



# ERIE COUNTY WATER AUTHORITY

## 2007 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
Arsenic	No	12/07	10 ug/liter	NE	0.62 - 0.72 ug/liter, Average = 0.67	Erosion of natural deposits; orchard runoff, glass and electronic production waste
Asbestos	No	8/07	7 MFL	7 MFL	ND - 0.2 MFL, Average = ND	Erosion of natural deposits; decay of asbestos cement water mains
Barium	No	10/03	2 mg/liter	NE	0.021 mg/liter	Erosion of natural deposits; drilling and metal wastes
Chloride	No	12/07	250 mg/liter	NE	18 - 26 mg/liter ; Average = 19	Naturally occurring in source water
Chlorine	No	7/07	MRDL = 4.0 mg/liter	MRDLG = 4 mg/liter	<0.20 to 2.2 mg/liter; Average = 0.76	Added for disinfection
Fluoride	No	4/07	2.2 mg/liter	2.2 mg/liter	0.04 - 1.27 mg/liter; Average = 0.77	Added to water to prevent tooth decay
Lead <sup>1</sup>	No	9/07	15 ug/liter (AL)	0 ug/liter (AL)	ND-38 ug/liter, 90th percentile 4 ug/liter, 1 of 97 above AL	Home plumbing corrosion; natural erosion
Nitrate	No	12/07	10 mg/liter	10 mg/liter	0.21 to 0.24 mg/liter ; Average = 0.22	Runoff from fertilizer use
pH	No	7/07	NR	NE	6.8-8.8 SU; Average = 8.0	Naturally occurring; adjusted for corrosion control
Turbidity <sup>2</sup>	No	8/07	TT	NE	0.42 NTU highest detected; 97.3% was lowest monthly % < 0.30 NTU	Soil runoff

1 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 is available from the Safe Drinking Water Hotline (800-426-4791) or at <http://www.epa.gov/safewater/lead>.

2 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. Turbidity may indicate the presence of disease-causing organisms. These organisms include bacteria, viruses, and parasites that can cause symptoms such as nausea, cramps, diarrhea, and associated headaches.

On 8/09/07 the Van de Water Treatment Plant encountered a treatment upset which caused the combined effluent turbidity to exceed 0.3 ntu for a period of time. Corrective actions were taken throughout the day and into 8/10/07 until the plant turbidities were below the 0.3 ntu MCL. At no time did the plant readings exceed the maximum allowable treatment technique MCL. The combined filter turbidities were < 0.3 ntu 97.3% of the time for the month of August 2007.

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	No	8/07	RAA<80	NE	13-96 ug/liter ; RAA = 41.0	By-product of water disinfection (chlorination)
Total Haloacetic Acids	No	8/07	RAA<60	NE	5 - 54 ug/liter ; RAA = 19.9	By-product of water disinfection (chlorination)
Chloromethane <sup>2</sup>	No	12/07	5	NE	ND - 0.58 ug/liter; Average NC	Used in organic chemistry as an extractant and in industry as a solvent
1,2-Dichloroethane <sup>3</sup>	No	12/07	5	NE	ND - 0.61 ug/liter; Average NC	Discharge from industrial chemical factories
MIB and Geosmin	No	8/07	NR	NE	ND-4.5 ng/liter; Average < 2 (ND)	Taste and odor compounds from algae decomposition

3 Low levels of these compounds were detected in a sample taken 12/19/07 at the Sturgeon Point Treatment Plant. The low levels detected are not a violation of the MCL. Follow-up testing did not detect these compounds in the water. Some people who drink water containing 1,2-dichloroethane in excess of the MCL over many years may have an increased risk of getting cancer.

Radioactive Parameters	Violation Yes/No	Sample Date (or date of highest detected)	MCL	MCLG	Level Detected	Sources in Drinking Water
Gross Alpha	No	1/05	15.0 pCi/liter	0 pCi/liter	ND-1.7 pCi/liter	Erosion of natural deposits
Gross Beta	No	9/04	50** pCi/liter	0 pCi/liter	ND-2.2 pCi/liter	Decay of natural and man-made deposits
Combined Radium 226/Radium 228	No	1/05	5.0 pCi/liter	0 pCi/liter	ND	Erosion of natural deposits
Total Uranium	No	6/04	30 ug/liter	0 ug/liter	ND-0.48 ug/liter	Erosion of natural deposits

\*\* New York State Department of Health considers 50 pCi/liter to be the level of concern for beta particles.

Microbiological Parameters	Violation Yes/No	Sample Date (or date of highest detected)	MCL	MCLG	Level Detected	Sources in Drinking Water
Total Coliform Bacteria	No <sup>4</sup>	1/07	Any positive sample	0	0.47% = highest percentage of monthly positive;	Naturally present in environmer
E. coli Bacteria	No <sup>5</sup>	1/07	Any positive sample	0	2 <sup>6,7</sup>	Human and animal fecal waste

4 A violation occurs when more than 5% of the total coliform samples collected per month are positive.

5 A violation occurs when a total coliform positive sample is positive for *E.coli* and a repeat total coliform sample is positive or when a total coliform positive sample is negative for *E.coli* but a repeat total coliform sample is positive and the sample is also positive for *E.coli*.

