Annual Drinking Water Quality Report for 2023

City of Canandaigua Water Plant
3772 West Lake Rd
Canandaigua, NY 14424
Public Water Supply ID# NY3401150

Introduction

To comply with State regulations, the City of Canandaigua Water Treatment Plant, 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 2023 year, your tap water met all State 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. 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. The City did issue a boil water notice March 1 to March 3, 2023, for parts of the eastern side of the City of Canandaigua due to a potential system depressurization following several water main breaks.

If you have any questions about this report or concerning your drinking water, please contact Peter Virkler, Chief Operator, 585-396-5064, prv@canandaiguanewyork.gov. 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 meetings. The meetings are held the first Thursday of the month at the DPW building located at 205 Saltonstall Street.

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 Canandaigua Lake which is located in Ontario and Yates Counties. During 2023, our system did not experience any restriction of our water source.

We Protect the Source

Making the water safe to drink starts by protecting the place it comes from. We work with state scientists to take samples of water at its source to look for possible pollutants. This is called a Source Water Assessment. The most recent one, completed in 2014, said that our water source could have an elevated potential for protozoa, phosphorus, DBP precursors and pesticide contamination. In response to this information, we inform the public. Please contact us at 585-396-5064 or prv@canandaiguanewyork.gov if you would like more information about the assessment.

How is My Water Treated and Purified?

Canandaigua Lake water is drawn into the plant through an intake pipe. Chlorine is added at the intake to prevent zebra & quagga mussels from colonizing the interior of the pipe and also to control the growth of bacteria and algae.

The lake water is then pumped up to the rapid mix chamber in the process building. Here a coagulant, polyaluminum chloride, is added. This starts the process of coagulation where the coagulant comes into contact with any particles in the water for eventual removal by settling. Powdered activated carbon can be added at this point to control taste and odor issues within the water. The water then goes into a series of basins for a process known as flocculation. This process of gentle agitation causes particles present in the water to agglomerate and form larger and heavier particles known as floc.

By the time the water moves into the settling basins, the formed floc is heavy enough to settle out to the bottom of the tank for removal. The settled waste is periodically drawn off to a holding tank and eventually discarded. After the settling basins, the water is directed to the rapid sand filters. A mixed media filtration system consisting of anthracite coal, sand and garnet filter out any remaining particles.

After water has passed through the filters a final dose of disinfecting chlorine is added. Also added are sodium hydroxide, to balance the pH and prevent corrosion in the distribution system, and a measured quantity of fluoride.

To ensure excellent water quality, water samples are taken regularly and at various stages of the treatment process. These samples are tested for various water quality parameters in New York State certified laboratories. Routine tests are also performed on samples taken in the distribution system on a regular basis.

Source Water Assessment

New York State has completed the Source Water Assessment for Canandaigua Lake and found a moderate susceptibility to contamination for this source of drinking water. The amount of agricultural lands in the assessment area results in elevated potential for protozoa, phosphorus, DBP precursors, and pesticides contamination. While there are some facilities present, permitted discharges do not likely represent an important threat to source water quality based on their density in the assessment area. However, it appears that the total

amount of wastewater discharged to surface water in this assessment area is high enough to further raise the potential for contamination (particularly for protozoa). There is also noteworthy contamination susceptibility associated with other discrete contaminant sources, and these facility types include: hazardous waste sites, chemical bulk storage, landfills, mines, RCRA and TRI.

Further information on the source water assessment of our community water supply is available on the U.S. Geological Survey (USGS) website at ny.water.usgs.gov.

Facts & Figures

The Canandaigua Water Treatment Plant draws water from Canandaigua Lake as its sole source. In 2023, the Facility withdrew 1.523 billion gallons of water from the lake and produced 1.451 billion gallons of water for distribution. The balance was used for backwashing and internally within the water plant. Of the distribution amount, approximately 355 million gallons were metered and sold to the 11,000 residents of the City of Canandaigua at a cost of $4.11/1000 gallons. The City of Canandaigua also sold and metered 1,056 million gallons of water to the Towns of Canandaigua, Farmington, and Hopewell. This leaves a total of 40.4 million gallons or 2.8% of water produced which was lost. This is the amount of water used for firefighting purposes, hydrant flushing, distribution leaks and old, inaccurate meters yet to be replaced.

