



2021 Annual Drinking Water Quality Report *Seneca Nation*



INTRODUCTION

To comply with Federal regulations, the Seneca Nation (SN), 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. Last year, your tap water met all federal 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 Federal standards.

The Environmental Health and Engineering division of the SN Health System, with cooperation from the Utility Departments on the Cattaraugus and Allegany Territories, is tasked with sampling, testing and monitoring drinking water quality.

If you have any questions about this report or concerning your drinking water, please contact Joel Merrill, PE, Civil Engineer or Rosalind Ground, both at (716) 945-5894.

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, EPA prescribes regulations which limit the amount of certain contaminants in water provided by public water systems. The FDA's regulations establish limits for contaminants in bottled water which must provide the same protection for public health.

Our water sources are:

- 1.) Cattaraugus Territory:
 - a. Groundwater Wells: drawn from two drilled wells which are located on Richardson Road. Richardson Road is one of the many systems that adds a low level of fluoride to drinking water in order to provide 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 levels that range from 0.8 mg/l (parts per million). Our fluoride addition facility is designed and operated to meet this optimal range. This source is also disinfected prior to being pumped to two storage tanks and distribution. This source resumed operation in early 2019.
 - b. Intercommunity Water main: Water is purchased in bulk from Erie County Water Authority (ECWA). The connection is located at Routes 5/20 in Irving. This water is fluoridated and disinfected by ECWA. ECWA's water quality report table is attached.

- 2.) Allegany Territory:
- a. Groundwater Wells: drawn from two drilled wells which are located on Hiller Rd in Jimersontown. This water is disinfected and pumped to an elevated storage tank prior to distribution.
 - b. Groundwater Wells: drawn from two drilled wells which are located on North Authority Road in Sullivan Hollow, Killbuck. This water is disinfected and filtered prior to usage.
 - c. Groundwater Wells: drawn from two drilled wells which are located on South Loop Road in Steamburg. This water is disinfected and pumped to an elevated storage tank prior to distribution.
 - d. City of Salamanca: Groundwater wells: Salamanca Board of Public Utilities (BPU) report is available at: <http://www.salamancabpu.com>

Each source has undergone a risk analysis to determine the source water's susceptibility to contamination. Except for farming on the Cattaraugus territory, all sources have a low risk of contamination. Source water assessments are available from SN Health. Efforts are underway to further protect SN water sources.

ARE THERE CONTAMINANTS IN OUR DRINKING WATER?

As the Federal regulations require, we routinely test your drinking water for numerous contaminants. These contaminants include: total coliform, inorganic compounds, nitrate, nitrite, lead and copper, volatile organic compounds, total trihalomethanes, haloacetic acids, and radiological compounds. A full list of the contaminants tested follows. The tables 1 through 5 presented below depict which compounds were detected in your drinking water. The regulations allow 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. See also Erie County Water Authority's water quality monitoring report supplement attached for their detected contaminants

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 SN Health System at (716) 945-5894.

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 level allowed by the EPA.

DO I NEED TO TAKE SPECIAL PRECAUTIONS?

Although our drinking water met or exceeded 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

The Cattaraugus system is one of the many drinking water systems that provide 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 0.8 mg/l. During 2021 monitoring showed that fluoride levels in your water were within 0.2 mg/l of the target level for 100% of the time. None of the monitoring results showed fluoride at levels that approach the 2.2 mg/l NY State Department of Health MCL for fluoride. EPA's Fluoride MCL is 4 mg/l and EPA's secondary standard for fluoride is 2 mg/l.

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.

SYSTEM IMPROVEMENTS

Various watermain projects are planned for 2022. These improvements are funded by SN, EPA, IHS drinking water grants and will provide secure storage and delivery of treated water in compliance with federal regulations. In addition, other projects are planned to protect aging infrastructure and provide treated water to areas not currently served.

CLOSING

Thank you for allowing us to continue to provide your family with quality drinking water this year. We ask that all our consumers help us protect our water sources, which are the heart of our community. Please call our office if you have questions.

