



Niagara Falls Water Board

Annual Drinking Water Quality Report for 2021

5815 Buffalo Avenue, Niagara Falls, NY 14304
(Public Water Supply #NY3100568)

INTRODUCTION

To comply with State and Federal regulations, the Niagara Falls Water Board issues an annual report describing the quality of your drinking water. The purpose of this report is to increase your understanding of drinking water and awareness of the need to protect our drinking water sources. Last year, your tap water met all State drinking water health standards. We are pleased to report that our system has never violated a state established maximum contaminant level. 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 New York State standards.

If you have any questions about this report or concerning your drinking water, please contact our Chief Operator, Operator in Responsible Charge, Robert Rowe at (716) 283-9770 ext. 2030, or you can contact our Water Quality Laboratory Director, Jordan Boyd at ext. 2050. We want you to be informed about your drinking water. If you want more information, please contact the Executive Director, Dr. Abderrahman Zehraoui at (716) 283-9770 or attend any of our regularly scheduled Niagara Falls Water Board meetings. The meetings are held at the Michael C. O'Laughlin Water Plant at 5815 Buffalo Ave., Niagara Falls, NY. For a schedule of dates of these meetings, please visit our website at <https://nfwb.org/reports/minutes/> or call for more information.

WHERE DOES OUR WATER COME FROM?

In general, the sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs, and wells. As water travels over the surface of the land or through the ground, it dissolves naturally occurring minerals and can pick up substances resulting from the presence of animals or from human activities. Contaminants that may be present in source water include: microbial contaminants; inorganic contaminants; pesticides and herbicides; organic chemical contaminants; and radioactive contaminants. In order to ensure that tap water is safe to drink, the State and the EPA prescribe regulations which limit the amount of certain contaminants in water provided by public water systems. The State Health Departments and the EPA's regulations establish limits for contaminants in bottled water which must provide the same protection for public health.

Our water source is the upper Niagara River. During 2021, our system did not experience any restriction on our water source. The placement of the intake allows water to be drawn that is least affected by runoff. At the Low Lift pump station, water passes through screens to remove excess debris. It is then pumped to the pre-treatment tanks where chlorine is added as a disinfectant. Powdered activated carbon may also be added during the summer months to aid in taste and odor abatement. In the rapid mix chamber, poly-aluminum chloride (PACl) is then added to enhance particulate removal. The water then travels to the flocculation basins. These basins gently mix the PACl and any particles, allowing them to form a floc. The water then travels to sedimentation basins and the floc settles to the bottom of the basins. The water then flows into rapid sand filters. The filters remove any particles that remain. After filtration, the treated water is chlorinated again and stored in reservoirs before being pumped into the distribution system. The Niagara Falls water system is one of the many systems in New York State that adds a low level of fluoride to drinking water in order to provide consumers 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 level of 0.7 mg/L (parts per million). Our fluoride addition facility is designed and operated to meet this optimal range. As a service to the community, a Poly-Orthophosphate blend is also added to prevent household lead and copper contamination.

SOURCE WATER ASSESSMENT PROGRAM (SWAP) SUMMARY

The New York State Department of Health completed a 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 and residential lands in the assessment area results in elevated potential for microbial, disinfection byproduct precursors 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: Chemical Bulk Storage facilities, Inactive Hazardous Waste Sites, Landfills, Toxic Release Inventory data, and Resources Conservation and Recovery Act (RCRA) facilities. Anyone interested in obtaining a copy of our SWAP can do so by submitting a written request to the Niagara Falls Water Board or by visiting our web site at www.nfwb.org.

FACTS AND FIGURES

Our water system serves about 50,000 people through 18,000 service connections. The total water produced in 2021 was over 7.7 billion gallons. The daily average of water treated and pumped into the distribution system was 21.3 million gallons per day. Our highest single day was about 26.1 million gallons. The annual amount of water delivered to customers was about 2.5 billion gallons. This leaves about 5.2 billion gallons unaccounted for. Unaccounted for water includes such conditions as flushing of water mains, meter inaccuracies, illegal consumption, fire hydrant usage, authorized unmetered usage (street cleaning, etc.) and underground pipe leakage. In 2021, water customers were charged \$4.71 per 1000 gallons.

FLUORIDE IN OUR DRINKING WATER

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, we monitor fluoride levels on a daily basis to make sure fluoride is maintained at a target level of 0.7 mg/L. During 2021, monitoring showed that fluoride levels in your water were within 0.1 mg/l of the target level all of the time. None of the monitoring results showed fluoride at levels that approach the 2.2 mg/l MCL for fluoride.

