

**ANNUAL DRINKING WATER QUALITY REPORT FOR 2002**  
**CITY OF AUBURN**  
**160 SWIFT STREET**  
**AUBURN, NY 13021**  
**WATER SUPPLY ID# 05 01 710**

**INTRODUCTION**

To comply with State and Federal regulations, the City of Auburn, 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, we conducted tests for over 80 contaminants. We detected several contaminants and found none of those contaminants at a level higher than the State allows. 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 Mr. Francis J. DeOrio, Director of Municipal Utilities, 315-255-4180 or Mr. Anthony L. DeCaro, Chief Water Plant Operator, 315-253-8754. We want you to be informed about your drinking water. If you want to learn more, please attend any of our regularly scheduled City Council Work Sessions. A schedule of the Council Work Sessions may be obtained from the Mayors Office located in City Hall, 315-255-4104.

**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 Environmental Protection Agency (EPA) prescribe regulations, which limit the amount of certain contaminants in water provided by public water systems. The New York State Department of Health's (NYSDOH) and the United States Food and Drug Administration's (FDA) regulations establish limits for contaminants in bottled water, which must provide the same protection for public health.

Our water source is the Owasco Lake. The City draws its' water through a single 30-inch intake line that extends over 1,000 feet into the lake. The intake structure is a submerged concrete crib. The City's allowable withdrawal from Owasco Lake is 15 million gallons per day (mgd), as permitted by Water Resource Application #422 dated 10/3/63. The dependable yield is determined to be 48 mgd in a study conducted in 1995 by R & D Engineering, P.C., and Buffalo, New York.

Owasco Lake is classified as a Class-AA Special water body designated by the New York State Department of Environmental Conservation (NYSDEC) as listed in 6 NYCRR Part 702. It is considered an excellent source of potable water.

The transmission main from the Upper Pumping Station to the Filtration Plant on Swift Street consists of approximately 8,800 feet of 24-inch cast-iron pipe. The first 400 feet of transmission main is a new 30-inch diameter pipe installed as part of the re-construction of the Owasco Lake Seawall Project in 2001. The pipe size is increased to 36-inch where it crosses over the Owasco Lake Outlet, and is reduced to 30 inches before entering the rapid-sand filtration plant.

The City presently operates two filtration plants: a slow-sand plant and a rapid-sand plant. The plants are located at the corner of Swift Street and Pulsifer Drive in Auburn. The slow-sand filtration plant was constructed in 1919. The plant contains 4 beds with a total capacity of about 8 mgd. The beds consist of about 3 feet of sand supported by 12 inches of gravel. The rapid-sand filtration plant constructed in 1973 consists of 3 dual-media filters with a combined capacity of about 5.4 mgd. In the rapid-sand plant, all water is pre-treated with poly-aluminum chloride to facilitate coagulation and sedimentation prior to filtration. All water is disinfected with gaseous chlorine (Cl<sub>2</sub>) prior to distribution. Reservoirs on Franklin Street and Swift Street maintain reserves of 10 mg and 3 mg respectively. The City also protects its' raw water intake pipe from Zebra Mussels by adding a chemical solution of Potassium Permanganate (KMNO<sub>4</sub>). The Potassium Permanganate added at concentrations between 0.20 and 0.40 mg/l prevents adolescent zebra mussels from developing into adults, which can attach to the inside of the intake pipe and restrict our ability to draw water from the lake. The extra-added benefit of adding Potassium Permanganate is that it helps control taste and odor problems as well as limiting the production of tri-halomethanes. **During 2002 we executed the completion of the first stage of a \$4 million dollar plant renovation project, to comply with Federal Regulations regarding enhanced surface water treatment requirements. In 2003, Phase II Construction will commence to perform pipe replacement and structural renovation at the Slow Sand Facility. Improvements to security and monitoring of the facilities will also be part of the Phase II Project's.**

**During the Summer of 2002, the City of Auburn’s Water Supply experienced problems with a musty smell and bitter taste in the finished water supply. Unusual warm weather conditions provided a perfect breeding ground for algae growth in Owasco Lake. Different types of algae can cause a variety of taste and odor. Although the taste and smell was objectionable to consumers, it is not a public health problem. The situation resolved itself once water temperatures cooled in the fall.**

Drinking water, including bottled water, can reasonably be expected to contain small amounts of contaminants. The presence of contaminants does not necessarily indicate that the water poses a health risk. As mentioned earlier, 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 natural-occurring minerals, 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 before we treat it includes:

**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, are a result from urban stormwater runoff, industrial or domestic wastewater discharges, mining or farming.