TABLE 1
2021 Water Quality Monitoring Report-Annual Water Quality Report Supplement-CATTARAUGUS SYSTEM⁴

DETECTED CONTAMINANTS						
Metals, Inorganics, Physical Tests	Violation Yes/No	Sample Date	Level Detected	MCLG	MCL	Sources in Drinking Water
Barium	No	6/20	1.18 ug/l	2,000	MCL=2,000	Erosion of natural deposits, drilling and metal wastes
Chloride	No	7/19	20.1 mg/l	0	MCL=250	Naturally occurring in source water
Nitrate	No	6/20	1.55 mg/l	10	MCL=10	Agricultural runoff; natural sources
Chromium	No	2/26/19	<0.02 mg/l	0.1 mg/l	MCL=0.1	Erosion of natural deposits
Fluoride	No	2/19	0.69 mg/l	NA	2.2 mg/l	Erosion of natural deposits and added for dental health
Lead ³	No	Various (2019)	0.003 mg/l	0	AL=0.015	Household plumbing, corrosion, natural sources, wood preservatives
Copper ³	No	Various (2019)	0.135 mg/l	0	AL=1.300	Home plumbing corrosion, natural erosion

Organic Compounds	Violation Yes/No	Sample Date	Level Detected	MCLG	MCL	Sources in Drinking Water
Trihalomethanes	No	quarterly	LRAA=0.012 mg/l	NE	MCL=0.08	Disinfection By-Product
Haloacetic Acids	No	quarterly	LRAA=0.014 mg/l	NE	MCL=0.06	Disinfection By-Product

Radiological Parameters	Violation Yes/No	Sample Date	Level Detected	MCLG	MCL	Sources in Drinking Water
Radium 228	No	6/20	0.138 pCi/L	NE	NE	Natural sources
Radium 226	No	6/20	0.752 pCi/L	NE	NE	Natural sources

Microbiological Parameters ²	Violation Yes/No	Sample Date	Level Detected	MCLG	MCL	Sources in Drinking Water
Total coliform bacteria	No	Various	None	NE	5% of samples positive	Naturally present in the environment

¹ 90th percentile

² Coliform bacteria is an indicator for possible bacteriological contamination. No coliform bacteria were detected in any samples in 2021.

³ There were 20 lead and copper samples collected and analyzed in 2019. The minimum number of samples was 20 samples. Lead & Copper sampling will be conducted again in 2022.

⁴ Erie County Water Authority (ECWA) and Richardson Road wells were sources in 2021. Results indicate highest level detected in Richardson Rd source. See ECWA table for ECWA source results.

TABLE 2
2021 Water Quality Monitoring Report-Annual Water Quality Report Supplement-JIMERTONTOWN SYSTEM

DETECTED CONTAMINANTS						
Metals, Inorganics, Physical Tests	Violation Yes/No	Sample Date	Level Detected	MCLG	MCL	Sources in Drinking Water
Barium	No	10/2/18	259 ug/l	2,000	MCL = 2,000	Erosion of natural deposits, drilling and metal wastes
Chloride	No	9/29/15	115 mg/l	NE	250 mg/l	Naturally occurring in source water
Nitrate	No	9/14/21	1.71 mg/l	10	MCL = 10	Agricultural runoff; natural sources
Copper	No	12/1/16	0.07 mg/l ¹	AL=1.30	AL=1.30	Home plumbing corrosion, natural erosion
Lead	No	10/2/18	<0.002 mg/l ¹	AL = 0.015	AL = 0.015	Household plumbing, corrosion, natural sources, wood preservatives
Chromium	No	9/29/15	<0.010 mg/l	0.1 mg/l	0.1 mg/l	Erosion of natural deposits
Fluoride	No	10/2/18	<0.1	NA	2.2 mg/l	Erosion of natural deposits

Organic Compounds	Violation Yes/No	Sample Date	Level Detected	MCLG	MCL	Sources in Drinking Water
Trihalomethanes	No	2019	0.022 mg/l	NE	MCL=0.08	Disinfection By-Product
Haloacetic Acids	No	2019	0.008 mg/l	NE	MCL=0.06	Disinfection By-Product