6 On 1/16/07 a water sample taken at the Dodge Rd Elementary School was suspected of being positive for *E.coli*. Follow-up sampling and testing was performed and the results were negative for both total coliform *E.coli*. No MCL violation occurred.

7 On 4/04/07 the Erie County Water Authority was issued a reporting violation for failing to report a suspected positive *E.coli* result within the required time frame. The organism was detected in a water sample taken 3/31/07 at the Van de Water Treatment Plant. Follow-up sampling and testing were performed and the results were negative for both total coliform *E.coli*. No MCL violation occurred.

Giardia and Cryptosporidium	Violation Yes/No	Sample Date (or date of highest detected)	Number of Samples Testing Positive		Number of Samples Tested
			Giardia	Cryptosporidium	
Source Water	No	3/07	5	1	24
Treated Drinking Water	No	NA	0	0	24

*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 treated water samples taken in 2007.

*Giardia* is a microbial pathogen present in varying concentrations in many surface waters. In 2007 *Giardia* was detected in 5 of 24 raw source water samples but was not detected in any treated drinking water samples. *Giardia* is removed/inactivated through a combination of filtration and disinfection or by disinfection alone.

**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.

**UNREGULATED SUBSTANCES**

Parameter	Sample Date (or date of highest detected)	MCL	MCLG	Average Level Detected (mg/liter)	Range (mg/liter)
Alkalinity	12/07	NR	NE	90	81-94
Calcium Hardness	1/07	NR	NE	90	65-99
Total Dissolved Solids	7/07	NR	NE	161	143-176
Total Organic Carbon	9/07	NR	NE	2.1	0.34-5.58

Compounds or Elements Tested For But Not Detected			
2-Chlorotoluene	1,1,2-Trichloroethane	DCPA Monoacid degradate	Nitrite
4-Chlorotoluene	1,2,3-Trichloropropane	Dalapon	Nitrobenzene
2,4-D	1,1,2-Trichlorotrifluoroethane	Di(2-ethylhexyl) adipate	Oxamyl (Vydate)
4,4'-DDE	1,2,4-Trimethylbenzene	Di(2-ethylhexyl) phthalate	PCB 1016
DCPA monoacid degradate	1,3,5-Trimethylbenzene	Dibromomethane	PCB 1221
1,2-Dibromo-3-Chloropropane	Acetochlor	Dicamba	PCB 1232
DCPA monoacid degradate	Aldicarb	Dieldrin	PCB 1242
1,2-Dibromoethane	Aldicarb Sulfone	Dinoseb	PCB 1248
1,2-Dichlorobenzene	Aldicarb Sulfoxide	Diquat	PCB 1254
1,3-Dichlorobenzene	Aldrin	EPTC	PCB 1260
1,4-Dichlorobenzene	Antimony	Endothall	Pentachlorophenol
1,1-Dichloroethane	Atrazine	Endrin	Perchlorate
1,1-Dichloroethylene	Benzene	Ethylbenzene	Phosphate
cis-1,2-Dichloroethylene	Benzo(a)pyrene	Free Ammonia	Pichloram
trans-1,2-Dichloroethylene	Beryllium	Glyphosate	Propacchlor
1,2-Dichloropropane	Bromobenzene	Heptachlor	Propoxur
1,3-Dichloropropane	Bromochloromethane	Heptachlor Epoxide	n-Propylbenzene
2,2-Dichloropropane	Bromomethane	Hexachlorobenzene	Selenium
1,1-Dichloropropene	Butachlor	Hexachlorobutadiene	Silver
cis-1,3-Dichloropropene	n-Butylbenzene	Hexachlorocyclopentadiene	Simazine
trans-1,3-Dichloropropene	sec-Butylbenzene	Isopropylbenzene	Styrene
2,4-Dinitrotoluene	t-Butylbenzene	p-Isopropyltoluene	Terbacil
2,6-Dinitrotoluene	Cadmium	Lindane	Tetrachloroethylene
3-Hydroxycarbofuran	Carbaryl	Manganese	Thallium
1-Naphthol	Carbofuran	Mercury	Toluene
2,3,7,8-TCDD (Dioxin)	Carbon Tetrachloride	Methiocarb	Toxaphene
2,4,5-TP (Silvex)	Chlordane	Methomyl	Trichloroethylene
1,1,1,2-Tetrachloroethane	Chlorobenzene	Methoxychlor	Trichlorofluoromethane
1,1,2,2-Tetrachloroethane	Chloroethane	Methyl t-butyl ether (MTBE)	Vinyl Chloride
1,2,3-Trichlorobenzene	Chromium	Methylene Chloride	Xylenes
1,2,4-Trichlorobenzene	Copper	Metolachlor	Zinc
1,1,1-Trichloroethane	Cyanide	Metribuzin	
1,1,2-Trichloroethane	DCPA Diacid degradate	Molinate	
Alachlor	Dichlorodifluoromethane	Napthalene	

#### 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

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/liter = picocuries per liter

RAA = 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 = micrograms per liter (parts per billion)

Variations 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

Results are from 2007 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) 685-8570 or on the Internet [www.ecwa.org](http://www.ecwa.org).