	Sample	Detected	Measurement	Limit	
Alkalinity*	1/08 – 12/08	94.33	mg/L	NR	N/A
Raw Water Total Organic Carbon*	1/08 – 12/08	2.43	mg/L	NR	N/A
Filtered Combined UV 254*	1/08 – 12/08	0.019	1/cm	NR	N/A
Raw Water SUVA*	1/08 – 12/08	1.22	L/mg-m	NR	N/A
Filtered SUVA*	1/08 – 12/08	0.89	L/mg-m	NR	N/A
Cryptosporidium**	3/06 – 2/08	ND	oocysts/L	TT=99% removal	zero
Giardia**	3/06 – 2/08	ND	cysts/L	TT=99% removal	zero

\* The substances presented above are currently not regulated (NR) not due they have a Maximum Contaminant Level Goal (MCLG). The parameters were monitored and average levels presented to provide an indication of general water quality.

\*\* The **Long Term 2 Enhanced Surface Water Treatment Rule (LT2 ESWTR)** was promulgated by USEPA on January 4, 2006. The purpose of the rule is to reduce disease incidence associated with Cryptosporidium and other pathogenic microorganisms in drinking water. Systems monitor their source water to determine treatment requirements. This monitoring involves **two years of monthly source water sampling for Cryptosporidium, E. coli, and turbidity** to assess the relative risk of the source water and determine additional treatment needs, if any. Source water monitoring is done prior to chemical treatment and any filter backwash recycle return. Filtered water systems will be classified in one of four treatment categories (bins) based on their monitoring results. Most systems are expected to be classified in the lowest bin (one) and will face no additional requirements.

NCWD initiated monitoring in March of 2006, completed monitoring in February of 2008 and submitted all data as required by this federal regulation. NCWD conducted 24 samples of the source water over the 2-year monitoring period. No Cryptosporidium or Giardia was detected. The determination of bin classification is the next step in this regulatory process. The NCWD must report to the USEPA and this department their bin classification by September 2010. After completing monitoring and determining their treatment bin, systems generally have three years to comply with any additional treatment requirements if required. Systems must conduct a second round of monitoring six years after completing the initial round to determine if source water conditions have changed significantly.

## TOWN OF SOMERSET

Town of Somerset has not exceeded MCL for total coliform during 2008 reporting period.

Contaminant	Violation Yes/No	Date of Sample	Level Detected (Maximum)	Unit of Measurement	MCLG	Regulatory Limit (MCL, TT or AL)	Likely Source of Contamination
<b>Microbiological Contaminants<sup>1</sup></b>							
Turbidity	No	-	0.41 NTU	NTU	N/A	TT= <5NTU	Soil Runoff
Turbidity	No	1/08 – 12/08	100%	NTU	N/A	TT=95% of samples < 0.3	

Total Coliform	No	1/08 – 12/08	0 positive samples	N/A	0	NTU MCL= 2 or more positive samples	Naturally present in the environment
<b>Disinfection Byproducts<sup>2</sup></b>							
Total Trihalomethanes	No	5/08 – 12/08	49.9 (18.4 – 63.3)	µg/l	N/A	MCL=80	By-product of drinking water chlorination
Total Haloacetic Acids	No	5/08 – 12/08	22.8 (19.3 – 25.2)	µg/l	N/A	MCL=60	By-product of drinking water chlorination

**Notes:**

**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. MRDLGs 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 which 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.

**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):** Corresponds to one part liquid in one million parts of liquid (parts per million - ppm).

**Micrograms per liter (µg/L):** Corresponds to one part liquid in one billion parts of liquid (parts per billion - ppb).

**Nanograms per liter (ng/L):** Corresponds to one part liquid to one trillion parts of liquid (parts per trillion - ppt).

**Picograms per liter (pg/L):** Corresponds to one part per liquid to one quadrillion parts of liquid (parts per quadrillion - ppq).

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

**Million Fibers per Liter (MFL):** A measure of the presence of asbestos fibers which are longer than 10 µm.

**Filter Combined UV 254:** A measure of the amount of ultraviolet light absorbed by molecules in a solution measure at 253.7 nm reported in liters per milligram meter.

**Not Regulated (NR):** Corresponds to parameters that are not currently regulated as part of the Long Term 2 Enhanced Surface Water Treatment Rule but were included as indicators of general water quality.

**WHAT DOES THIS INFORMATION MEAN?**

As you can see by the tables, our system had no violations. We are proud that your drinking water meets or exceeds all federal or state requirements. We have learned through our testing that some contaminants have been detected; however, most of these contaminants were detected below the level allowed by New York State. It should be noted that the action level for lead was exceeded in three (3) of the 53 samples collected. Therefore, we are required to present the following information on lead in drinking water:

If present, elevated levels of lead 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. The Niagara County Water District 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 (1-800-426-4791) or at <http://www.epa.gov/safewater/lead>.

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

During 2008, our system was in compliance with applicable State drinking water operating, monitoring and reporting requirements.

### **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 2006-2008, as part of LT2 ESWTR monitoring, 24 monthly samples of the raw water at its entry point into the distribution system were collected and analyzed for Cryptosporidium oocysts. Of these samples, none were positive for Cryptosporidium oocysts. 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 2006-2008, as part of LT2 ESWTR monitoring, 24 monthly samples of the raw water at its entry point into the distribution system were collected and analyzed for Giardia cysts. Of these samples, none were positive for Giardia cysts. 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.

### **DO I NEED TO TAKE SPECIAL PRECAUTIONS?**

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).

### **INFORMATION ON FLUORIDE ADDITION**

Our system is one of the many drinking water systems in New York State that provides drinking water with a controlled, low level of fluoride for consumer dental health protection. According to the United States Centers for Disease Control, fluoride is very effective in preventing cavities when present in drinking water at an optimal range from 0.8 to 1.2 mg/l (parts per million). To ensure that the fluoride supplement in your water provides optimal dental protection, the State Department of Health requires that we monitor fluoride levels on a daily basis. During 2008, monitoring showed fluoride levels in your water were in the optimal range 99% of the time. None of the monitoring results showed fluoride at levels that approach the 2.2 mg/l MCL for fluoride.

### **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; 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.

## SYSTEM IMPROVEMENTS

In 2008, the Niagara County Water District completed improvements to their filter controls and filter valve actuators at the water treatment plant. The NCWD commenced construction on improvements to the Robinson Road Water Storage Tank, installation of a second crossing of the Erie Canal with a 36-inch waterline and an upgrade of the traveling screen system at the raw pump station.

## CLOSING

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. Please call our office if you have questions.

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<sup>[1]</sup> During 2008 the Niagara County Water District collected and analyzed 53 samples for lead and copper. The level presented represents the 90th percentile of the 53 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 90th percentile is equal to or greater than 90% of the lead or copper values detected at your water system. The analysis showed concentrations below action levels for all 53 copper samples. Three (3) of the 53 lead samples exceeded the action level of 15 µg/L. The range of lead levels detected is presented below the 90th percentile value.

<sup>[2]</sup> Turbidity is a measure of the cloudiness of the water. We test it because it is a good indicator of the effectiveness of our filtration system. NCWD's highest single turbidity measurement for the year was 0.05 NTU. State regulations require that turbidity must always be below 5 NTU in the distribution system. The regulations require that 95% of the turbidity samples collected have measurements below 0.3 NTU. All samples collected in 2008 were below the treatment technique level.

<sup>[3]</sup> Results for Total Trihalomethanes (TTHM's) and Total Haloacetic Acids (HAA5's) are reported as the running quarterly annual average. The range of detection is shown below the average.