Radiological Parameters	Violation Yes/No	Sample Date	Level Detected	MCLG	MCL	Sources in Drinking Water
Gross Alpha	No	9/29/15	3.37 ±1.8 pCi/l	0	MCL=15	Natural sources
Gross Beta	No	9/29/15	1.79 ±0.922 pCi/l	0	MCL=15	Natural sources
Radium 228	No	9/29/15	0.248 +0.331pCi/l	NE	NE	Natural sources
Radium 226	No	9/29/15	0.297 +0.513pCi/l	NE	NE	Natural sources
Microbiological Parameters ²	Violation Yes/No	Sample Date	Level Detected	MCLG	MCL	Sources in Drinking Water
Total coliform bacteria	No	Various	None	NE	5% of samples positive	Naturally present in the environment

¹ Maximum result

²Coliform bacteria is an indicator for possible bacteriological contamination. No coliform bacteria were detected in any samples in 2021.

TABLE 3
2021 Water Quality Monitoring Report-Annual Water Quality Report Supplement-STEAMBURG SYSTEM

DETECTED CONTAMINANTS						
Metals, Inorganics, Physical Tests	Violation Yes/No	Sample Date	Level Detected	MCLG	MCL	Sources in Drinking Water
Barium	No	10/1/18	230 ug/l	2,000	MCL = 2,000	Erosion of natural deposits, drilling and metal wastes
Chloride	No	9/29/15	21.7 mg/l	NE	250 mg/l	Naturally occurring in source water
Nitrate	No	9/14/21	1.94 mg/l	10	MCL = 10	Agricultural runoff; natural sources
Copper	No	9/28/16	0.09 mg/l ¹	AL=1.30	AL=1.30	Home plumbing corrosion, natural erosion
Lead	No	10/1/18	<0.02 mg/l ¹	AL = 0.015	AL = 0.015	Household plumbing, corrosion, natural sources, wood preservatives
Chromium	No	10/1/18	<0.007 mg/l	0.1 mg/l	0.1 mg/l	Erosion of natural deposits
Fluoride	No	10/1/18	<0.1 mg/l	2.2 mg/l	202 mg/l	Erosion of natural deposits

Organic Compounds	Violation Yes/No	Sample Date	Level Detected	MCLG	MCL	Sources in Drinking Water
Trihalomethanes	No	2018	0.004 mg/l	NE	MCL=0.08	Disinfection By-Product
Haloacetic Acids	No	2018	0.001 mg/l	NE	MCL=0.06	Disinfection By-Product

Radiological Parameters	Violation Yes/No	Sample Date	Level Detected	MCLG	MCL	Sources in Drinking Water
Gross Alpha	No	9/24/18	0.507 ±0.123 pCi/l	0	MCL=15	Natural sources
Gross Beta	No	9/24/18	0.995±0.78 pCi/l	0	MCL=15	Natural sources
Radium 228	No	9/24/18	0.104 ±0.384pCi/l	NE	NE	Natural sources
Radium 226	No	9/24/18	0.0767 ±0.390pCi/l	NE	NE	Natural sources

Microbiological Parameters ²	Violation Yes/No	Sample Date	Level Detected	MCLG	MCL	Sources in Drinking Water
Total coliform bacteria	No	Various	None	NE	5% of samples positive	Naturally present in the environment

¹ Maximum result

² Coliform bacteria is an indicator for possible bacteriological contamination. No coliform bacteria were detected in any samples in 2021.

TABLE 4: 2021 Water Quality Monitoring Report Supplement-SULLIVAN HOLLOW SYSTEM

DETECTED CONTAMINANTS						
Metals, Inorganics, Physical Tests	Violation Yes/No	Sample Date	Level Detected	MCLG	MCL	Sources in Drinking Water
Barium	No	6/24/19	120 ug/l	2,000	MCL = 2,000	Erosion of natural deposits, drilling and metal wastes
Chloride	No	9/29/15	3.32 mg/l	NE	250 mg/l	Naturally occurring in source water
Nitrate	No	9/14/21	0.05 mg/l	10	MCL = 10	Agricultural runoff; natural sources
Copper	No	8/18/15, 8/20/15	<0.01-0.103 mg/l, 0.0665 mg/l ¹ , 0 of 5 above AL	AL=1.30	AL=1.30	Home plumbing corrosion, natural erosion
Lead	No	8/18/15, 8/20/15	<0.001-0.0013 mg/l, 0.0012 mg/l ¹ , 0 of 5 above AL	AL = 0.015	AL = 0.015	Household plumbing, corrosion, natural sources, wood preservatives
Chromium	No	6/24/19	ND	0.1 mg/l	0.1 mg/l	Erosion of natural deposits
Fluoride	No	6/24/19	<0.2 mg/l	2.2 mg/l	202 mg/l	Erosion of natural deposits

