

Annual Drinking Water Quality Report for 2017
City of North Tonawanda Public Water System
216 Payne Ave., Room #6, North Tonawanda, NY.14120
(Public Water Supply ID #NY3100572)

INTRODUCTION

To comply with State and Federal regulations, the City of North Tonawanda Public Water System, will be annually issuing a report describing the quality of your drinking water. The purpose of this report is to raise your understanding of drinking water and awareness of the need to protect our drinking water sources. Last year, your tap water met all State drinking water health standards. We are proud to report that our system has never violated a maximum contaminant level or any other water quality statement. 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 the Water Department Offices at, Phone# 716-695-8531. We want you to be informed about your drinking water. If you want to learn more, please attend any of our regularly scheduled Common Council meetings. The meetings are held on the first and third Tuesday of every month in the Common Council Chambers at City Hall, 216 Payne Avenue, North Tonawanda, NY.

WHERE DOES OUR WATER COME FROM?

In general, the sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs, and wells. As water travels over the surface of the land or through the ground, it dissolves naturally-occurring minerals and 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 FDA's regulations establish limits for contaminants in bottled water which must provide the same protection for public health.

Our water source is surface water drawn from the Niagara River. Our offices are located at 216 Payne Avenue, Room #6 in the City of North Tonawanda, NY. During 2017, our system did not experience any restriction of our water source. Our intake pipe is located on the East branch of the Niagara River. This intake pipe delivers a supply of Raw water to the North Tonawanda Water Treatment Plant that is rated at a maximum capacity of 12 MGD (Million Gallons per Day). The Plant has a physical treatment process, which includes a Rapid Mixer (for Alum distribution), Coagulation, Flocculation, Sedimentation (settling of suspended solids), and Filtration (filtering out of solids). Chemical processes include Aluminum Sulfate (settling of suspended solids), Chlorine (disinfection), and Fluoride (strong teeth). The finished water is stored in a one million gallon clear well, prior to distribution.

FACTS AND FIGURES

Our water system serves 31,568 people through 11,000 service connections. The total water produced in 2017 was 1.35 billion gallons. The daily average of water treated and pumped into the distribution system was 3.75 million gallons per day. Our highest single day was 5.782 million gallons. The amount of water delivered to residents and businesses was 651 million gallons leaving 695 million gallons used to supply Municipal Facilities, flush mains, fight fires, and leakage (48% of the total amount produced). In 2017, water customers were charged a quarterly minimum fee of \$24 per household and \$3 per 1,000 gallons of water. The average family of four uses approximately 25,000 gallons of water per quarter (100,000 gallons per year) making the average annual water bill approximately \$300.00 per year.

ARE THERE CONTAMINANTS IN OUR DRINKING WATER?

As the State regulations require, we routinely test your drinking water for numerous contaminants. 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, might 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 Department of Health at (716-439-7452).

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
<i>Inorganic Contaminants</i>							
Barium	No	12/17	21.7	ug/l	2000	2000=MCL	Discharge of drilling waste; Discharge from metal refineries; Erosion of natural deposits.
Copper ¹	No	09/2017	78 (<1.0 -144)	ug/l	1300	1300=AL	Corrosion of household plumbing system; Erosion of natural deposits; leaching from wood preservatives.
Lead ¹	No	09/2017	10.0 (<1.0 -70)	ug/l	0	15=AL	Corrosion of household plumbing systems; Erosion of natural deposits.

¹ 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 copper and lead values detected at your water system. In this case, 30 samples were collected at your water system and the 90th percentile value was the 27th highest value. Copper = 78 ug/l; Lead = 10 ug/l. The action level for copper was not exceeded at any of the sites tested. The action level for lead was exceeded at three of the sites tested.

Sodium ²	No	12/2017	9.20	mg/l	N/A	20.0 = AL	Naturally occurring; Road salt; Water softeners; Animal waste.
Fluoride	No	01/17-12/17	0.76 (0.41-0.92)	mg/l	N/A	2.2 = MCL	Erosion of natural deposits; Water additive that promotes strong teeth; Discharge from fertilizer and aluminum factories.
Disinfection/Turbidity							
Chlorine, Free Distribution	No	2017	Avg. 0.79 (0.05-1.4)	mg/l	N/A	4.0 = MRDL	Result of drinking water chlorination
Entry Point Chlorine Residual	No	1/17-12/17	1.33-Avg (0.99-1.53)	mg/l	N/A	4.0 = MRDL	Added for disinfection.
Turbidity ³ Distribution	No	1/17-12/17	Max. 0.41 (0.01-0.41)	NTU	N/A	TT=<5NTU	Soil Runoff
Turbidity ³ Entry Point	No	2017	100% EP compliance	NTU	N/A	TT=95%of Samples<0.3	Soil Runoff
Microbiological Contaminants							
Total Coliform	No	8/24/17	1	N/A	0	TT = 2 or more positive samples	Naturally present in the environment.
Total Coliform	No	11/3/17	1	N/A	0	TT = 2 or more positive samples	Naturally present in the environment.
Radioactive Contaminants							
Gross alpha activity (including radium-226 but excluding radon and uranium)	No	8/17	-0.288+/-0.523	pCi/l	0	15	Erosion of natural deposits
Radium 226	No	08/17	0.288+/-0.338	pCi/l	NA	5.0	Erosion of natural deposits
Radium 228	No	08/17	0.382+/-0.304	pCi/l	0	5.0	Erosion of natural deposits
Uranium	No	08/17	0.311+/-0.011	ug/l	NA	30	Erosion of natural deposits

