ANNUAL DRINKING WATER QUALITY REPORT FOR 2005
CITY OF AUBURN
160 SWIFT STREET
AUBURN, NY 13021
WATER SUPPLY ID# NY 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. In 2005 we conducted tests for over 100 contaminants. Although we detected several contaminants, none were found to be at or near established action limits. 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 concerning this report or 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 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 Environmental Protection Agency (EPA) prescribe regulations that 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 1,800 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, and must be protected.

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, completed in 2001**.** The pipe size is increased to 36-inch at the point where it crosses over the Owasco Lake Outlet adjacent to the State Dam, 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, which function in parallel operation. The plants are located at the corner of Swift Street and Pulsifer Drive in Auburn. The slow-sand filtration plant was constructed in 1916-17. The plant contains 4 beds with a total capacity of about 8 mgd. The beds consist of about 42 inches of sand supported by 12 inches of gravel. The rapid-sand filtration plant originally constructed in 1969 consists of 3 dual-media filters with a combined capacity of about 7.50 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 Sodium Hypochlorite Solution prior to distribution. Reservoirs on Franklin Street and Swift Street maintain reserves of 10.0 mg and 3.0 mg respectively. The City also protects its' raw water intake pipe from Zebra Mussels by adding a chemical solution of Sodium Hypochlorite. The addition of sodium hypochlorite at concentrations between 0.40 and 0.70 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. 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, promulgated by law under NYCRR Section 1100 (Public Health).
A report of our Watershed Protection activities can be made available by calling our office.

FACTS AND FIGURES

Our water system serves approximately 25,388 Auburn residents through 8,800 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 2005 was 2,859,579,000 gallons. The daily average of water treated and pumped into the distribution system is 7,841 million gallons per day. Our highest single day was 9,412 million gallons per day.

The average amount of water delivered to the distribution system was 7,650 million gallons per day. This leaves an unaccounted total of 191,000 gallons per day or approximately 2.5%. This water was used to flush mains, fight fires and internal use at the Water Filtration Plant, as well as leakage. In 2005, water customers were charged $1.15 per 1,000 cubic feet of water. The minimum monthly charge for water per user is $3.84

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:

Physical	**Owasco Lake**	**NYDOH Maximum Limit**
Turbidity (NTU)	0.45-6.50	No Designated Limit
Color	<5	15.0 Units
Odor	2	3 Units
Radon	<0.50 pCi/L	15 pCi/L
Chemical		
pH	6.91-8.25	6.5 - 8.5
Hardness (as CaCO3 mg/l)	1.30	No Designated Limit
Inorganics (mg/l)		
Arsenic	<0.001	0.05
Aluminum	<0.1	0.05 secondary
Antimony	<0.001	0.006
Barium	0.23	2.00
Beryllium	<0.001	0.004
Cadmium	<0.001	0.005
Chromium	0.0014	0.1
Chloride	27	250
Copper	0.0031	1.3
Cyanide	<0.01	0.2
Fluoride	0.17	2.2
Iron	<0.05	0.3
Lead	<0.001	0.015
Manganese	<0.01	0.3
Molybdenum	<0.01	Not Regulated
Mercury	<0.0002	0.002
Nitrate	1.1; 1.1; 0.82; 0.74	10.0
Nickel	0.0028	0.1
Phosphorus	<0.05	
Selenium	<0.001	0.05
Sulfate	13	250
Silver	<0.01	0.1
Thallium	<0.001	0.002
Sodium	14	No Designated Limit
Zinc	<0.01	5
Organics (mg/l)		
Trihalomethanes, Total	0.026– 0.046	0.80
HAA5	0.020-0.039	0.60
Specific Organic Chemicals (mg/l)		
Alachlor	<0.0004	0.002
Aldicarb	<0.002	0.003
Aldicarb sulfone	<0.002	0.002
Aldicarb sulfoxide	<0.002	0.004
Atrazine	<0.0006	0.003
Benzo(a)pyrene	<0.0002	0.0002
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
Dinoseb	<0.001	0.007
Endrin	<0.0001	0.002
Ethlyene dibromide (EDB)	<0.00005	0.00005
Heptachlor	<0.0001	0.0004
Heptachlor epoxide	<0.0001	0.0002
Hexaclorobenzene	<0.0002	0.001
Lindane	<0.0001	0.0002
Methoxychlor	<0.008	0.040
Pentachlorophenol	<0.001	0.001
Simazine	<0.0008	0.004
Toxaphene	<0.0006	0.003
Vinyl Chloride	<0.0005	0.002