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, volatile organic compounds, total trihalomethanes, haloacetic acids, radiological and synthetic organic compounds. During 2021, Water Board staff performed over 14,000 individual water quality tests. The table presented below depicts which compounds were detected in your drinking water. A more detailed supplemental list of all monitored constituents is available by calling (716) 283-9770 and requesting a copy. 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) 439-7444. Please refer to the following tables containing monitoring results of contaminants. New York State allows us to monitor for some contaminants less than once per year because the concentrations of these contaminants do not change frequently. Some of our data, though representative, is more than one year old.

As with many contaminants, there are possible health effects related to some of them listed below. For a list of these contaminants and more, including the possible health effects, please visit our website at the following link <https://nfwb.org/app/uploads/2021/05/Health-Effects-Language-for-Contaminants.pdf>

REGULATED DETECTED CONTAMINANTS

Metals, Inorganics Physical Tests	Violation Yes/No	Sample Date (mo./year)	Lvl Detected (Avg/Max) (Range)	Unit Meas.	MCLG	MCL	Source in Drinking Water
Barium	No	6/2021	0.0198	mg/L	NE	2	Erosion of natural deposits
Chloride	No	2021	23.9 21.2 - 26.1	mg/L	250	NE	Naturally occurring or indicative of road salt contamination
Chlorine Entry Point	No	2021	1.23 1.11 - 1.41	mg/L	MRDLG = 4.0	MRDL = 4.0	Added for disinfection
Copper ¹ Distribution	No	7/2020- 9/2020	0.0472 ² <0.020 - 0.105	mg/L	1.3	AL = 1.3	Plumbing systems, erosion of natural deposits
Lead ¹ Distribution	No	7/2020- 9/2020	10.9 ² <0.50 - 29.2	ug/L	0	AL = 15	Corrosion of household plumbing systems, erosion of natural deposits
Fluoride (EP) Entry Point ⁶	No	2021	0.70 0.61 - 0.79	mg/L	2.2	2.2	Erosion of natural deposits; water additive which promotes strong teeth; disch. from fertilizer and aluminum factories
Nickel, Total	No	6/2021	<0.002	mg/L	NR	NR	Naturally occurring or industrial discharges
Nitrate	No	2/2021	0.25	mg/L	10	MCL = 10	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits
pH	No	2021	7.33 7.05 - 8.18	SU	NR	NE	Naturally occurring
Sodium ⁵	No	6/2021	9.82	mg/L	(see Health Effects)	NE	Naturally occurring; Road salt; Water softeners; Animal waste
Phosphates Distribution	No	2021	0.08 0.02- 0.16	mg/L	NR	NE	Corrosion inhibitor added to prevent lead & copper leaching in houses
Turbidity ³ Entry Point	No	2021	0.03 0.01 - 0.07	NTU	NE	TT=95% samples <0.3 NTU	Soil Runoff
Turbidity ⁴ Distribution	No	2021	0.13 0.06- 3.76	NTU	NE	5.00 NTU monthly avg	Iron build up in water mains in distribution system
Chlorine, Free (Dist)	No	2021	0.72 0.05 - 1.32	mg/l	NE	MRDL = 4.0	Result of drinking water chlorination

1 - Lead or Copper is not present in the drinking water that is treated and delivered to your home. Lead or Copper in drinking water is primarily from materials and components associated with service lines and home plumbing. If present, elevated levels of lead or copper can cause serious health problems, especially for pregnant women and young children. The NFWB 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 and copper exposure by flushing your tap for 30 seconds to 2 minutes before using water for drinking or cooking. If you are concerned about lead or copper 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 (800-426-4791) or at <http://www.epa.gov/safewater/lead>.

2 - The level presented represents the 90th percentile of the thirty samples collected. The action level for lead or copper was not exceeded.

3 - Turbidity is a measure of the composite effluent clarity of the water; the lower the turbidity, the clearer the water. Turbidity testing is a good indicator of the effectiveness of our filtration system. State regulations require that turbidity must always be below 1 NTU. Our highest single turbidity measurements for the year occurred on 12/29/2021 and 12/30/2021 (0.066 NTU). The regulations require that 95% of the turbidity samples collected have measurements below 0.3 NTU.

