

**ERIE COUNTY WATER AUTHORITY
2020 ANNUAL WATER QUALITY REPORT SUPPLEMENT**



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							
Antimony	No	7/20	0.0– 0.247 ug/L; Average=0.12 ug/L	ug/L	6.0 ug/L	6.0 ug/L	Discharge from petroleum refineries; fire retardant; ceramics; electronics; solder
Barium	No	7/20	0.0180-0.0185 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	6/20	16.3-28.1 mg/L; Average=19.7 mg/L	mg/L	NE	250 mg/L	Naturally occurring in source water
Chlorine	No	3/20	0.57-1.87 mg/L; Average=1.40 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	2/20	0.20-1.8, mg/L; Average 0.67 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	7/20	0.753-0.860 ug/L; Average=0.806 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	8/18	0.89-6.2 ug/L; Average=2.1 ug/L	ug/L	NE	NR	Naturally occurring, indication of landfill contamination
pH	No	8/20	7.36-8.32; Average=7.99	SU	NE	NR	Naturally occurring; adjusted for corrosion control
Distribution System Turbidity	No	10/20	0.07-3.06 NTU; Average = 0.18 NTU	NTU	NE	TT-5 NTU	Soil runoff
Entry Point Turbidity ¹	No	7/20	0.218 NTU highest level detected; Lowest monthly % <0.30 NTU=100%	NTU	NTU	NTU	Soil runoff
Synthetic Organic Contaminants							
PFOS	No	2/20	2.0 ng/L	ng/L	NA	10 ng/L	Released into the environment through widespread use in commercial and industrial applications
Microbiological Contaminants							
Total Coliform Bacteria	No	9/20	One positive sample	NA	NA	5% of samples positive	Naturally present in the environment
<i>E. coli</i>	No	ND	ND	NA	NA	Any positive sample	Human and animal fecal waste
Disinfection By-products							
Total Trihalomethanes	No	8/20	14-89 ug/L; LRAA = 64 ⁴	ug/L	NE	LRAA = 80	By-product of water disinfection (chlorination)
Total Haloacetic Acids	No	2/20	7-55 ug/L; LRAA = 32 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

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<i>Cryptosporidium & Giardia</i>					
	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

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, 0.218 NTU, for the year occurred in July, 2020.

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 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 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

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

NE = Not Established

NA = Not Applicable

SU = Standard Units

TT = Treatment Technique

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 2020, 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, 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).

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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 on a daily basis to make sure fluoride is maintained at a target level of 0.7 mg/L. During 2020, monitoring showed that fluoride levels in your water were within 0.2 mg/l of the target level for 95% of the time.

INFORMATION ON UNREGULATED CONTAMINANTS

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

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COMPOUNDS TESTED FOR BUT NOT DETECTED (continued)

1,1-Dichloroethylene	Beryllium	Dimethipin	PCB 1221	Selenium
cis-1,2-Dichloroethylene	Bromide	Dinoseb	PCB 1232	Simazine
trans-1,2-Dichloroethylene	Bromobenzene	Diquat	PCB 1242	Styrene
1,2-Dichloropropane	Bromochloromethane	Endothall	PCB 1248	Tebuconazole
1,3-Dichloropropane	Bromomethane	Endrin	PCB 1254	Tetrachloroethylene
2,2-Dichloropropane	Butachlor	Equillin	PCB 1260	Thallium
1,1-Dichloropropene	Butylated hydroxyanisole	Estriol	Pentachlorophenol	Toluene
cis-1,3-Dichloropropene	n-Butylbenzene	Estrone	Perfluorobutanesulfonic acid	o-Toluidine
trans-1,3-Dichloropropene	sec-Butylbenzene	Ethoprop	Perfluoroheptanoic acid	Total Mircocystin
1,4-Dioxane	t-Butylbenzene	Ethylbenzene	Perfluorohexanesulfonic acid	Toxaphene
3-Hydroxycarbofuran	Cadmium	Ethylene Dibromide (EDB)	Perfluoronanoic acid	Tribufos
2,3,7,8-TCDD (Dioxin)	Carbaryl	Glyphosate	Perfluorooctane sulfonate	Trichloroethylene
2,4,5-TP (Silvex)	Carbofuran	Gross Alpha Particles	Perfluorooctanoic acid	Trichlorofluoromethane
1,1,1,2-Tetrachloroethane	Carbon Tetrachloride	Gross Beta Particles	11Cl-PF3OUDS	Vinyl Chloride
1,1,2,2-Tetrachloroethane	Chlordane	Heptachlor	9CL-PF30NS	Xylenes (o,m and p)
1,2,3-Trichlorobenzene	Chlorobenzene	Heptachlor Epoxide	ADONA	
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	