



ERIE COUNTY WATER AUTHORITY

2013 WATER QUALITY MONITORING REPORT - ANNUAL WATER QUALITY REPORT SUPPLEMENT



DETECTED CONTAMINANTS						
Metals, Inorganics, Physical Tests	Violation Yes/No	Sample Date (or date of highest detected)	MCL	MCLG	Level Detected	Sources in Drinking Water
Barium	No	8/13	2 mg/liter	NE	0.022 - 0.022 mg/liter ; Average = 0.022	Erosion of natural deposits; drilling and metal wastes
Chloride	No	3/13	250 mg/liter	NE	16 - 30 mg/liter ; Average = 20	Naturally occurring in source water
Chlorine	No	6/13	MRDL = 4.0 mg/liter	MRDLG = 4 mg/liter	<0.20 - 2.20 mg/liter; Average = 0.76	Added for disinfection
Copper	No	7/13	1.3 mg/liter (AL)	0 mg/liter (AL)	0.003 - 0.10 mg/liter, 90th percentile 0.04 mg/liter, 0 of 63 above AL	Home plumbing corrosion; natural erosion
Chromium	No	8/13	0.1 mg/liter	0.1 mg/liter	0.0013 - 0.0013 mg/liter; Average = 0.0013	Erosion of natural deposits; discharges from steel and pulp mills
Fluoride ¹	No	5/13	2.2 mg/liter	2.2 mg/liter	0.6 - 1.2 mg/liter; Average = 0.96, 99 % in optimum range 0.8 - 1.2	Added to water to prevent tooth decay
Lead ²	No	7/13	15 ug/liter (AL)	0 ug/liter (AL)	ND - 82 ug/liter, 90th percentile = 2 ug/liter, 1 of 63 above AL	Home plumbing corrosion; natural erosion
Nitrate	No	8/13	10 mg/liter	10 mg/liter	0.05 - 0.07 mg/liter; Average = 0.06	Runoff from fertilizer use
pH	No	12/13	NR	NE	7.25 - 8.35; Average 7.84 SU	Naturally occurring; adjusted for corrosion control
Turbidity ³	No	12/13	TT	NE	0.23 NTU highest detected; 100% lowest monthly % < 0.30 NTU	Soil runoff

¹ 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, the addition of fluoride is very effective means of preventing cavities. To ensure that the fluoride supplement in your water provides optimal dental protection, the New York State Department of Health (NYSDOH) requires that the Erie County Water Authority monitor fluoride levels on a daily basis. The NYSDOH recommends an optimal range of 0.8 to 1.2 mg/l (parts per million). During the addition of fluoride in 2013, monitoring showed fluoride levels in your water were in the optimal range 99% of the time. None of the monitoring results during fluoride addition showed fluoride at levels that approached the 2.2 mg/l MCL for fluoride.

² Lead is not present in the drinking water that is treated and delivered to your home. Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. The Erie County Water Authority 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 are available from the Safe Drinking Water Hotline (800-426-4791) or at www.epa.gov/safewater/lead. The level presented represents the 90th percentile of the 63 sites tested. A percentile is a value on a scale of 100 that indicates a percent of a distribution that is equal to or below it. The 90th percentile is equal to or greater than 90% of the lead or copper values detected in the water system. In this case, 63 samples were collected in the water system and the 90th percentile value for lead was the seventh highest value (2 ug/L).

³ Turbidity is a measure of the cloudiness of water. ECWA monitors turbidity because it is a good indicator of the effectiveness of our filtration system. Turbidity has no health effects. However, turbidity can interfere with disinfection and provide a medium for bacterial growth. State regulations require that the delivered water turbidity must always be below 1 NTU in the combined filter effluent. The regulations also require that 95% of the turbidity samples collected have measurements below 0.3 NTU.

