

Annual Drinking Water Quality Report for 2019
Development Authority of the North Country Watertown to Fort Drum Waterline
PI482 St. Lawrence Avenue & 4th Street
(Public Water Supply ID#2230013)

INTRODUCTION

To comply with State regulations, the Development Authority of the North Country 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 not violated 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. If you have any questions about this report or concerning your drinking water, please contact **The Development Authority of the North Country, 661-3210**. We want you to be informed about your drinking water. We would be happy to discuss any drinking water issues with you in person. If you want to learn more, please contact our office.

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 system serves Fort Drum and several water districts in the Town's of Pamela, LeRay and Champion. Our water source is the Black River. Attached is a copy of the Annual Water Quality Report as supplied by the City of Watertown. The water is pumped from the City of Watertown's clearwell using one of three 75 horsepower centrifugal pumps through a 20-inch ductile iron pipeline to Fort Drum. These pumps are located in Booster Pump Station #1, located on Route 3 near the City's Water Filtration Plant. The water is pumped to a 750,000 gallon ground storage tank located on Fort Drum. Also attached is a copy of the Source Water Assessment Program report completed by the Department of Health for the City of Watertown.

ARE THERE CONTAMINANTS IN OUR DRINKING WATER?

As the State regulations require, we routinely test your drinking water for contaminants. These contaminants include: Total Coliform, Total Trihalomethanes (TTHM) and Haloacetic Acids (HAA5). Of the compounds we analyzed for, Total Trihalomethanes (TTHM) and Haloacetic Acids (HAA5) were detected in your drinking water. 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 Health Department at 785-2277.

Microbiological

Contaminant	Violation Yes/No	Date of Sample	Level Detected (Avg/Max) (Range)	Unit Measurement	MCLG	Regulatory Limit (MCL, TT or AL)	Health Effects
Total Coliform	No	2019	0	N/A	N/A	MCL=2 or more positive samples in 1 month ¹	Naturally Present in the environment.

¹ A violation occurs at systems collecting 40 or more samples per month when more than 5% of the total coliform samples are positive. A violation occurs at systems collecting less than 40 samples per month when two or more samples are total coliform positive

Disinfection Byproducts

Table of Detected Contaminants							
Contaminant	Violation Yes/No	Date of Sample	Level Detected Avg (Range)	Unit Measurement	MCLG	Regulatory Limit (MCL, TT or AL)	Health Effects
Total Trihalomethanes (TTHMs – chloroform, bromodichloromethane, dibromochloromethane, and bromoform)	NO	2019	69.6 ² (11.4-123.8)	ug/l	N/A	MCL=80	By-product of drinking water chlorination needed to kill harmful organisms. TTHMs are formed when source water contains large amounts of organic matter.
Haloacetic Acids (HAA5)	NO	2019	58.2 ² (14.6 -80)	ug/l	N/A	MCL=60	By-product of drinking water chlorination

² This level represents the highest locational running average calculated from the data collected.

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.

IS OUR WATER SYSTEM MEETING OTHER RULES THAT GOVERN OPERATIONS?

During 2019, our system was in compliance with applicable State drinking water operating, monitoring and reporting requirements.

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. Fluoride is added to your water by the City of Watertown and before it is delivered to us. According to the United States Centers for Disease Control, fluoride is very effective in preventing cavities when present in drinking water at an optimal range from 0.8 to 1.3 mg/l (parts per million). To ensure that the fluoride supplement in your water provides optimal dental protection, the State Department of Health requires that the City of Watertown monitor fluoride levels on a daily basis. During 2019 monitoring showed fluoride levels in your water were in the optimal range 100 % 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 some of the costs associated with both of these necessities of life;
- ◆ Saving water reduces the cost of energy required to pump water and the need to construct costly new wells, pumping systems and water towers; and
- ◆ Saving water lessens the strain on the water system during a dry spell or drought, helping to avoid severe water use restrictions so that essential fire fighting needs are met.

You can play a role in conserving water by becoming conscious of the amount of water your household is using, and by looking for ways to use less whenever you can. It is not hard to conserve water. Conservation tips include:

- ◆ Automatic dishwashers use 15 gallons for every cycle, regardless of how many dishes are loaded. So get a run for your money and load it to capacity.
- ◆ Turn off the tap when brushing your teeth.
- ◆ Check every faucet in your home for leaks. Just a slow drip can waste 15 to 20 gallons a day. Fix it up and you can save almost 6,000 gallons per year.
- ◆ Check your toilets for leaks by putting a few drops of food coloring in the tank, watch for a few minutes to see if the color shows up in the bowl. It is not uncommon to lose up to 100 gallons a day from one of these otherwise invisible toilet leaks. Fix it and you save more than 30,000 gallons a year.