² Sodium: Water containing more than 20 mg/l sodium should not be used for drinking by people on a severely restricted diet. Water with more than 270 mg/l sodium should not be used by people on a moderately restricted sodium diet

³ Turbidity is a measure of the cloudiness of the water. We monitor it because it is a good indicator of the effectiveness of our filtration system. Our highest single turbidity measurement (0.41 NTU) for the year occurred on 09/20/17. The regulation requires 95% of the turbidity samples collected have measurements below 0.3 NTU's at EP tap. Our Range was 0.01 NTU's to 0.41 NTU's in the distribution system. State regulations require that monthly average distribution turbidity must always be below 5 NTU

⁴ This level represents the highest locational running annual average calculated from data collected.

Disinfection Byproducts							
Total Trihalomethanes ⁴	No	2017	50.0 (23.8-57.8)	ug/l	N/A	MCL=80	By-product of drinking water chlorination
Total Halo Acetic Acids ⁴	No	2017	25.0 (11.4-34.7)	ug/l	N/A	MCL-60	By-product of drinking water chlorination
Unregulated Substances							
Physical Tests/UCMR3	Date of Sample (mo./year)	Level detected Average (Range)		MCLG	MCL		
Alkalinity Source	Monthly/2017	95.0 mg/l (89.0.-100.0)		NA	Non-regulated		
Total Organic Carbon Source Water	Monthly/2017	2.40 mg/l (2.10-2.79)		NA	Non-regulated		
Total Organic Carbon Finished Water	Monthly/2017	2.0 mg/l (1.60-2.32)		NA	Non-regulated		
Molybdenum	Quarterly May 2014-Feb 2015	1.2 ug/l (1.1-1.3)		NA	Non-regulated		
Strontium	Quarterly May 2014-Feb 2015	166 ug/l (141-183)		NA	Non-regulated		
Chromium-5	Quarterly May 2014-Feb 2015	0.24 ug/l (<0.20-0.28)		NA	Non-regulated		
Chromium-6	Quarterly May 2014-Feb 2015	0.069 ug/l (0.056-0.081)		NA	Non-regulated		

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.

Level 1 Assessment: A Level 1 assessment is an evaluation of the water system to identify potential problems and determine, if possible, why total coliform bacteria have been found in our water system.

Level 2 Assessment: A Level 2 assessment is an evaluation of the water system to identify potential problems and determine, if possible, why an *E. coli* MCL violation has occurred and/or why total coliform bacteria have been found in our water system on multiple occasions.

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.

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

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

WHAT DOES THIS INFORMATION MEAN?

As you can see by the tables, our system had no violations. We have learned through our testing that some contaminants have been detected; however, these contaminants were detected below the action level allowed by the State.

If present, elevated levels of lead can cause serious health problems, especially for pregnant women, infants, and young children. It is possible that lead levels at your home may be higher than at other homes in the community as a result of materials used in your home’s plumbing. The North Tonawanda Public Water System is responsible for providing high quality drinking water but cannot control the variety of materials used in plumbing components. When your water has been sitting for several hours, you can minimize the potential for lead exposure by flushing your tap for 30 seconds to 2 minutes before using water for drinking or cooking. If you are concerned about lead in your water, you may wish to have your water tested. Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available from the Safe Drinking Water Hotline (1-800-426-4791) or at <http://www.epa.gov/safewater/lead>.

IS OUR WATER SYSTEM MEETING OTHER RULES THAT GOVERN OPERATIONS?

During 2017, our system was in compliance with applicable State drinking water operating, monitoring and reporting requirements.

INFORMATION ON CRYPTOSPORIDIUM

Cryptosporidium is a microbial pathogen found in surface water and groundwater under the influence of surface water. Although filtration removes Cryptosporidium, the most commonly-used filtration methods cannot guarantee 100 percent removal. During 2017, as part of our routine sampling, twelve raw water samples from the East Niagara River were collected and analyzed for Cryptosporidium oocysts. Of these samples, none were found to contain Cryptosporidium oocysts in our source water. Current test methods do not allow us to determine if the organisms are dead or if they are capable of causing disease. Ingestion of Cryptosporidium may cause cryptosporidiosis, a gastrointestinal infection. Symptoms of infection include nausea, diarrhea, and abdominal cramps. Most healthy individuals can overcome disease within a few weeks. However, immuno-compromised people are at greater risk of developing life-threatening illness. We encourage immuno-compromised individuals to consult their health care provider regarding appropriate precautions to take to avoid infection. Cryptosporidium must be ingested to cause disease, and it may be spread through means other than drinking water.