What Is in Your Drinking Water

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 activity. Contaminants that may be present in source water include:

- 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 or result from urban stormwater runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming.
- Pesticides and herbicides, which may come from a variety of sources such as agriculture, urban stormwater runoff, and residential uses.
- Organic chemical contaminants, including synthetic and volatile organic chemicals, which are by-products of industrial processes and petroleum production, and can also come from gas stations, urban stormwater runoff, and septic systems.
- Radioactive contaminants, which can be naturally occurring or be the result of oil and gas production and mining activities.

In order to ensure that tap water is safe to drink, the Environmental Protection Agency (EPA) prescribes regulations which limit the amount of certain contaminants in water provided by public water systems. The Food and Drug Administration (FDA) regulations

establish limits for contaminants in bottled water which must provide the same protection for public health.

Drinking water, including bottled water, may reasonably be 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 Environmental Protection Agency's Safe Drinking Water Hotline at 800-426-4791.

Sampling and Testing

We take more than 300 samples across our water system. We're looking for bacteria, metals, and chemicals to make sure the water continues to be safe to drink.

Bacteria

We look for bacteria regularly, as required by law, and there are 30 locations in the water system where we take samples for analysis. More thorough testing, evaluation, and action is required if bacteria are found in even a small percentage of tests.

Disinfection by-products (Trihalomethane (THM) or Haloacetic Acids (HAA))

Four times per year we look for byproducts of the disinfection process. When chlorine, the disinfectant we use to protect against the water of bacteria and viruses, starts to break down in the water, it can form new compounds. These compounds, trihalomethanes (THM) and haloacetic acid (HAA), have been known to cause cancer at high levels. The legal limit for drinking water is 80 parts per billion and 60 parts per billion respectively. We test for these compounds at four different locations in the water system.

Lead and Copper

We take water samples from 30 different homes in our system every three years to test them for lead and copper. More information about lead and copper can be found in the following pages. A new lead & copper regulation will require changes to the sampling program in the future.

Are There Contaminants in our Drinking Water?

As the State regulations require, we routinely test your drinking water for numerous contaminants. These contaminants include: total coliform, turbidity, inorganic compounds, nitrate, lead and copper, total trihalomethanes, haloacetic acids, radiological compounds, and synthetic organic compounds. 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, Geneva District Office at 315-789-3030.

As the State regulations require, we routinely test your drinking water for numerous contaminants. These contaminants include: total coliform, turbidity, inorganic compounds, nitrate, lead and copper, volatile organic compounds, total trihalomethanes, radiological compounds and synthetic organic compounds.

As you can see by the table, our system had no 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.

(See Data Tables)