Organic Compounds	Violation Yes/No	Sample Date	Level Detected	MCLG	MCL	Sources in Drinking Water
Trihalomethanes	No	2018	<0.01 mg/l	NE	MCL=0.08	Disinfection By-Product
Haloacetic Acids	No	2018	<0.01 mg/l	NE	MCL=0.06	Disinfection By-Product

Radiological Parameters	Violation Yes/No	Sample Date	Level Detected	MCLG	MCL	Sources in Drinking Water
Gross Alpha	No	9/29/15	0.948 \pm 1.21 pCi/l	0	MCL=15	Natural sources
Gross Beta	No	9/29/15	0.302 \pm 0.95 pCi/l	0	MCL=15	Natural sources
Radium 228	No	9/29/15	0.0938 \pm 0.339 pCi/l	NE	NE	Natural sources
Radium 226	No	9/29/15	0.00 \pm 0.325 pCi/l	NE	NE	Natural sources

Microbiological Parameters ²	Violation Yes/No	Sample Date	Level Detected	MCLG	MCL	Sources in Drinking Water
Total coliform bacteria	N	Various	None	NE	5% of samples positive	Naturally present in the environment

¹ 90th percentile

² Coliform bacteria is an indicator for possible bacteriological contamination. No coliform bacteria were detected in any samples in 2021.

TABLE 5: 2021 Water Quality Monitoring Report-Report Supplement-SHELTON PARK SYSTEM

DETECTED CONTAMINANTS						
Metals, Inorganics, Physical Tests	Violation Yes/No	Sample Date	Level Detected	MCLG	MCL	Sources in Drinking Water
Barium	No	6/24/19	154 ug/l	2,000	MCL = 2,000	Erosion of natural deposits, drilling and metal wastes
Chloride	No	4/1/15	78.8 mg/l	NE	250 mg/l	Naturally occurring in source water
Nitrate	No	9/14/21	1.09 mg/l	10	MCL = 10	Agricultural runoff; natural sources
Copper	No	12/21/18	0.04 mg/l, 0 of 5 above AL	AL=1.30	AL=1.30	Home plumbing corrosion, natural erosion
Lead	No	12/21/18	0.003 mg/l, 0 of 5 above AL	AL = 0.015	AL = 0.015	Household plumbing, corrosion, natural sources, wood preservatives
Chromium	No	6/24/19	0.009 mg/l	0.1 mg/l	0.1 mg/l	Erosion of natural deposits
Fluoride	No	4/1/15	<0.1 mg/l	2.2 mg/l	202 mg/l	Erosion of natural deposits

Organic Compounds	Violation Yes/No	Sample Date	Level Detected	MCLG	MCL	Sources in Drinking Water
Trihalomethanes	No	2018	<0.01 mg/l	NE	MCL=0.08	Disinfection By-Product
Haloacetic Acids	No	2018	<0.01 mg/l	NE	MCL=0.06	Disinfection By-Product

Radiological Parameters	Violation Yes/No	Sample Date	Level Detected	MCLG	MCL	Sources in Drinking Water
Gross Alpha	No	4/1/15	2.23 pCi/l	0	MCL=15	Natural sources
Gross Beta	No	4/1/15	1.85 pCi/l	0	MCL=15	Natural sources
Radium 228	No	4/1/15	-0.34 pCi/l	NE	NE	Natural sources
Radium 226	No	4/1/15	0.1 pCi/l	NE	NE	Natural sources

Microbiological Parameters ²	Violation Yes/No	Sample Date	Level Detected	MCLG	MCL	Sources in Drinking Water
Total coliform bacteria	N	Various	None	NE	5% of samples positive	Naturally present in the environment

¹ 90th percentile

² Coliform bacteria is an indicator for possible bacteriological contamination. No coliform bacteria were detected in any samples in 2021.