CLOSING

Thank you for allowing us to continue to provide your organization/family with quality drinking water this year. In order to maintain a safe and dependable water supply we sometimes need to make improvements that will benefit all of our customers. The costs of these improvements may be reflected in the rate structure. Rate adjustments may be necessary in order to address these improvements. We ask that all our customers help us protect our water sources, which are the heart of our community, our way of life and our children's future. Please call our office, 661-3210, if you have questions.

ANNUAL DRINKING WATER QUALITY REPORT for 2019

CITY OF WATERTOWN WATER DEPARTMENT
245 Washington Street Suite 202, Watertown, New York 13601
April 2020

PUBLIC WATER SUPPLY I.D. #2202346

INTRODUCTION

To comply with State and Federal regulations, the **City of Watertown Water Department** annually issues 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. We are proud to report that our system has not violated 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 and Federal standards.

If you have any questions about this report or concerning your drinking water, please contact **Vicky L. Murphy, Superintendent of Water, at (315) 785-7757**. 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. Significant items of agenda are normally printed in the Watertown Daily Times a few days prior to the meeting. The meetings are on the first and third Mondays of the month at 7:00 pm in the City Council chambers located on the third floor of City Hall, 245 Washington Street, Watertown, New York. Notices of Public Hearings are always printed in the newspaper prior to the meeting under "Legal Notices" in the classified section.

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 the Black River, a surface water source, which originates in the Adirondack Mountains and runs through the center of the City and westerly to Black River Bay. During 2019 our system did not experience any restriction of our water source. Flows in the Black River are regulated by the Hudson-Black River Regulating District and are controlled by a series of hydro-electric power dams stretching from its headwaters in the Adirondacks to its mouth in Lake Ontario. If the City of Watertown's 15 million gallon per day Water Treatment Plant were running at full capacity, it would need only 2.3% of the minimum flow of the Black River. The water is treated within modern facilities prior to distribution. The water filtration building and main pumping station were reconstructed in 1987-1991. Liquid Alum and a nonionic polymer are added to the water to coagulate and settle out dirt and organic matter through a dosing station upstream of the water plant. The settled water is then pumped to the process complex at 1707 Huntington Street. Polyaluminum chloride and nonionic or cationic polymer are added prior to filtering. Carbon may be added to combat taste and odor. The filtered water is disinfected with chlorine to kill bacteria, viruses, and other microorganisms. The water is then treated with sodium silicate for corrosion control and with fluoride to help fight tooth decay. The finished potable water is pumped to the City's distribution system and through the Development Authority of the North Country's line to the Towns of Champion, LeRay, and Pamela.

Additional information is available from the EPA's SAFE DRINKING WATER HOTLINE (800-426-4791)

NYSDOH SOURCE WATER ASSESSMENT PROGRAM FINDINGS

The NYSDOH has evaluated this PWS's (public water supply's) susceptibility to contamination under the Source Water Assessment Program (SWAP), and their findings are summarized in the paragraph below. It is important to stress that these assessments were created using available information and only estimate the potential for source water contamination. Elevated susceptibility ratings do not mean that source water contamination has or will occur for this PWS. This PWS provides treatment and regular monitoring to ensure the water delivered to consumers meets all applicable standards.

Overall, this water supply is most susceptible to microbial contaminants, primarily from pasture and permitted discharges within the watershed. Sediment and turbidity associated with mining operations is also a concern, and transportation routes also have a potential to contribute various contaminants. A copy of the assessment can be obtained by contacting the supplier of water.

FACTS AND FIGURES

Our water system serves residents, businesses, and industry in and adjacent to the City, as well as Water Districts in the Town of Watertown, the Lettiere Tract, and the Watertown Correctional Facility. City water is also supplied to the Development Authority of the North Country water line serving the Towns of Champion, LeRay, and Pamela. The latest census figures set the City of Watertown's population at 26,705. Approximately 23,000 additional consumers reside or work in the Towns of Watertown, Champion, Leray, Hounsfield and Pamela. There are approximately 8,250 service connections inside the City of Watertown.