Organic Compounds	Violation Yes/No	Sample Date (or date of highest detected)	MCL (ug/liter)	MCLG (ug/liter)	Level Detected (ug/liter)	Sources in Drinking Water
Total Trihalomethanes ⁴	No	8/13	LRAA = 80	NE	10 - 76 ug/liter; Highest LRAA = 63	By-product of water disinfection (chlorination)
Total Haloacetic Acids ⁵	No	2/13	LRAA = 60	NE	7 - 43 ug/liter; Highest LRAA = 36	By-product of water disinfection (chlorination)

⁴ Trihalomethanes are byproducts of the water disinfection process that occur when natural organic compounds react with the chlorine required to kill harmful organisms in the water. Some people who drink water containing trihalomethanes in excess of the MCL over many years may experience problems with their liver, kidneys, or central nervous system, and may have an increased risk of getting cancer. The level detected represents the highest single location's running annual average (63 ug/L).

⁵ Haloacetic acids are byproducts of the water disinfection process required to kill harmful organisms. Some people who drink water containing haloacetic acids in excess of the MCL over many years may have an increased risk of getting cancer. The level detected represents the highest single location's running annual average (36 ug/L).

Radiological Parameters	Violation Yes/No	Sample Date or Date of Highest Detected	MCL	MCLG	Level Detected	Sources in Drinking Water
Radium 228	No	4/13	NE	NE	0.99 - 1.10 pCi/L, Average = 1.05	Erosion of Natural Deposits
Combined Radium 226/228	No	4/13	5.0	0	1.15 - 1.25 pCi/L, Average = 1.2	Erosion of Natural Deposits

Microbiological Parameters	Violation Yes/No	Sample Date or Date of Highest Detected	MCL	MCLG	Level Detected	Sources in Drinking Water
Total Coliform Bacteria	No ⁷	11/13 ⁸	5% of samples positive	NE	0.5% = highest percentage of monthly positive samples	Naturally present in environment

⁷ A violation occurs when more than 5% of the total coliform samples collected per month are positive. No MCL violation occurred.

⁸ During November 2013, one distribution sample tested positive for total coliform, but negative for E.coli. Follow-up sampling, testing and reporting were performed as required by regulation, and the results were negative for both total coliform and E.coli.

CRYPTOSPORIDIUM AND GIARDIA	Violation Yes/No	Sample Date (or date of highest detected)	Number of Samples Testing Positive		Number of Samples Tested
			Giardia	Cryptosporidium	
Source Water	No	ND	0	0	22
Treated Drinking Water	No	ND	0	0	22

Cryptosporidium is a microscopic pathogen found in surface waters throughout the United States, as a result of animal waste runoff. It can cause abdominal infection, diarrhea, nausea, and abdominal cramps if ingested.

Our filtration process effectively removes *Cryptosporidium*. *Cryptosporidium* was not detected in any samples taken in 2013.

Giardia is a microbial pathogen present in varying concentrations in many surface waters. *Giardia* was not detected in any samples taken in 2013.

UNREGULATED SUBSTANCES †				
Parameter	MCL	MCLG	Average Level Detected (mg/liter)	Range (mg/liter)
Alkalinity	NR	NE	92	73 - 101
Calcium Hardness	NR	NE	90	73 - 116
Conductivity	NR	NE	309 uS/cm	156 - 403 uS/cm
Magnesium	NR	NE	9	9.0 - 9.1
MIB and Geosmin	NR	NE	2.3	ND - 7.6 ng/liter
Potassium	NR	NE	1.6	1.5 - 1.6
Sodium	NR	NE	13.0	12.9 - 13.0
Sulfate	NR	NE	20.8	20.6 - 21.0
Total Dissolved Solids	NR	NE	164	155-172
Total Organic Carbon	NR	NE	1.9	0.9 - 4.4

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 drinking water.

MCLG = Maximum Contaminant Level Goal: the level of a contaminant in 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 Residual Disinfectant Level: the highest level of a disinfectant allowed in drinking water. There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants.