**Radioactive Contaminants**, which are naturally occurring.

**Organic Chemical Contaminants**, including synthetic and volatile organic chemicals, which are byproducts of industrial processes, and can also come from gas stations, urban stormwater run-off, and septic systems.

In order to ensure that the tap water is safe to drink, the NYSDOH prescribes regulations that limit the amount of certain contaminants in water provided by public water systems. We treat our water according to EPA’s and the NYSDOH’s regulations. The United States Food and Drug Administration (FDA) regulations establish limits for contaminants in bottled water, which must provide the same protection for public health.

We currently have a program of **Watershed Protection** to enforce regulations, refer to NYCRR Section 1100 (Public Health).

**FACTS AND FIGURES**

Our water system serves approximately 29,000 Auburnians through 8,700 service connections. The City of Auburn also supplies drinking water to areas within the Towns of Sennett, Fleming, and Aurelius as well as the Cayuga County Water Authority who in turn distributes water to Port Byron and the Thruway Authority. It is estimated that Auburn supplies close to 55,000 people in Cayuga County with their drinking water. The total water produced in 2002 was 3,134,904,000 gallons. The daily average of water treated and pumped into the distribution system is 8.1 million gallons per day. Our highest single day was 10.5 million gallons per day. The average amount of water delivered to customers was 9.112 million gallons per day. This leaves an unaccounted for total of 1.384 million gallons. This water was used to flush mains, fight fires and internal use at the Water Filtration Plant, as well as leakage. In 2002, water customers were charged \$10 per 1,000 cubic feet of water. The minimum monthly charge for water per user is \$ 3.33.

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

As the State regulations require, we routinely test your drinking water for numerous contaminants. These contaminants include the following:

<b>Physical</b>	<b>Owasco Lake</b>	<b>NYDOH Maximum Limit</b>
Turbidity (NTU) – RAW WATER	0.68 – 6.64	No Designated Limit
Color	2	15.0 Units
Odor	<1	3 Units
Radon	<0.50 pCi/L	15 pCi/L
<b>Chemical</b>		
pH	6.58 – 8.08	6.5 - 8.5
Hardness (as CaCO3 mg/l)	153 – 171	No Designated Limit
<b>Inorganics (mg/l)</b>		
Arsenic	<0.001	0.05
Antimony	<0.001	0.05
Aluminum	0.10	No designated limit
Barium	0.02	2.00
Beryllium	<0.001	0.004
Cadmium	<0.001	0.005
Chromium	0.0052	0.1
Chloride	21	250

<b>Inorganics (mg/l) - continued</b>		
Copper	0.14	1.3
Cyanide	<0.01	0.2
Fluoride	0.27	2.2
Iron	<0.05	0.3
Lead	0.0066	0.015
Manganese	0.0098	0.3
Mercury	<0.0004	0.002
Nitrate	0.76/0.86/0.94/0.96	10.0
Nickel	0.022	0.1
Selenium	0.0012	0.05
Thallium	<0.001	0.002
Sodium	11	No Designated Limits
Zinc	0.37	5
<b>Organics (mg/l)</b>		
Trihalomethanes, Total	0.024 – 0.078	0.100
HAA5	0.014 – 0.057	No Designated Limits
<b>Specific Organic Chemicals (mg/l)</b>		
Alachlor	<0.0004	0.002
Aldicarb	<0.002	0.003
Aldicarb sulfone	<0.002	0.002
Aldicarb sulfoxide	<0.002	0.004
Atrazine	<0.001	0.003
Carbofuran	<0.002	0.040
Chlordane <Alpha Gamma>	<0.0004	0.002
Dibromochloropropane (DPCP)	<0.0002	0.0002
2, 4-D	<0.01	0.050
Endrin	<0.0001	0.002
Heptachlor	<0.0001	0.0004
Heptachlor epoxide	<0.0001	0.0002
Lindane	<0.0001	0.0002
Methoxychlor	<0.008	0.040
Pentachlorophenol	<0.0002	0.001
Toxaphene	<0.0006	0.003
Vinyl Chloride	<0.0005	0.002
2, 4, 5-TP (Silvex)	<0.002	0.010

