ERIE COUNTY WATER AUTHORITY

2008 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	10/08	10 ug/liter	NE	0.71 - 0.78 ug/liter, Average = 0.74	Erosion of natural deposits; orchard runoff, glass, 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
Chloride	No	2/08	250 mg/liter	NE	17 - 39 mg/liter , Average = 21	Naturally occurring in source water
Chlorine	No	9/08	MRDL = 4.0 mg/liter	MRDLG = 4 mg/liter	<0.20 to 2.2 mg/liter, Average = 0.77	Added for disinfection
Fluoride[1]	No	5/08	2.2 mg/liter	2.2 mg/liter	0.11 - 1.71 mg/liter, Average = 0.97	Added to water to prevent tooth decay
Lead[2]	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	10/08	10 mg/liter	10 mg/liter	0.13 to 0.15 mg/liter, Average = 0.14	Runoff from fertilizer use
pH	No	10/08	NR	NE	6.4 - 8.7 SU, Average = 7.8	Naturally occurring; adjusted for corrosion control
Turbidity[3]	No	9/08	TT	NE	0.22 NTU highest detected; 100% was lowest monthly % < 0.3 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, fluoride is very effective in preventing cavities when present in drinking water at an optimal range from 0.8 to 1.2 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 Erie County Water Authority monitor fluoride levels on a daily basis. During the addition of fluoride in 2008, monitoring showed fluoride levels in your water were in the optimal range 100 % of the time. However, due to supply issues, the fluoride addition to your water was interrupted during the months of August, October and November. 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 is available from the Safe Drinking Water Hotline (800-426-4791) or at http://www.epa.gov/safewater/lead.

The level presented represents the 90th percentile of the 97 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, 97 samples were collected in the water system and the 90th percentile value for lead was the sixth highest value (4 ug/L). The action level for lead was exceeded at only one of the sites tested (38 ug/L). The action level for copper was not exceeded at any of the sites tested.

[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

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.

Our highest single turbidity measurement (0.22 NTU) for the year occurred on 9/14/08. State regulations require that turbidity must always be below 1 NTU. The regulations require that 95% of the turbidity samples collected have measurements below 0.3 NTU. All measurements met the treatment technique for turbidity. The levels recorded were always within the acceptable range allowed and did not constitute a treatment technique violation.

Organic Compounds	Violation Yes/No	Sample Date (or date of highest detected)	MCL (ug/liter)	MCL (ug/liter)	Level Detected (ug/liter)	*Sources in Drinking Water*
Total Trihalomethanes[4]	No	8/08	RAA <80	NE	19 - 85 ug/liter, RAA = 42 ug/liter	By-product of water disinfection (chlorination)
Total Haloacetic Acids[5]	No	8/08	RAA <60	NE	6 - 50 ug/liter, RAA = 19 ug/liter	By-product of water disinfection (chlorination)
MIB and Geosmin	No	9/08	NR	NE	ND - 4.5 ng/liter, Average < 2 (ND)	Taste and odor compounds from algae decomposition

[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 running annual average of quarterly results. This result (42 ug/L) is below the MCL.

[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 running annual average of quarterly results. This result (19 ug/L) is below the MCL.

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[6]	8/08[7]	>5% of samples positive	NE	0.81% = highest percentage of monthly positives	Naturally present in environment
E. coli Bacteria	No[8]	NA	Any confirmed positive sample	0	No samples tested positive in 2008	Human and animal fecal waste

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

[7] In August 2008, two of the 247 samples taken in the distribution system indicated the presence of total coliform. Follow-up sampling, testing and reporting were performed as required, and the results were negative for both total coliform & *E. coli* .

[8] 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*

During 2008, a total of only four samples tested positive for total coliform out of a total of 4,951 drinking water samples that were analyzed. Follow-up sampling, testing and reporting were performed as required by regulation, and the results were negative for both total coliform & *E.coli* in all cases. Since total coliforms were detected in less than 5% of the samples collected during any one month, the water system did not have any MCL violations. It should also be noted that *E. coli* , was not detected in any of these samples.

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	3/08	3	0	21
Treated Drinking Water	No	NA	0	0	21

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. No Cryptosporidium was detected in any samples taken in 2008.