2, 4, 5-TP (Silvex)	<0.002	0.010
Aldrin	<0.01	<0.005
Butachlor	<0.01	<0.05
Carbaryl	<0.002	<0.05
Dalapon	<0.01	<0.05
Dicamba	<0.01	<0.05
Dieldrin	<0.001	<0.005
Diquat	<0.004	<0.002
Endothall	<0.005	<0.05
bis(2-ethylhexyl)adipate	<0.01	<0.006
bis(2-ethylhexyl)phthalate	<0.001	<0.006
glyphosate	<0.005	<0.05
3-hydroxycarbofuran	<0.002	No Designated Limit
Methomyl	<0.002	<0.05
metolachlor	<0.01	<0.05
metribuzin	<0.01	<0.05
oxamyl	<0.002	<0.05
picloram	<0.01	<0.05
propachlor	<0.01	<0.05
2,3,7,8-TCDD (Dioxin)	Non detected	0.00000003

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.

Table of Detected Contaminants

Contaminant	Violation Yes/No	Date of Sample	Level Detected (Average) (Range)	Unit Measurement	MCLG	Regulatory Limit (MCL, TT or AL)	Likely Source of Contamination
Total Coliform	No	7/13/05	1 positive sample	N/A	0	2 or more positive samples	Naturally occurring in Environment
PHYSICAL Turbidity [1]	No	5 days per week	0.26 Avg. Range 0.07-4.14	NTU	N/A	5.0 distribution system	Soil Runoff
PHYSICAL Turbidity	No	7 days per week	0.091Avg. Range 0.004– 0.282	NTU	N/A	0.3–1.0 MCL filter Performance	Soil Runoff
INORGANICS			INORGANICS				
Barium	No	7/21/05	0.23	PPM	2	2	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits.
Chromium	No	7/21/05	1.4	PPB	100	100	Discharge from steel and pulp mills; Erosion of natural deposits.
Chloride	No	7/21/05	27	PPM	N/A	250	Naturally occurring or indicative of road salt contamination.
Fluoride	No	7/21/05	0.17	PPM	N/A	2.2	Erosion of natural deposits; Discharge from fertilizer and aluminum factories.
Nickel	No	7/21/05	2.8	PPB	N/A	2000	Erosion of natural deposits.
Sulfate	No	7/21/05	13	PPM	N/A	250	Naturally occurring.
Sodium	No	7/21/05	14	PPM	N/A	N/A	Naturally occurring; Road salt; Water softeners; Animal waste.
Nitrate	No	2/16/05 5/18/05 9/14/05 11/16/05	0.94 Avg. Range 0.74-1.1	PPM	10	10.0	Contained in Raw Water Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits.
ORGANICS Trihalomethanes, Total	No	2/17/05 5/18/05 9/14/05/ 11/16/05	34 Avg. Range 26-46	PPB	N/A	80	By-product of drinking water chlorination needed to kill harmful organisms. TTHMs are formed when source water contains large amounts of organic matter.

HAA5	No	2/17/05 5/18/05 9/14/05/ 11/16/05	26 Avg. Range 20-39	PPB	N/A	60	By-product of drinking water chlorination needed to kill harmful organisms.
Lead[1]	No	Every 3 Years June 2005	2.6[1] ND-12	PPB	0	AL=15	Corrosion of household plumbing systems; Erosion of natural deposits.
Copper[2]	No	Every 3 Years June 2005	0.13[2] 0.0047-0.2	Mg/L	1.3	AL=1.3	Corrosion of household plumbing systems; Erosion of natural deposits; leaching from wood preservatives.

Notes:
1 – The level presented represents the 90th percentile of the 33 samples collected. The action level for lead was not exceeded at any of the 33 sites.
2 – The level presented represents the 90th percentile of the 33 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 copper values detected at your water system. In this case, 33 samples were collected at your water system and the 90th percentile was 0.13mg/l. The action level for copper was not exceeded at any of the sites tested.

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. 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 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).
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.
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 2005, our system was in compliance with all applicable State and Federal drinking water requirements, with the following exceptions:
August 11, 12, 13 - filtration bypass wavier was allowed due to catastrophic failure of rapid-sand filter No. 3 during a scheduled filter reconstruction project. This created a shortfall in meeting our filtered water production requirements for a four-day period.
December 5 - Chlorine residual limit of 4.0 was detected in the distribution system and the City failed to notify the Health Department.