Regulated Substances

Substance (Units)	Date Sampled	MCL	MCLG	Ave Amt.	Range (Low High)	Violation	
Barium (ppm)	Feb 2023	2	2	0.024	N/A	No	Discharge of drilling wastes, metal
Nickel (ppb)	Feb 2023	100	100	1.3	N/A	No	Erosion of natural deposits; disc
Fluoride (ppm)[1]	2023	2.2	N/A	0.71	<0.2-0.97	No	Erosion of natural deposits; water additive;
Nitrate (ppm)	Feb 2023	10	10	0.36	N/A	No	Runoff from fertilizer use; leaching from sep
Chromium (ppb)	Feb 2023	100	100	<1	N/A	No	Erosion of natural deposits; disc
Total Coliform & E. coli[5]	2023	>5% positive	0	1		No	Naturally present in the environ
Turbidity Combine Filter Effluent (NTU)[2]	2023	TT=0.3	N/A	0.19 Max	0.03-0.24	No	Soil runoff, measured in laborat
Turbidity Combine Filter Effluent (NTU)[2]	2023	TT=0.3	N/A	99% ≤ 0.3	N/A	No	Soil runoff
Alkalinity (ppm)	2023	N/A	N/A	119	113-124	No	Naturally present in the environ
Total Organic Carbon (ppm)	2023	N/A	N/A	2.45	1.7 - 4.9	No	Naturally present in the environ
Dissolved Organic Carbon (ppm)	2023	N/A	N/A	2.21	1.7 - 2.7	No	Naturally present in the environ
UV254 (cm^{-1})	2023	N/A	N/A	0.0262	0.0190 - 0.0262	No	
Specific Ultraviolet Absorb (L/mg-m)	2023	N/A	2	1.20	0.85 - 1.36	No	
Raw Water Microcystin (ppb)	2023	N/A	N/A	<0.3	<0.3	No	Cyanobacteria
Perfluorooctanesulfonic acid (ng/L)	Feb 2022	10	N/A	<2	N/A	No	Fire fighting foam, water repell
Perfluorooctanoic acid (ng/L)	Feb 2022	10	N/A	<2	N/A	No	Fire fighting foam, water repell
1,4-Dioxane (ppb)	Feb 2022	1	N/A	<0.04	N/A	No	
Stage II							
Total Haloacetic Acids (ppb)	2023	60	N/A	29[6]	14-47	No	By products of drinking water c
Total Trihalomethanes (ppb)	2023	80	N/A	59[6]	30-93	No	By products of drinking water c
Radiological							
Gross Alpha (pCi/L)	Feb 2022	15	0	1.0 +/- 1.4	N/A	No	Erosion of natural deposits
Gross Beta (pCi/L)	Feb 2022			1.6 +/- 0.9			Erosion of natural deposits
Radium 226 (pCi/L)	Feb 2022	5	0	-0.15 +/- 0.3	N/A	No	Erosion of natural deposits
Radium 228 (pCi/L)	Feb 2022	5	0	0.32 +/- 0.4	N/A	No	Erosion of natural deposits
Uranium (ppb)	Feb 2022	30	0	0.32	0.32	No	Erosion of natural deposits
Lead & Copper	Date Sampled	AL	MCLG	90th percentile	Range (Low High)	Violation	Typical Source
Copper (ppm)	6/23	1.3	N/A	0.031	0.0013-0.041	No	Corrosion of plumbing systems; Erosion of
Lead (ppb)	6/23	15	N/A	1.3[3]	<1-1.9	0[4] -No	Corrosion of household plumbi

[1]Fluoride is added to the water supply to help promote strong teeth. The Department of Public Health recommends an optimal fluoride concentration of 0.7 mg/L. Measured on laboratory's finished water.

[2]Turbidity is a measure of the cloudiness of the water, and is monitored as an indicator of the effectiveness of our filtration system. State regulations require that turbidity must always be below 1 NTU. The turbidity rule requires that 95% or more of monthly samples be below 0.3 NTUs. Measured in lab.

[3]The level presented represents the 90th 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 90th percentile is equal to or greater than 90% of the lead and copper values detected at your water system.

[4]Number of homes out of 30 that were above the action level.

[5]Coliforms are bacteria that are naturally present in the environment and are used as an indicator that other, potentially harmful bacteria may be present.

[6]This level represents the highest locational running annual average calculated from data collected

Table Definitions

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

Maximum Amount Detected: This column represents an average of sample result data collected during the reporting year. In some cases, it may represent a single sample if only one sample was collected.

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 possible.

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.

N/A: Not applicable

ND: Not detectable at testing limits.

Nephelometric Turbidity Units (NTU): Measure of the clarity, or turbidity, of water.

Parts per Billion: One part of liquid in one billion parts of liquid (or microgram per liter).

Parts per Million: One part of liquid in one million parts of liquid (or milligram per liter).

Range (Low – High): This column represents a range of individual sample results, from lowest to highest, that were collected during the reporting year.

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

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

Picocuries per Liter (pCi/L): Picocuries per liter is a measure of radioactivity in water.

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.

Millirems per year (mrem/yr): A measure of radiation absorbed by the body.

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.

We have learned through our testing that some contaminants have been detected; however, these contaminants were detected below New York State requirements. We are required to present the following information on lead in drinking water:

From the EPA

Lead can cause serious health problems, especially for pregnant women and young children. Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. The Canandaigua Water Plant is responsible for providing high quality drinking water and removing lead pipes but cannot control the variety of materials used in plumbing components in your home. You share the responsibility for protecting yourself and your family from the lead in your home plumbing. You can take responsibility by identifying and removing lead materials within your home plumbing and taking steps to reduce your family's risk. Before drinking tap water, flush your pipes for several minutes by running your tap, taking a shower, doing laundry or a load of dishes. You can also use a filter certified by an American National Standards Institute accredited certifier to reduce lead in drinking water. If you are concerned about lead in your water and wish to have your water tested, contact the Canandaigua Water Plant at 585-396-5064. Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available at http://www.epa.gov/safewater/lead

Does Our Water System Take Corrosion Control Efforts?