Giardia is a microbial pathogen present in varying concentrations in many surface waters. In 2008 *Giardia* was detected in 3 of 21 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	MCL	MCLG	Level Detected (mg/liter)	Range (mg/liter)
Alkalinity	NR	NE	91	55 - 133
Calcium Hardness	NR	NE	94	73 - 140
Total Dissolved Solids	NR	NE	158	144 - 173
Total Organic Carbon	NR	NE	2.1	1.63 - 3.85

COMPOUNDS TESTED FOR BUT NOT DETECTED				
2-Chlorotoluene	1,1,2-Trichloroethane	Cadmium	Isopropylbenzene	Phosphate
4-Chlorotoluene	2,4,6-trinitrotoluene	Carbaryl	p-Isopropyltoluene	Pichloram
2,4-D	2,2',4,4'-tetrabromodiphenyl ether	Carbofuran	Lindane	Propacchlor
4,4'-DDE	2,2',4,4',5-pentabromodiphenyl ether	Carbon Tetrachloride	Manganese	Propoxur
DCPA monoacid degradate	2,2',4,4',5,5'-hexabromobiphenyl	Chlordane	Mercury	n-Propylbenzene
1,2-Dibromo-3-Chloropropane	2,2',4,4',5,5'-hexabromodiphenyl ether	Chlorobenzene	Methiocarb	Selenium
DCPA monoacid degradate	2,2',4,4',6-pentabromodiphenyl ether	Chloroethane	Methomyl	Silver
1,2-Dibromoethane	1,1,2-Trichloroethane	Chloromethane	Methoxychlor	Simazine
1,2-Dichlorobenzene	1,2,3-Trichloropropane	Chromium	Methyl t-butyl ether (MTBE)	Styrene
1,3-Dichlorobenzene	1,1,2-Trichlorotrifluoroethane	Copper	Methylene Chloride	Terbacil
1,4-Dichlorobenzene	1,2,4-Trimethylbenzene	Cyanide	Metolachlor	Tetrachloroethylene
1,1-Dichloroethane	1,3,5-Trimethylbenzene	DCPA Diacid degradate	Metolachlor ethane sulfonic acid(ESA)	Thallium
1,2-Dichloroethane	Acetochlor	DCPA Monoacid degradate	Metolachlor oxanilic acid (OA	Toluene
1,1-Dichloroethylene	Acetochlor ethane sulfonic acid	Dalapon	Metribuzin	Toxaphene
cis-1,2-Dichloroethylene	Acetochlor oxanilic acid	Di(2-ethylhexyl) adipate	Molinate	Trichloroethylene
trans-1,2-Dichloroethylene	Alachlor	Di(2-ethylhexyl) phthalate	Napthalene	Trichlorofluoromethane
1,2-Dichloropropane	Alachlor ethane sulfonic acid	Dibromomethane	Nitrite	Vinyl Chloride
1,3-Dichloropropane	Alachlor oxanilic acid	Dicamba	Nitrobenzene	Xylenes
2,2-Dichloropropane	Aldicarb	Dichlorodifluoromethane	N-nitroso-diethylamine (NDEA)	Zinc
1,1-Dichloropropene	Aldicarb Sulfone	Dieldrin	N-nitroso-dimethylamine (NDMA)	
cis-1,3-Dichloropropene	Aldicarb Sulfoxide	Dinoseb	N-nitroso-di-n-butylamine (NDBA)	
trans-1,3-Dichloropropene	Aldrin	Diquat	N-nitroso-di-n-propylamine (NDPA)	
1,3-dinitrobenzene	Antimony	EPTC	N-nitroso-methylethylamine (NMEA)	
2,4-Dinitrotoluene	Atrazine	Endothall	N-nitroso-pyrrolidine (NPYR)	
2,6-Dinitrotoluene	Benzene	Endrin	Oxamyl (Vydate)	
3-Hydroxycarbofuran	Benzo(a)pyrene	Ethylbenzene	PCB 1016	
1-Napthol	Beryllium	Free Ammonia	PCB 1221	
2,3,7,8-TCDD (Dioxin)	Bromobenzene	Glyphosate	PCB 1232	
2,4,5-TP (Silvex)	Bromochloromethane	Heptachlor	PCB 1242	
1,1,1,2-Tetrachloroethane	Bromomethane	Heptachlor Epoxide	PCB 1248	
1,1,2,2-Tetrachloroethane	Butachlor	Hexachlorobenzene	PCB 1254	
1,2,3-Trichlorobenzene	n-Butylbenzene	Hexachlorobutadiene	PCB 1260	
1,2,4-Trichlorobenzene	sec-Butylbenzene	Hexachlorocyclopentadiene	Pentachlorophenol	
1,1,1-Trichloroethane	t-Butylbenzene	Hexahydro-1,3,5-trinitro-1,3,5-triazine	Perchlorate	

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 (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

Results are from 2008 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 at *www.ecwa.org.*