MRDLG = Maximum Residual Disinfectant Level Goal: the level of a drinking water disinfectant below which there is no known or expected risk to health. MRDLGs do not reflect the benefits of the use of disinfectants to control microbial contamination

mrem/yr = millirems per year

uS/cm = Microsiemens 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 = Locational Running Annual Average

SU = Standard Units (pH measurement)

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

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

Variances and Exemptions = State or EPA permission not to meet an MCL or a treatment technique under certain conditions.

< = Less Than

≤ = Less Than or Equal To

TYPES OF CONTAMINANTS

Contaminants that may be present in source water before we treat it include:

**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 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.

Water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that the water poses a health risk.

Results presented here are from 2013 analyses or from the most recent year that tests were conducted in accordance with regulatory requirements. Some tests are not required to be performed on an annual basis. Information can be obtained upon request from the ECWA Water Quality Laboratory (716) 685-8571 or on the Internet at www.ecwa.org.

COMPOUNDS TESTED FOR BUT NOT DETECTED

2-Chlorotoluene	Bromochloromethane	Manganese
4-Chlorotoluene	Bromomethane	Mercury
2,4-D	Butachlor	Methomyl
1,2-Dichlorobenzene	n-Butylbenzene	Methoxychlor
1,3-Dichlorobenzene	sec-Butylbenzene	Methyl t-butyl ether (MTBE)
1,4-Dichlorobenzene	t-Butylbenzene	Methylene Chloride
1,1-Dichloroethane	Cadmium	Metolachlor
1,2-Dichloroethane	Carbaryl	Metribuzin
1,1-Dichloroethylene	Carbofuran	Nickel
cis-1,2-Dichloroethylene	Carbon Tetrachloride	N-nitroso-diethylamine (NDEA)
trans-1,2-Dichloroethylene	Chlordane	N-nitroso-dimethylamine (NDMA)
1,2-Dichloropropane	Chlorobenzene	N-nitroso-di-n-butylamine (NDBA)
1,3-Dichloropropane	Chloroethane	N-nitroso-di-n-propylamine (NDPA)
2,2-Dichloropropane	Chloromethane	N-nitroso-methylethylamine (NMEA)
1,1-Dichloropropene	Chromium	N-nitroso-pyrrolidine (NPYR)
cis-1,3-Dichloropropene	Cyanide	Oxamyl (Vydate)
trans-1,3-Dichloropropene	Dalapon	PCB 1016
3-Hydroxycarbofuran	Di(2-ethylhexyl) adipate	PCB 1221
2,3,7,8-TCDD (Dioxin)	Di(2-ethylhexyl) phthalate	PCB 1232
2,4,5-TP (Silvex)	Dibromochloropropane	PCB 1242
1,1,1,2-Tetrachloroethane	Dibromomethane	PCB 1248
1,1,2,2-Tetrachloroethane	Dicamba	PCB 1254
1,2,3-Trichlorobenzene	Dichlorodifluoromethane	PCB 1260
1,2,4-Trichlorobenzene	Dieldrin	Pentachlorophenol
1,1,1-Trichloroethane	Dinoseb	Pichloram
1,1,2-Trichloroethane	Diquat	Propachlor
1,2,3-Trichloropropane	Endothall	n-Propylbenzene
1,2,4-Trimethylbenzene	Endrin	Radium 226
1,3,5-Trimethylbenzene	Ethylbenzene	Selenium
Alachlor	Ethylene Dibromide (EDB)	Simazine
Aldicarb	Glyphosate	Styrene
Aldicarb Sulfone	Gross Alpha Particles	Tetrachloroethylene
Aldicarb Sulfoxide	Gross Beta Particles	Thallium
Aldrin	Heptachlor	Toluene
Aluminum	Heptachlor Epoxide	Toxaphene
Antimony	Hexachlorobenzene	Trichloroethylene
Arsenic	Hexachlorobutadiene	Trichlorofluoromethane
Atrazine	Hexachlorocyclopentadiene	Vinyl Chloride
Benzene	Iron	Xylenes
Benzo(a)pyrene	Isopropylbenzene	
Beryllium	p-Isopropyltoluene	
Bromobenzene	Lindane	