The City of Canandaigua Water Treatment Plant does make efforts to control the corrosivity of its treated water. The primary focus of corrosion control is to prevent any lead within the distribution system from leaching into the water and having negative health effects for consumers of the water. An unknown amount of lead pipes remain in use within the City's distribution system or within homes and other residences as well as commercial buildings. The City of Canandaigua Water Treatment Plant adds 1.6 mg/L of 25% sodium hydroxide to its finished water. This addition of sodium hydroxide raises the pH of the finished water to an approximate target of a pH of 8.2. The exact pH targeted is calculated by measuring the Langelier Index of the water. The Langelier Index is an approximate indicator of the degree of saturation of calcium carbonate in the water. By keeping a slightly positive Langelier Index, we can keep the finished water from being aggressive. Aggressive water will dissolve any lead pipes or solder in the system, which allows the lead to dissolve into the water. This water may then be consumed by people drinking the water. Instead, with a slightly positive Langelier Index, a fine layer of scale will be deposited in the pipelines, which will encapsulate any lead that is within the water distribution system. This encapsulation keeps the lead from dissolving into the finished water. The water plant does adjust the pH of the finished water in order to not deposit enough scale in the pipes that residential plumbing will be negatively impacted.

Is Our Water System Meeting Other Rules That Govern Operations?

Our water system violated two drinking water requirements. Even though this was not an emergency, as our customers, you have a right to know what happened and what we did to correct the situation.

In 2023, your tap water met all State drinking and monitoring water health standards. No monitoring or other violations were issued to the water plant.

What should I do?

There is nothing you need to do at this time. You may continue to drink the water. If a situation arises where the water is no longer safe to drink, you will be notified within 24 hours.

What is being done?

The water plant updated its revised total coliform monitoring plan to include a schedule. We began collection of our monthly samples for total coliform/*e.coli* in accordance with this sampling plan which includes approximately 30 monitoring sites. These sampling sites are representative of the distribution system.

In regards to the lead informational statement, it has been included in this document (please see previous page).

For more information, please contact the water plant or Peter Virkler at 585-396-5064 or at prv@canandaiguanewyork.gov .

Please share this information with all the other people who drink this water, especially those who may not have received this notice directly (for example, people in apartments, nursing homes, schools and businesses). You can do this by posting this notice in a public place or distributing copies by hand or mail.

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).

Look Out for Special Populations

Some people may be more vulnerable to contaminants 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 about drinking water from their health care

providers. EPA/CDC guidelines on appropriate means to lessen the risk of infection by Cryptosporidium and other microbial contaminants are available from the Safe Drinking Water Hotline at 800-426-4791.

Information For Spanish Speaking Residents

Este informe contiene información muy importante sobre su agua beber. Tradúzcalo ó hable con alguien que lo entienda bien.

Safely Connect Outdoor Hoses

A factor that can influence water quality in your home are connections to your water outside your home. The outdoor spigot connection to a hose provides a potential way for pollutants to enter your plumbing. If you use the hose to spray chemicals on your yard by connecting the nozzle to a spray bottle, or if you have a sprinkler system connected, there is the potential for chemicals from the bottle or the lawn to be accidentally sucked back into your internal plumbing. To prevent this from happening, we recommend (and in some states it is the law) that you have a device installed to prevent that from happening.

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 a properly controlled level. To ensure that the fluoride supplement in your water provides optimal dental protection, monitor fluoride levels on a daily basis to make sure fluoride is maintained at a target level of 0.7 mg/L. The water plant installed new bulk storage tanks for its fluoride system. This prevented the water plant from dosing the water with fluoride from August 1 to September 5, 2023. During 2023 monitoring showed that fluoride levels measured in the plant's laboratory were between 0.60 and 0.80 mg/L 72% 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 money;
- Saving water reduces the cost of energy required to pump water and the need to construct costly new plant capacity, 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 firefighting 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 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 2024 the Canandaigua water plant intends to install a disinfection byproduct remediation systems in to water storage tank 2 and tank 3.

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.