- 4 - Turbidity in the distribution system is a snap shot picture of the clarity of water at predetermined locations collected during the year. There are 15 locations throughout the city used with a total of 875 samples collected in 2021. A violation occurs when the monthly average of the results of all distribution samples collected in any calendar month exceeds the MCL of 5 NTU. Sporadic high results can occur when there is a disruption in the flow due to a water main break, fire department usage or even street sweepers filling from a hydrant.
- 5 - Health Effects of Sodium: Water containing more than 20 mg/l of sodium should not be used for drinking by people on severely restricted sodium diets. Water containing more than 270 mg/l of sodium should not be used for drinking by people on moderately restricted sodium diets.
- 6 - On April 27, 2015 the U.S. Department of Health and Human Services (DHHS) released the final Public Health Service (PHS) recommendation for the optimal fluoride level in drinking water to prevent tooth decay. The new recommendation is for a single level of 0.7 milligrams of fluoride per liter (parts per million, ppm) of water. It updates and replaces the previous recommended range (0.7 to 1.2 milligrams per liter) issued in 1962.

Organic Compounds	Violation Yes/No	Date of Sample (mo./year)	Lvl Detected (Avg/Max) (Range)	Unit Measurement	MCLG	MCL	Source in Drinking Water
Stage 2 Disinfection Byproducts Rule – Promulgated 11/2012							
Total Trihalomethanes	No	2021	45.82 ⁷ 18.42 – 62.53	µg/L	NE	MCL = 80	Byproduct of drinking water chlorination
Total Haloacetic Acids	No	2021	26.19 ⁷ 1.43 – 32.12	µg/L	NE	MCL = 60	
Synthetic Organic Compounds							
Perfluorooctanoic acid (PFOA)	No	2021	1.72	ng/L	NE	10	Released into the environment from widespread use in commercial and industrial applications.
Perfluorooctane sulfonic acid (PFOS)	No	2021	1.86	ng/L	NE	10	
Atrazine	No	12/2020	0.068	ug/L	3	3	Runoff, herbicide used on row crops
Radioactive Compounds							
Radium 226	No	6/2017	0.0270+/-0.414	pCi/L (Picocuries per liter is a measure of the radioactivity in water)	NE	5	Erosion of natural deposits
Radium 228	No	6/2017	0.122+/-0.203		NE	5	
Uranium	No	6/2017	0.1483		NE	20	
Gross Alpha	No	6/2017	-0.737+/-0.788		NE	15	
Gross Beta	No	6/2017	0.887+/-0.593		NE	3.0	
Microbiological Contaminants							
Total Coliform	No	8/16/2021 10/6/2021	3 Positive Samples ⁸	N/A	N/A	TT ≥ 5% samples positive	Naturally present in the environment
E. coli	No	8/16/2021 10/6/2021	2 Positive Samples ⁸	N/A	N/A	MCL = 1 or more positive samples	Human and animal fecal waste
Heterotrophic Plate Count	No	2021	4 0 - 166	cfu/1.0ml	NE	500	HPC measures a range of bacteria that are naturally present

- 7 - Results for Total Trihalomethanes (TTHMs) and Total Haloacetic Acids (HAA5s) are reported as the highest LRAA. This level represents the LRAA calculated from data collected from four quarterly samples at eight points in the 2021 calendar year.
8. A violation occurs when a total coliform positive sample is positive for E. coli and a repeat total coliform sample is positive or when a total coliform positive sample is negative for E. coli but a repeat total coliform sample is positive and the sample is also positive for E. coli. The repeat samples from 8/16/2021 and 10/6/2021 were both negative for Total Coliform and E.coli.

UNREGULATED SUBSTANCES									
Metals, Inorganics Physical Tests	Date of Sample (mo./year)	Lvl Detected (Avg/Max) (Range)	MCLG	MCL	Metals, Inorganics Physical Tests	Date of Sample (mo./year)	Lvl Detected (Avg/Max) (Range) mg/L	MCLG	MCL
Alkalinity	2021	86.2 mg/L 80.5– 89.5	NE	NR	Sulfate	6/2021	20.6	NE	NR
Calcium	2021	31.6 mg/L 28.8 – 34.3	NE	NR	Total Dissolved Solids	6/2021	120	NE	NR
Conductivity	2021	281.9 µS/cm 273.4 – 292.5	NE	NR	Total Organic Carbon F/w	2021	1.69 1.57 – 1.99	NE	NR
Magnesium	6/2021	8.8 mg/L	NE	NR	Total Organic Carbon R/w	2021	2.01 1.79-2.19	NE	NR
Odor	6/2016	0 TON	NE	NR					