The total plant output for 2019 was 1,993,773,000 gallons; the daily average was 5,462,000 gallons; the highest single day was 7,694,000 gallons. The amount of water delivered to customers was 1,246,644,640 gallons. The remaining 747,128,360 gallons, or approximately 37.5 percent of the water produced, can be attributed to leaks, fires; annual flushing of water mains and hydrants, flushing and disinfection of newly constructed or repaired water mains, process water used at the Water Plant, and a few un-metered municipal accounts.

The **annual cost** of water for an inside user for the first 1,200 cubic feet (8,976 gallons) is \$40.93 per 1,000 cubic feet (7,480 gallons) per quarter (3 months). Over 1,200 cubic feet the cost is \$27.66 per 1,000 cubic feet per quarter. The **minimum billing** for residential users inside the City, except for customers with an elderly exemption, is \$36.83, which is based on 900 cubic feet (6,732 gallons) quarterly. This equates to \$147.32 annually and averages \$21.884 per 1000 gallons.

ARE THERE CONTAMINANTS IN OUR DRINKING WATER?

As the State regulations require, the City of Watertown routinely monitors and tests your drinking water for numerous contaminants. These contaminants include: total coliform, turbidity, inorganic compounds, nitrate, lead and copper, volatile organic compounds, total trihalomethanes (THM), haloacetic acids (HAA5), Giardia & Cryptosporidium, Gross Alpha, Radium 226 and 228 and synthetic organic compounds. In addition to these regularly monitored contaminants the City also sampled for 30 chemical contaminants including two metals, eight pesticides plus one pesticide manufacturing byproduct, three alcohols, and three semi-volatile organic chemicals (SVOCs) as part of the fourth unregulated contaminate monitoring rule (UCMR4). In 2019 the water was tested for 52 principal organic chemicals (POC's), vinyl chloride, MTBE, nitrate, Primary Inorganic Chemicals (PIC's), Lead, Copper, THM, HAA5, turbidity, total organic carbon (TOC) and total coliform. The table presented on the following pages depicts compounds, which 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, is more than one year old.

This is a list of contaminants that were tested for as part of the 2019 UCMR sampling and were not detectable in any samples: Germanium, alpha-hexachlorocyclohexane, profenofos, chlorpyrifos, tebuconazole, dimethipin, total permethrin (cis- & trans-), ethoprop, tribufos, oxyfluorfen, 1-butanol2-propen-1-ol, 2-methoxyethanol, butylated hydroxyanisole, o-toluidine, quinoline.

It should be noted that all drinking water, including bottled drinking water, might 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

Additional information is available from the EPA's SAFE DRINKING WATER HOTLINE (800-426-4791)

calling the EPA's Safe Drinking Water Hotline (800-426-4791) or the New York State Health Department District Office at (315) 785-2277.

The Long Term 2 Enhanced Surface Water Treatment

Rule (LT2 Rule) requires public water systems (PWSs) that use surface water or ground water under the direct influence (GWUDI) of surface water to monitor their source water (influent water prior to treatment plant) for Cryptosporidium, Giardia, E.coli, and turbidity over a 24 month period. The City commenced sampling in October 2016 and continued to sample monthly over the next 24 months. The LT2 Rule is a National Primary Drinking Water Regulation that requires monitoring, reporting, and public notification for all PWSs that use surface water or GWUDI sources. The LT2 Rule was developed to improve the control of microbial pathogens, including specifically the protozoan Cryptosporidium, in drinking water and to address risk trade-offs with disinfection byproducts.

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. As part of the LT2 sampling plan, 24 samples of the Black River were collected and analyzed for Cryptosporidium oocysts. Of these samples, 3 were presumed positive for Cryptosporidium. Therefore, our monitoring indicates the presence of Cryptosporidium 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.

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. As part of the LT2 sampling plan, 24 samples of the Black River were collected and analyzed for Giardia cysts. Of these samples, 15 were presumed positive for Giardia. Therefore, our monitoring indicates the presence of Giardia 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 handwashing practices are poor.

Why Save Water and How to Avoid Wasting It?

Although our system has an adequate amount of water to meet present and future demands, there are a number of reasons why it is important to conserve water:

- ◆ Saving water saves energy and some of the costs associated with both of these necessities of life;
- ◆ Saving water reduces the cost of energy required to pump water and the need to construct costly new wells, pumping systems and water towers; and
- ◆ Saving water lessens the strain on the water system during a dry spell or drought, helping to avoid severe water use restrictions so that essential fire fighting needs are met.