ABBREVIATIONS AND TERMS

AL = Action Level: the concentration of a contaminant which, when exceeded, triggers treatment or other requirements which a water system must follow.

CFU/100 ml = Colony Forming Units per 100 milliliters

MCL=Maximum Contaminant Level: the highest level of a contaminant allowed in a drinking water

MCLG= Maximum contaminant level goal: the level of contaminant in a drinking water below which there is no known or expected risk

MFL = Million fibers/liter (Asbestos)

Mg/liter = milligrams per liter (parts per million)

MRDL = Maximum Residential Disinfectant Level: the highest level of a disinfectant allowed in drinking water. There is convincing evidence that addition of 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

Mrem/yr = millirems per year

uS/cm= Microseimens per centimeter (a unit of conductivity measurement)

ND= Not detected: absent or present at less than testing method detection limit

Ng/liter= nanograms per liter = parts per trillion

NE= Not Established

NR= not regulated

NTU= Nephelometric turbidity Units

pCi/L= Picocuries per liter

LRAA= Location Running Annual Average

SU = Standard Units (ph measurement)

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

Ug/liter (ug/L) = micrograms per liter (parts per billion)

Variances and Exemption = State or EPA permission not to meet an MCL or treatment techniques under certain conditions.

< = less than

>= less than or equal to

TYPES OF CONTAMINANTS

**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 storm water 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 urban storm water runoff, agricultural and residential uses

**Organic Chemical Contaminants*, including synthetic and volatile organic chemicals, which are by-products of the industrial processes and petroleum production, and can also, come from gas stations, urban storm water runoff, and septic systems

**Radioactive Contaminants*, which can be naturally occurring or be the result of oil and gas production and mining activities

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DETECTED CONTAMINANTS

CONTAMINANT	VIOLATION YES/NO	DATE OF SAMPLE	LEVEL DETECTED (Avg/Max); (Range)	UNIT MEASUREMENT	MCLG	REGULATORY LIMIT (MCL, TT OR AL)	LIKELY SOURCE OF CONTAMINATION
Inorganic Contaminants & Physical Tests							
Barium	No	11/21	0.0163-0.0190 mg/L; Average=0.018mg/L	mg/L	2.0 mg/L	2.0 mg/L	Erosion of natural deposits; runoff from orchards; runoff from electronics and production wastes.
Chloride	No	6/21	13.1-28.0 mg/L; Average=19.0 mg/L	mg/L	NE	250 mg/L	Naturally occurring in source water.
Chlorine	No	10/21	0.55-1.99 mg/L; Average=1.44 mg/L	mg/L	NA	MRDL=4.0 mg/L	Added for disinfection.
Copper ²	No	6/19	ND-84 ug/L; 90 th percentile=36 ug/L, 0 of 50 above AL	ug/L	1300 ug/L	1300 ug/L	Home plumbing corrosion; natural erosion.
Fluoride	No	1/21	0.20-0.95 mg/L; Average=0.65 mg/L	mg/L	NA	2.2 mg/L	Added to water to prevent tooth decay.
Lead ³	No	6/19	ND-284 ug/L; 90 th percentile =12.6 ug/L, 4 of 50 above AL	ug/L	0 ug/L	15 ug/L	Home plumbing corrosion; natural erosion.
Nickel	No	11/21	0.713-0.822 ug/L; Average=0.768 ug/L	ug/L	NE	NR	Nickel enters ground water and surface water by dissolution of rocks and soils, from atmospheric fall out; from biological decay and from waste disposal.
Manganese	No	2/21	0.0-16.1 ug/L; Average=3.48 ug/L	ug/L	NE	NR	Naturally occurring, indication of landfill contamination.
pH	No	3/21	7.32-8.49; Average=7.97	SU	NE	NR	Naturally occurring; adjusted for corrosion control.
Distribution System Turbidity	No	2/21	0.067-8.6 NTU; Average=0.24 NTU	NTU	NE	TT-5 NTU	Soil runoff
Entry Point Turbidity ¹	No	5/20	0.172 NTU highest level detected; Lowest monthly % <0.30 NTU=100%	NTU	NTU	NTU	Soil runoff
Synthetic Organic Contaminants							
Bis(2-ethylhexyl) phthalate	No	11/21	0.74 – 1.0 ug; Average=0.87 ug/L	ug/L	0 ug/L	MCL	Used in plastic products such as PVC, plastic toys, vinyl upholstery, adhesives and coatings. Compound likely to be released to the environment during production & waste disposal of these products. Also used in inks, pesticides, cosmetics and vacuum oil.
Disinfection By-products							
Total Trihalomethanes	No	8/20	15-79 ug/L; LRAA = 57 ⁴	ug/L	NE	LRAA = 80	By-product of water disinfection (chlorination)
Total Haloacetic Acids	No	2/20	5-38 ug/L; LRAA = 31 ⁴	ug/L	NE	LRAA = 60	By-product of water disinfection (chlorination)
Radiological Contaminants							
Radium 228	No	7/19	ND	pCi/L	NE	NE	Erosion of natural deposits.
Combined Radium 226/228	No	7/19	ND	pCi/L	0	5.0	Erosion of natural deposits.
Cryptosporidium & Giardia							
	Violation Yes/No	Sample Date	Number of Samples Testing Positive <i>Cryptosporidium</i>	Number of Samples Testing Positive <i>Giardia</i>	Number of Samples Tested		
Source Water	No	1/17	2	0	6		