UNREGULATED CONTAMINANT MONITORING RULE 4⁸									
Organic Compounds / DBPs	Date of Sample (mo./year)	Lvl Detected (Avg/Max) (Range) ug/L	MCLG	MCL	Organic Compounds / DBP	Date of Sample (mo./year)	Lvl Detected (Avg/Max) (Range) ug/L	MCLG	MCL
Bromochloroacetic Acid (BCAA)	2020	2.83 <0.3– 4.90	NE	NR	Monobromoacetic Acid (MBAA)	2020	0.41 <0.30-0.74	NE	NR
Bromodichloroacetic Acid (BDCAA)	2020	2.89 <0.50 – 4.30	NE	NR	Trichloroacetic Acid (TCAA)	2020	5.85 <0.50-9.90	NE	NR
Chlorodibromoacetic Acid (CDBAA)	2020	0.78 <0.3 – 1.30	NE	NR	Metals, Inorganics Physical Tests				
Dibromoacetic Acid	2020	0.80 <0.30-1.50	NE	NR	Bromide	2020	32.55 <20.0-59.3	NE	NR
Dichloroacetic Acid (DCAA)	2020	6.50 0.25-12.80	NE	NR	Manganese	5/2020	0.61	NE	NR

- 9- UCMR4 (Unregulated Contaminant Monitoring Rule 4 published 12/20/2016) - EPA monitoring program consisting of 4 sets of samples taken between 2018–2020, The 1996 Safe Drinking Water Act (SDWA) amendments require that once every five years EPA issue a new list of no more than 30 unregulated contaminants to be monitored by PWS. This monitoring provides a basis for future regulatory actions to protect public health. (UCMR1:09/17/1999, UCMR2:01/04/2007, UCMR3:05/02/2012)

Abbreviations and Terms:

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

cfu/1.0ml - Colony forming units per 1.0 milliliters.

DPB - Disinfection Byproducts

LRAA - Locational Running Annual Average

LSI - Langelier Saturation Index: Provides an indicator of the degree of saturation of water with respect to calcium carbonate. A negative LSI has no scale potential whereas with a positive LSI scale can form.

MCL - Maximum Contaminant Level: The highest level of a contaminant that is allowed in drinking water. MCLs are set as close to the MCLGs as feasible.

MCLG - Maximum Contaminant Level Goal: 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.

mg/L - Milligrams per liter: One part per million.

µg/L - Micrograms per liter: One part per billion.

µS/cm - Micro Siemens per centimeter

MRDL - Maximum Residual Disinfectant Level: 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.

MRDLG - Maximum Residual Disinfectant Level Goal: 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.

NE - Not Established.

NR - Not Regulated.

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

SU = Standard Units: Used for the measurement of pH.

TON = Threshold Odor Number

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

IS OUR WATER SYSTEM MEETING OTHER RULES THAT GOVERN OPERATIONS?

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. During 2021, our system was in compliance with all applicable State & Federal drinking water requirements.

WHAT ABOUT SECURITY?

Since the events of 9/11, we have all become more aware of security issues in our daily lives. The staff of the Michael C. O'Laughlin Water Plant is certainly no exception. The water department has undertaken several security improvements to safeguard your water supply, both at the plant and out in the distribution system. We encourage the community to call our facility at (716) 283-9770 or the police (911) if you happen to observe any unusual or suspicious activity around the water plant or at one of our storage tanks.

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, pumping systems and water towers;
- ◆ Saving water lessens the strain on the water system during a dry spell or drought, helping to avoid severe water use restrictions so that essential 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 can 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 small diamond on the meter, if it moves, you may have a leak.

SYSTEM IMPROVEMENTS

The Niagara Falls Water Board is continually making capital improvements to its distribution system. The following improvements were made in 2021:

1. Applications for several grants to improve our drinking water treatment plant and the distribution system.
2. Approximately 80 fire hydrants replaced with new and many repaired for better fire protection and flushing capabilities.

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 and our way of life. Please call our office at (716) 283-9770 if you have any questions. For other information, you can call the following Monday through Friday 8 AM to 4 PM: Water Billing and Collection – (716) 286-4350

Water Quality Laboratory – (716) 283-9770 ext. 2050

Water Related Emergencies 24 hours a day – (716) 283-9770