You can play a role in conserving water by becoming conscious of the amount of water your household is using, and by looking for ways to use less whenever you can. It is not hard to conserve water. Conservation tips include:

- ◆ Automatic dishwashers use 15 gallons for every cycle, regardless of how many dishes are loaded.
- ◆ 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

Additional information is available from the EPA's SAFE DRINKING WATER HOTLINE (800-426-4791)

meter after 15 minutes, if it moved, you have a leak.

Table of Detected Contaminants

Contaminant ^{note}	Violation Yes/No	Date of Sample	Level Detected (Avg/Max) (Range)	Unit Measure	MCLG	Regulatory Limit (MCL, TT or AL)	Likely Source of Contamination
-----------------------------	------------------	----------------	----------------------------------	--------------	------	----------------------------------	--------------------------------

Microbiological Contaminants

Total Coliform ¹	NO	2019	None Detected	N/A	N/A	MCL=less than 5%of samples positive in any month	Naturally present in the environment
-----------------------------	----	------	---------------	-----	-----	--	--------------------------------------

Physical Parameters

Turbidity Distribution ²	NO	8/2019	.18 (.11-.18)	NTU	N/A	TT=<5NTU	Particles from corrosion of water mains
Turbidity Composite Filter Effluent ^{2a}	NO	6/2019	0.18 (.05-0.18)	NTU	N/A	TT=95% of samples<0.3 NTU	Particles introduced during the treatment process or too fine to filter completely

Inorganic Contaminants

Asbestos	NO	7/14	0 fibers>10um 1 fiber <10um	MFL	NA	7MFL>10um	Water Distribution Piping
Barium	NO	7/19	0.017	mg/l (ppm)	2	MCL-2.0mg/l	Erosion of natural products
Chloride	NO	7/08	16	mg/l (ppm)	NA	MCL-250 mg/l	Indicative of road salt infiltration or naturally occurring
Chromium	NO	7/2019	1.4	ug/l (ppb)	100	MCL-100 ug/l	Erosion of natural products
Copper ³	NO	6/2019 6/2019	0.41 (0.044-0.74)	mg/l (ppm)	1.3	AL-1.3 mg/l	Corrosion of household plumbing
Fluoride	NO	2019	0.80 (0.63-0.99)	mg/l (ppm)	2.2	MCL-2.2 mg/l	Natural and added for prevention tooth decay
Lead ⁴	NO	6/2019 6/2019	12.0 (ND-61.0)	ug/l (ppb)	0	AL-15 ug/l	Corrosion of household plumbing
Manganese	NO	8/08	13	ug/l (ppb)	NA	MCL-300 ug/l	Naturally occurring
Nickel	NO	7/19	0.81	ug/l (ppb)	100	MCL- 100 ug/l	Naturally occurring and industrial activities
Nitrate	NO	7/19	0.49	mg/L (ppm)	NA	MCL-10 mg/l	Agricultural Runoff
Sodium	NO	8/08	14	mg/L (ppm)	NA	20mg/l	Naturally occurring
Sulfate	NO	7/08	23	mg/l (ppm)	NA	MCL-250 mg/l	Naturally occurring

Table of Detected Contaminants

Contaminant	Violation Yes/No	Date of Sample	Level Detected (Avg/Max) (Range)	Unit Measure	MCLG	Regulatory Limit (MCL, TT or AL)	Likely Source of Contamination
-------------	------------------	----------------	----------------------------------	--------------	------	----------------------------------	--------------------------------

Unregulated Contaminates Monitoring Rule 4 List 1 ⁵

Manganese	NO	3/6,6/5,9/4, 12/4	21.7 (13.7-34.1)	ug/l (ppb)	NA	NA	Naturally occurring
-----------	----	-------------------	------------------	------------	----	----	---------------------

Unregulated Contaminates Monitoring Rule 4 List 2 ⁵

HAA5	NO	3/6,6/5,9/4, 12/4	42.0 (20.6-71.4)	ug/l (ppb)	NA	MCL=60	Byproduct of drinking water chlorination
HAA6Br		3/6,6/5,9/4, 12/4	3.0 (2.4-3.8)	ug/l (ppb)			Byproduct of drinking water chlorination
HAA9		3/6,6/5,9/4, 12/4	45.0 (22.9-75.0)	ug/l (ppb)			Byproduct of drinking water chlorination
Total Organic Carbon Raw Water	NO	3/6,6/5,9/4, 12/4	4.1 (3.2-5.0)	mg/l (ppm)	NA	NA	Naturally produced in the human body

Radiological

Combined Radium-226 Radium-228	NO	7/14	1.2	pCi/L	NA	5 pCi/L	Erosion of natural deposits
--------------------------------	----	------	-----	-------	----	---------	-----------------------------