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1 – 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. State regulations require that turbidity must always be below 1 NTU in the combined filter effluent. The regulations require that 95% of the entry point turbidity samples collected have measurements below 0.3 NTU. Our highest single system turbidity measurement, 0.172 NTU, for the year occurred in May 2021.

2 – The level presented represents the 90th percentile of the 50 sites tested. A percentile is a value on a scale of 100 that indicates the percent of a distribution that is equal to or below it. The 90th percentile is equal to or greater than 90% of the copper values detected at your water system. In this case, 50 samples were collected at your water system and the 90th percentile value was the sixth highest sample at 36 ug/L. The second highest sample was the fourth highest with a value of 41 ug/L. The action level for copper was not exceeded at any of the sites tested.

3 – The 90th percentile value was the sixth highest sample at 12.6 ug/L. The second highest sample was the fifth highest with a value of 13 ug/L. The action level for lead was exceeded at two of the sites tested, because samples were taken following a lead service line replacement.

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

Definitions and Abbreviations:

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 more than 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 in one trillion parts of liquid (parts per trillion - ppt).

Picocuries per liter (pCi/L): A measure of the radioactivity in water.

AL = Action Level: The concentration of the highest contaminant

LRAA = Locational Annual Running Average

ND = Not Detected: Laboratory analysis indicates the constituent is not present

NE = Not Established

NA = Not Applicable

SU = Standard Units

TT = Treatment Technique

ERIE COUNTY WATER AUTHORITY

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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 the level allowed by the State.

IS OUR WATER SYSTEM MEETING OTHER RULES THAT GOVERN OPERATIONS?

During 2021, 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 used filtration methods cannot guarantee 100 percent removal. During 2017, as part of our routine sampling, 6 samples were collected from Lake Erie and the Niagara River and were analyzed for *Cryptosporidium* oocysts. Of these samples, none were positive for *Cryptosporidium*. 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, six samples were collected and analyzed for *Giardia* cysts. Of these samples, two were confirmed positive. Therefore, our testing 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 hand washing practices are poor.

INFORMATION ON RADON

Radon is a naturally occurring radioactive gas found in soil and outdoor air that may also be found in drinking water and indoor air. Some people exposed to elevated radon levels over many years in drinking water may have an increased risk of getting cancer. The main risk is lung cancer from radon entering indoor air from soil under homes.

In 2019, we collected a sample from each water treatment plant that were analyzed for radon. The results showed no detection of the radiological parameters. For additional information call your state radon program (1-800-458-1158) or call EPA's Radon Hotline (1-800-SOS-Radon).

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).

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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 2021, monitoring showed that fluoride levels in your water were within 0.2 mg/l of the target level for 99% of the time.