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.

#### SUMMARY OF DETECTED CONTAMINANTS

It should be noted that all drinking water, including bottled drinking water, might be reasonably expected to contain 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 1-800-426-4791 or the Cayuga County Health Department at 315-253-1405.

<b>Table of Detected Contaminants</b>							
<b>Contaminant</b>	<b>Violation Yes/No</b>	<b>Date of Sample</b>	<b>Level Detected (Average) (Range)</b>	<b>Unit Measurement</b>	<b>MCL G</b>	<b>Regulatory Limit (MCL, TT or AL)</b>	<b>Likely Source of Contamination</b>
PHYSICAL Turbidity <sup>1</sup>	No	5 days per week	0.36 0.07 – 3.70	NTU	1.0	5.0 distribution system	Sediment Reservoir
PHYSICAL Turbidity <sup>1</sup>	No	5 days per week	0.08 0.029 – 0.336	NTU	0.5-1.0	0.3–1.0 MCL filter Performance	Not in violation
INORGANIC Sodium	No	1/year	11	PPM	No Limit	No Limit	Contained in Raw Water
INORGANIC Nitrate	No	4/year	0.88 0.76 – 0.96	PPM	10	10.0 MCL	Contained in Raw Water
ORGANICS Trihalomethanes, Total	No	4/year	0.037 0.024 – 0.078	Mg/L	0.100	0.100 MCL	Contained in Chlorinated Water

Table of Detected Contaminants - continued							
Contaminant	Violation Yes/No	Date of Sample	Level Detected (Average) (Range)	Unit Measurement	MCL G	Regulatory Limit (MCL, TT or AL)	Likely Source of Contamination
HAA5	No	4/year	0.028 0.014 – 0.057	Mg/L	No Limit	No Limit	Contained in Chlorinated Water
Lead <sup>3</sup>	No	Every 3 Years	0.0066	Mg/L	0.015	0.015 Mg/L AL	Contained in Finished Water, an artifact of old piping and lead soldered joints.
Copper <sup>2</sup>	No	Every 3 Years	0.14	Mg/L	1.3	1.3/L AL	Contained in Finished Water, an artifact of old piping and lead soldered joints.

**Notes:**

1 – 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. Our highest single turbidity measurement for the year occurred on **9/2/02(3.70 NTU)** in the distribution system. State regulations require that turbidity must always be below 5 NTU. The regulations require that 95% of the turbidity samples collected have measurements below 0.3 NTU as filter effluent. Although July was the month when we had the highest measurements, meeting the treatment technique for turbidity, the levels recorded were within the acceptable range allowed and did not constitute a treatment technique violation.

2 – The level presented represents the 90<sup>th</sup> percentile of the 10 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, 33 samples were collected at your water system. The action level for copper was not exceeded at any of the sites tested.

3 – The level presented represents the 90<sup>th</sup> percentile of the 33 samples collected. The action level for lead was not exceeded at any of the 33 sites.

**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.

**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 of liquid in one million parts of liquid (parts per million - ppm).

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

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

**Picograms per liter (pg/l):** Corresponds to one part per of 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 that are longer than 10 micrometers.

**Color:** the presence of dissolved substance in water.

**Hardness:** a characteristic of water caused mainly by the salts of calcium and magnesium, such as bicarbonate, carbonate, sulfate, chloride and nitrate.