Disinfection Byproducts

Total Organic Carbon Raw water	NO	2019	4.2 (2.8-6.8)	mg/l (ppm)	NA	TT	Naturally present in the environment
Total Organic Carbon Filtered Water	NO	2019	2.1 (1.5-2.5)	mg/l (ppm)	NA	TT	Naturally present in the environment
Total Trihalomethanes Stage 2 Rule ⁶	NO	12/2019	79.3 (19.9-124.7)	ug/l (ppb)	NA	MCL=80	Byproduct of drinking water chlorination
Haloacetic Acids Stage 2 Rule ⁷	NO	12/2019	50.3 (19.3-71.0)	ug/l (ppb)	NA	MCL=60	Byproduct of drinking water chlorination

Table Notes:

1 – We collect more than 40 samples per month. Of 480 routine samples taken during 2019, 0 were tested positive for total coliform. Coliform are naturally occurring bacteria that are used as an indicator of the possibility that potentially harmful bacteria could be present.

2 - Turbidity is a measure of the cloudiness of the water. We test it because it is a good indicator of the effectiveness of our filtration system. Our highest average distribution turbidity measurement for the year was 0.18 and occurred in August 2019. State regulations require that the monthly average turbidity must always be below 5 NTU.

2a - The regulations require that 95% of the combined filter effluent turbidity levels recorded have measurements below 0.3 NTU. The maximum combined filter effluent recorded at the plant in 2018 was 0.18 NTU and occurred in June 2019. 100% of the combined filter effluent turbidities were below the MCL.

3 - The level (0.41 ppm) represents the 90th percentile of the 2019 sampling event where 30 samples were collected between June and September. 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, 30 samples were collected at your water system and the 90th percentile value was the fourth highest value. The action level for copper (1300 ppb) was not exceeded at any of the sites tested.

4 - The level (12 ppb) represents the 90th percentile of the 2019 sampling event where 30 samples were collected between June and September. The action level for lead (15 ppb) was exceeded at 3 of the 30 sites tested. Infants and children who drink water containing lead in excess of the action level could experience delays in their physical or mental development. Children could show slight deficits in attention span and learning abilities. Adults who drink this water over many years could develop kidney problems or high blood pressure. Infants and young children are typically more vulnerable to lead in drinking water than the general population. 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. If you are concerned about elevated lead levels in your home's water, you may wish to have your water tested and you should flush your tap for 30 seconds to 2 minutes before using your tap water. Additional information regarding lead in drinking water is available from the Safe Drinking Water Hotline (1-800-426-4791).

Additional information is available from the EPA's SAFE DRINKING WATER HOTLINE (800-426-4791)

5- Unregulated Contaminates values indicate that there are levels of contaminants detectable above the minimal readable range of the test, and their presence does not indicate a health concern. Unregulated contaminants do not have a MCL and are being monitored to determine future regulations. You may obtain the monitoring results by calling Aaron Harvill at (315)785-7845

6 - Stage 2 DBP Rule sampling began in November 2013. Stage 2 average represents the highest locational running average of all the sites sampled for THM's. Data is collected monthly and averaged to calculate the quarterly data value. Stage 2 sample ranges represent the array of results from all collected samples. Violation occurs when the average of the 4 most recent quarters for an individual site exceed 80.0 ppb.

7 - Stage 2 DBP Rule sampling began in November 2013. Stage 2 average represents the highest locational running average of all the sites sampled for HAA5's. Data is collected monthly and averaged to calculate the quarterly data value. Stage 2 sample ranges represent the array of results from all collected samples. Violation occurs when the average of the 4 most recent quarters for an individual site exceed 60.0 ppb.

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 longer than 10 micrometers.

WHAT DOES THIS INFORMATION MEAN?

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 New York State requirements.

Lead: It should be noted that the action level for lead was not exceeded in the 2019 samples. However; we are still required to present the following information on lead in drinking water due to previous detections while still maintaining compliance:

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 in your home may be higher than at other homes in the community as a result of materials used in your home's plumbing. The City of Watertown Water Department 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>.

The City of Watertown is currently required to sample 30 homes every year for lead and copper levels, but has applied for reduced sampling frequency. The latest round of sampling took place during the summer of 2018. Action levels (AL) are not exceeded as long as 90% of the samples tested contain less than 15 ppb for lead and 1.3 ppm for copper. At the time this is written the DOH has not notified the City of its 2019 sampling obligations.