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 Chrohn'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 2002 but not detected. Radon Lower Limit of detection is 1.1pCi/L. Regulatory limit for Radon $\leq$15pCi/L
Radiological testing is due again in 2006.

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.
On-line drip calculator: www.mrhall.org/science/wwdripcalc/wwdripcalc.htm

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

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.
We have also improved our telemetry and Supervisory Control and Data Acquisition (SCADA) systems, and added Video surveillance and continue with security upgrades to our outlying facilities.
All three rapid-sand filter *Wheeler* bottoms were replaced in 2005 with *Leopold/Tetra* type bottoms to improve hydraulic characteristics, and enhance filter performance in accordance with our desire to optimize water quality and production.

FREQUENTLY ASKED QUESTIONS & ANSWERS

What affects the taste of my water?
The taste of drinking water is affected by its mineral content as well as the presence of chlorine, which is used to protect against potential bacterial contamination. Sometimes plumbing can cause a metallic flavor, especially if water has been sitting in pipes for many hours. Taste, however, does not necessarily indicate a higher or lower degree. At time, when conditions are right, algae blooms occur in the lake sometimes causing objectionable odors and taste in the finished drinking water. Although algae are removed during the treatment process, some of their metabolites may be left behind. The two most common metabolites are geosmin and 2-methylisoborneal (MIB). Even though these compounds are harmless, the human sense of taste and smell are extremely sensitive to them and can detect them in water at concentrations as low as 5 parts per trillion. To give you an idea of what a “part per trillion” is, consider this – One part per trillion is equivalent to one cent in 10 million dollars.
For the past two years, we have experienced greater than normal taste and odor complaints in the finished water supply. This in part is due to the extreme water temperatures created by record setting atmospheric temperatures. We plan on evaluating options to control these aesthetic problems in 2006.

What affects the way my water looks?

In addition to naturally occurring minerals, our water also includes small amounts of iron picked up from our cast-iron water mains. When a surge of pressure occurs, usually from a main break or a fire hydrant being used, the sediment becomes stirred into the water. During these episodes, the water supply to your home can be tinted yellow or even brownish-red. The iron is harmless and settles out again in a few hours. Please be aware that it will stain clothing, so don’t wash your clothes if you experience iron-tinted water. Also, avoid running hot water at these times, if possible, so that your water heater doesn’t refill with iron-tinted water.

Do I really need to buy a Water Filter or Home Treatment System?

The decision to buy water filters or home treatment systems is yours. Our water meets and exceeds rigid State and Federal Standards. If you decide to buy a filter system, be a smart shopper and do some homework. Be sure that any treatment device you buy is registered with the National Sanitation Foundation (NSF). Information on these systems is available at libraries, or from the NSF.
Contact the NSF toll free at 877-867-3435 or visit www.nsf.org.

A NOTE FROM NEW YORK STATE DEPARTMENT OF HEALTH

The NYS Department of Health has completed a source water assessment for the City of Auburn, based on available information. Possible and actual threats to this drinking water source were evaluated. This source water assessment includes a susceptibility rating based on the risk posed by each potential source of contamination and how easily contaminants can move through the subsurface to lakes. The susceptibility rating is an estimate of the potential for contamination of the source water, it does not mean that the water delivered to consumers is, or will become contaminated. (See the section of this document "Are there contaminants in our drinking water?" for a list of the contaminants that have been detected in the drinking water.) The source water assessments are intended to provide managers with additional information for protecting source waters into the future.

As mentioned before, our water is derived primarily from Owasco Lake. The source water assessment has rated this source as having an elevated susceptibility to protozoa and phosphorus due to the amount of agricultural lands in the assessment area and the quantity of wastewater discharged from municipal wastewater treatment plants to surface water. In addition, this source water assessment rated Owasco Lake as having an elevated susceptibility to pesticide contamination due to the amount of agricultural lands.

County and state health departments will use this information to direct future source water protection activities. These may include water quality monitoring, resource management, planning, and education programs. A copy of the complete assessment is available for review by calling the Cayuga County Health Department at 253-1405.

ADDITIONAL SOURCES OF INFORMATION

City of Auburn Dept. of Municipal Utilities	**United States Environmental Protection Agency Safe Drinking Water Hotline, 1-800-426-4791**	**Cayuga County Health Department**
Francis J. DeOrio, Director, 315-255-4180	www.epa.gov/safewater/	Elaine Daly, Director, Health and Human Services 315/253-1405
Anthony L. DeCaro, Chief Water Plant Operator 315-253-8754		Eileen O'Connor, Director of Environmental Health, 315/253-1405

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