**Inorganic chemicals:** materials such as sand, salt, iron, calcium salts and other mineral materials of mineral origin.

**Mcg/L:** micrograms per liter – one microgram of a substance dissolved in each liter of water. This unit is equal to one part-per-billion, or ppb.

**Mg/L:** milligram per liter – a measure of concentration of a dissolved substance. A concentration of one mg/L means that one milligram of a substance is dissolved in each liter of water. For practical purposes, this unit is equal to 1 part-per-million, or ppm.

**Odor threshold:** the minimum odor of a water sample that can just be detected after successive dilutions with odorless water.

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

Turbidity is a measure of the cloudiness of water. We monitor it because it is a good indicator of the effectiveness of our filtration system. Turbidity itself has no health effects. However, turbidity can interfere with disinfection and provide a medium for microbiological growth. Turbidity may indicate the presence of disease causing organisms. These organisms include bacteria, viruses, and parasites that can cause symptoms such as nausea, cramps, diarrhea, and associated headaches. Please pay special attention to the additional statement in this document regarding Cryptosporidium and Giardia. Plant monitoring equipment has been updated and plant procedures have been modified to allow treatment of our water well within all regulatory requirements.

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

During 2002, our system was in compliance with all applicable State and Federal drinking water requirements.

## **INFORMATION ON CRYPTOSPORIDIUM & GIARDIA**

New York State law requires water suppliers to notify their customers about the risks of Cryptosporidiosis and Giardiasis. Cryptosporidiosis and Giardiasis are intestinal illnesses caused by microscopic parasites. Cryptosporidiosis can be very serious for people with weak immune systems, those on chemotherapy, dialysis or transplant patients, as well as people with Crohn's disease or Human Immune Deficiency (HIV) infection. People with weakened immune systems should discuss with their health care providers the need to take extra precautions such as boiling water, using certified bottled water or a specially approved home filter. Individuals who think they may have Cryptosporidiosis or Giardiasis should contact their health care provider immediately.

For additional information on **Cryptosporidiosis** or **Giardiasis**, please contact the Cayuga County Health Department at 315-253-1405.

## **INFORMATION ON RADON**

Radon was last tested for in 1998 but not detected. Radon Lower Limit of detection is 1.1pCi/L. Regulatory limit for Radon  $\leq 15$ pCi/L

## **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/Acquired Immune Deficiency Syndrome (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/Center for Disease Control and Prevention (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 1-800-426-4791.*

## **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; 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.

Retrofit plumbing fixtures.

Be more conscientious of water use.

## **SYSTEM IMPROVEMENTS**

During 2001, we executed the design and bidding phases of the first stage of a \$4.3 million dollar plant renovation project, to enhance the function of the Rapid Sand Plant, and to perform pipe replacement and structural renovation at the Slow Sand Facility. We continue to use Poly Aluminum Chloride (PAC) for coagulation. By using PAC, we have enhanced the pretreatment of the water, reduced chemical handling costs and now produce 1/3 of the waste sludge by volume as in previous years. In 2002 we replaced the Graver Contact Clarifier with a new 12 MGD Sedimentation Flocculation Basin. Work continues on the Phase II of the Water Plant Improvement Project. This phase includes improvements to the filters, water quality monitoring and chemical treatment of the water prior to and post-treatment. Extensive improvements to plant security are also part of 2002-03 plans.

## **ADDITIONAL SOURCES OF INFORMATION**

### **City of Auburn Dept. of Municipal Utilities**

Francis J. DeOrio, Director, 315-255-4180

Anthony DeCaro, Chief Water Plant Operator 315-253-8754

### **United States Environmental Protection Agency Safe Drinking Water Hotline, 1-800-426-4791**

[www.epa.gov/safewater](http://www.epa.gov/safewater)

### **Cayuga County Health Department**

Elaine Daly, Director, Health and Human  
Services 315/253-1405

Eileen O'Connor, Director of Environmental  
Health, 315/253-1405

City's website for information regarding our water supply. <http://ci.auburn.ny.us/>