IS OUR WATER SYSTEM MEETING OTHER RULES THAT GOVERN OPERATIONS?

We are extremely proud to inform you that our water meets or exceeds ALL applicable State and Federal drinking water standards. During 2019 our system was in compliance with ALL New York State operating, monitoring, and reporting requirements.

Where do TTHM's and HAA5's come from?

Trihalomethanes and Haloacetic acids are a groups of chemicals that are formed in drinking water during treatment by chlorine, which reacts with certain acids that are in naturally-occurring organic material (e.g., decomposing vegetation such as tree leaves, algae or other aquatic plants) in surface water sources such as rivers and lakes. The amount of Trihalomethanes and Haloacetic acids in drinking water can change from day to day, depending on the temperature, the amount of organic material in the water, the amount of chlorine added, and a variety of other factors. Drinking water is disinfected by public water suppliers to kill bacteria and viruses that could cause serious illnesses. Chlorine is the most commonly used disinfectant in New York State. For this reason, disinfection of drinking water by chlorination is beneficial to public health.

IMPORTANT INFORMATION ABOUT THM'S

Some studies suggest that people who drink chlorinated water (which contains trihalomethanes) or water containing elevated levels of trihalomethanes for long periods of time may have an increased risk for certain health effects. For example, some studies of people who drank chlorinated drinking water for 20 to 30 years show that long term exposure to disinfection by-products (including trihalomethanes) is associated with an increased risk for certain types of cancer. A few studies of women who drank water containing trihalomethanes during pregnancy show an association between exposure to elevated levels of trihalomethanes and small increased risks for low birth weights, miscarriages and birth defects. However, in each of the studies, how long and how frequently people actually drank the water, as well as how much trihalomethanes the water contained is not known for certain. Therefore, we do not know for sure if the observed increases in risk for cancer and other health effects are due to trihalomethanes or some other factor.

The individual trihalomethanes chloroform, bromodichloromethane and dibromochloromethane cause cancer in laboratory animals exposed to high levels over their lifetimes. Chloroform, bromodichloromethane and dibromochloromethane are also known to cause effects in laboratory animals after high levels of exposure, primarily on the liver, kidney, nervous system and on their ability to bear healthy offspring. Chemicals that cause adverse health effects in laboratory animals after high levels of exposure may pose a risk for adverse health effects in humans exposed to lower levels over long periods of time.

IMPORTANT INFORMATION ABOUT HAA5's

Some studies of people who drank chlorinated drinking water for 20 to 30 years show that long term exposure to disinfection by-products (possibly including haloacetic acids) is associated with an increased risk for certain types of cancer. However, how long and how frequently people actually drank the water as well as how much haloacetic acids the water contained is not known for certain. Therefore, we do not know for sure if the observed increased risk for cancer is due to haloacetic acids, other disinfection by-products, or some other factor.

Additional information is available from the EPA's SAFE DRINKING WATER HOTLINE (800-426-4791)

The individual haloacetic acids dichloroacetic acid and trichloroacetic acid cause cancer in laboratory animals exposed to high levels over their lifetimes. Dichloroacetic acid and trichloroacetic acid are also known to cause other effects in laboratory animals after high levels of exposure, primarily on the liver, kidney and nervous system and on their ability to bear healthy offspring. Chemicals that cause effects in animals after high levels of exposure may pose a risk to humans exposed to similar or lower levels over long periods of time.

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/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 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, the State Department of Health requires that we monitor fluoride levels on a daily basis to make sure fluoride levels in your water are maintained at a target of 0.7 mg/l. During 2018 monitoring showed fluoride levels in your water in the optimal range 100% of the time. None of the fluoride monitoring results showed fluoride at levels that approach the 2.2 mg/l MCL for fluoride.

SYSTEM IMPROVEMENTS

In 2019 City Water Distribution personnel supervised the installation of 517 feet of new 12" water main on Arsenal St, repaired 23 main breaks, installed 4 new hydrants and replaced 42 service connections under the Lead service line replacement grant. The annual flushing program was conducted during an eight week period between May and June. The water meter replacement program upgraded 436 residential and commercial water meters.

In 2020 the City plans to continue to replace lead connections under the lead service line replacement grant, clean the in ground reservoirs, and perform its annual hydrant flushing. The City will work towards resuming the use of soda ash to raise the alkalinity of the finished water. The coagulation basin off NYS Rte. 3 East will be dredged of alum sludge accumulation with the dredge purchased in August 2013.

CLOSING

Thank you for allowing us to continue to provide you and 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.