INFORMATION ON GIARDIA

Giardia is a microbial pathogen present in varying concentrations in many surface waters and groundwater under the influence of surface water. Giardia is removed/inactivated through a combination of filtration and disinfection or by disinfection. During 2017, as part of our routine sampling, twelve raw water samples from the East Niagara River were collected and analyzed for Giardia cysts. Of these samples, seven indicated the presence of Giardia cysts in our source water. Current test methods do not allow us to determine if the organisms are dead or if they are capable of causing disease. Ingestion of Giardia may cause giardiasis, an intestinal illness. People exposed to Giardia may experience mild or severe diarrhea, or in some instances no symptoms at all. Fever is rarely present. Occasionally, some individuals will have chronic diarrhea over several weeks or a month, with significant weight loss. Giardiasis can be treated with anti-parasitic medication. Individuals with weakened immune systems should consult with their health care providers about what steps would best reduce their risks of becoming infected with Giardiasis. Individuals who think that they may have been exposed to Giardiasis should contact their health care providers immediately. The Giardia parasite is passed in the feces of an infected person or animal and may contaminate water or food. Person to person transmission may also occur in day care centers or other settings where hand washing practices are poor.

DO I NEED TO TAKE SPECIAL PRECAUTIONS?

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).

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, we monitor fluoride levels daily to make sure fluoride is maintained at a target level of 0.7 mg/l. During 2017 monitoring showed that fluoride levels in your water were within 0.2 mg/l of the target level for 97% of the time. None of the monitoring results showed fluoride at levels that approach the 2.2 mg/l MCL for fluoride.

CHLORINE

Waterborne diseases are some of the most serious health threats. The treatment of drinking water has saved more lives than all the doctors and hospitals in history. Chlorine is used to eliminate these pathogens from our water system and keep it safe. The chlorine residual leaving our Water Treatment Plant is averaging 1.33 ppm (mg/l).

The highest Distribution residual was 1.66 mg/l, and our lowest, was 0.08 mg/l in 2017. The Treatment Plant constantly monitors the Entry Point Chlorine level and the Distribution System is monitored on a daily basis.

CITY OF NORTH TONAWANDA SWAP SUMMARY

The New York State Department of Health recently completed a draft Source Water Assessment of the supplies **raw water source** under the States Source Water Assessment Program (SWAP). The purpose of this program is to compile, organize, and evaluate information regarding possible and actual threats to the quality of public water supply (PWS) sources. It is important to note that source water assessment reports estimate the **potential** for untreated drinking water sources to be impacted by contamination. These reports do not address the safety or quality of treated finished potable tap water. The Great Lakes' watershed is exceptionally large and too big for a detailed evaluation in the SWAP. General drinking water concerns for public water supplies which use these sources include: storm generated turbidity, wastewater, toxic sediments, shipping related spills, and problems associated with exotic species (e.g. zebra mussels - intake clogging and taste and odor problems). The SWAP is based on the analysis of the contaminant inventory compiled for the drainage area deemed most likely to impact drinking water quality at this public water supply raw water intake. This assessment found an elevated susceptibility to contamination for this source of drinking water. The amount of residential land in the assessment area results in elevated potential for microbials, disinfection byproduct precursors, turbidity 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, Municipally Operated Sewage Facilities and Resources Conservation and Recovery Act (RCRA) facilities.

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 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 2017, the raw water intake was cleaned and inspected. The intake must be cleaned and inspected on a regular basis to ensure continued operation of the Water Treatment Plant. A washwater pump variable frequency drive was installed to allow efficient washing of filters. VFD controls for pumps decrease energy usage. New electrical breakers were installed at the Toellner Pump Facility to increase the reliability of our backup during Water Plant power failures. Two new water lines totaling nine hundred seventy feet were installed. The new lines eliminate two-inch diameter galvanized pipe that caused limited flow to fire hydrants in the affected areas.

In 2018 we have a new coagulant delivery system being installed to decrease chemical and maintenance costs. The new diesel-powered backup electrical generator system project will begin this year. Once completed the Water Plant be able to consistently operate at the necessary capacity to provide residents with potable water during power failures. The masonry buildings at the Water Plant date from late 1800's to 1950's. All the brick buildings and structures are currently being repointed and repaired.

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 (716) 695-8560 if you have questions.

Thank you,
Chief Operator David Conti, Responsible Operator in Charge
William Davignon, Superintendent Water/Wastewater.