INFORMATION ON UNREGULATED CONTAMINANTS

COMPOUNDS TESTED FOR BUT NOT DETECTED				
Arsenic	Alachlor	Di-n-butyl phthalate	Metribuzin	Radium 226
4-Androstene-3,17-dione	Aldicarb	Di(2-ethylhexyl) adipate	Oxamyl (Vydate)	1,1-Dichloroethylene
Baygon	Aldicarb Sulfone	Dibromochloropropane	Oxyfluorfin	cis-1,2-Dichloroethylene
2-Chlorotoluene	Aldicarb Sulfoxide	Dibromomethane	PCB 1016	trans-1,2-Dichloroethylene
4-Chlorotoluene	Aldrin	Dicamba	PFDA	1,2-Dichloropropane
17beta-Estradiol	alpha -BHC	Dichlorodifluoromethane	PFDoA	1,3-Dichloropropane
17alpha-Ethynyl estradiol	Anatoxin-a	Dieldrin	PFHxA	2,2-Dichloropropane
2,4-D	Asbestos	Isopropylbenzene	PFTA	1,1-Dichloropropene
1,3 Butadiene	Atrazine	p-Isopropyltoluene	PFTTrDA	cis-1,3-Dichloropropene
1,2-Dichlorobenzene	Benzene	Lindane	PFUnA	trans-1,3-Dichloropropene
1,3-Dichlorobenzene	Benzo(a)pyrene	Mercury	Permethrin	1,4-Dioxane
1,4-Dichlorobenzene	Chlorpyrifos	Methiocarb	Pichloram	3-Hydroxycarbofuran
1,1-Dichloroethane	Chromium, Total	Methomyl	Profenofos	2,3,7,8-TCDD (Dioxin)
1,2-Dichloroethane	Cobalt	Methoxychlor	Propachlor	2,4,5-TP (Silvex)
1,2,3-Trichloropropane	Cyanide	MTBE	Propylene Glycol	1,1,1,2-Tetrachloroethane
1,2,4-Trimethylbenzene	Cylindrospermopsin	Methylene Chloride	n-Propylbenzene	1,1,2,2-Tetrachloroethane
1,3,5-Trimethylbenzene	Dalapon	Metolachlor	Quinoline	1,2,3-Trichlorobenzene

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COMPOUNDS TESTED FOR BUT NOT DETECTED (continued)

1,2,4-Trichlorobenzene	Di-Chlorodifluoromethane	Hexachlorobenzene	N-E-t-FOSAA	
1,1,1-Trichloroethane	Chloroethane	Hexachlorobutadiene	N-MeFOSAA	
1,1,2-Trichloroethane	Chloromethane	Hexachlorocyclopentadiene	HFPO-DA	
Beryllium	Dimethipin	PCB 1221	Selenium	
Bromide	Dinoseb	PCB 1232	Simazine	
Bromobenzene	Diquat	PCB 1242	Styrene	
Bromochloromethane	Endothall	PCB 1248	Tebuconazole	
Bromomethane	Endrin	PCB 1254	Tetrachloroethylene	
Butachlor	Equillin	PCB 1260	Thallium	
Butylated hydroxyanisole	Estriol	Pentachlorophenol	Toluene	
n-Butylbenzene	Estrone	Perfluorobutanesulfonic acid	o-Toluidine	
sec-Butylbenzene	Ethoprop	Perfluoroheptanoic acid	Total Mircocystin	
t-Butylbenzene	Ethylbenzene	Perfluorohexanesulfonic acid	Toxaphene	
Cadmium	Ethylene Dibromide (EDB)	Perfluoronanoic acid	Tribufos	
Carbaryl	Glyphosate	Perfluorooctane sulfonate	Trichloroethylene	
Carbofuran	Gross Alpha Particles	Perfluorooctanoic acid	Trichlorofluoromethane	
Carbon Tetrachloride	Gross Beta Particles	11Cl-PF3OUDS	Vinyl Chloride	
Chlordane	Heptachlor	9CL-PF30NS	Xylenes (o,m and p)	
Chlorobenzene	Heptachlor Epoxide	ADONA		