

October-December 2002 Water Quarterly Report

Parameters Related to Microbiological Quality	MAC, IMAC or Minimum	Number of Samples	Number of Detectable Results	Sampling Date	Range	Adverse Results?	Typical Source of Contaminant
Turbidity	Mac 1.0 NTU	Continuous	Continuous	October 1/02- December 31/02	0.029-0.430 NTU	No	Indicates presence of particles in water due to process difficulties.
Filter # 1		Continuous	Continuous		0.031-0.364 NTU	No	
Filter # 2		Continuous	Continuous		0.030-0.499 NTU	No	
Filter # 3		Continuous	Continuous		0.039-0.642 NTU	No	
Filter # 4		Continuous	Continuous		0.021-0.454 NTU	No	
Plant Effluent Online		Continuous	Continuous		0.027-0.126 NTU	No	
Plant Effluent Lab.	92	92					
Free Chlorine Entering Distribution System	Indicator of adverse water quality if below 0.05mg/L	Continuous	Continuous	October 1/02- December 31/02	1.116-2.106 mg/L	No	Free chlorine entering distribution system must be high enough to maintain a minimum of 0.20 mg/L in all parts of the distribution system.
Plant Effluent Online		92	92	October 1/02- December 31/02	1.33-1.86 mg/L	No	
Plant Effluent Lab.							
Free Chlorine @ Sites Throughout Distribution System	Indicator of adverse water quality if below 0.05mg/L	331	331	October 1/02- December 31/02	0.01-1.67 mg/L	Yes. See summary.	
Microbiological Parameters	MAC , IMAC or Aesthetic Objective	Number of Samples	Number of Detectable Results	Sampling Date	Range	Adverse Results?	Typical Source of Contaminant
Total Coliforms	MAC = 0 *See Note	80	0	October 1/02- September 30/02	N/A	No	Inadequate filtration/disinfection.
Fecal Coliforms	MAC = 0 *See Note		0	October 1/02- September 30/02	N/A	No	Sewage Contamination.
E . Coli	MAC = 0 *See Note		0	October 1/02- September 30/02	N/A	No	Sewage Contamination.
Deterioration Indicators	MAC = 0 *See Note		0	October 1/02- September 30/02	N/A	No	Inadequate filtration/disinfection.
Heterotrophic Plate Count	MAC 500 Colonies/mL	29	11	October 1/02- December 31/02	0-64 colonies	No	Used to monitor disinfection efficiency at plant or water quality deterioration in system.

Note * Indicator of Adverse Water Quality if present in treated water.

Volatile Organics	MAC , IMAC or Aesthetic Objective	Detection Limit	Number of Samples	Sampling Date	Result	Exceedance ?	Typical Source of Contaminant
Benzene	MAC 5 ug/L	0.5 ug/L	1	November 12 / 02	<0.5 ug/L	No	Petroleum products, vehicle emissions, cigarette smoke.
CarbonTetrachloride	MAC 5 ug/L	0.5 ug/L	1	November 12 / 02	<0.5 ug/L	No	Industrial waste.
1,2-Dichlorobenzene	MAC 200 ug/L	0.5 ug/L	1	November 12 / 02	<0.5 ug/L	No	Used in specialty chemical blends (degreasing agents, dye carriers).
1,4-Dichlorobenzene	MAC 5 ug/L	0.5 ug/L	1	November 12 / 02	<0.5 ug/L	No	Synthetic material widely used in toilet pucks & moth balls.
1,2-Dichloroethane	IMAC 5 ug/L	0.5 ug/L	1	November 12 / 02	<0.5 ug/L	No	Used in production of vinyl chloride also as a solvent and fumigant.
1,1-Dichloroethelyne	MAC 14 ug/L	0.5 ug/L	1	November 12 / 02	<0.5 ug/L	No	Used in food packaging industry and textile industry.
Dichloromethane (Methylene Chloride)	MAC 50 ug/L	0.5 ug/L	1	November 12 / 02	<0.5 ug/L	No	Industrial paint stripper and degreasing agent.
Ethylbenzene	Aesthetic Objective 2.4 ug/L	0.5 ug/L	1	November 12 / 02	<0.5 ug/L	No	Component of gas octane booster also used in solvent based paint.
Monochlorobenzene (Chlorobenzene)	MAC 0.08 mg/L Aesthetic Objective/ 30 ug/L	0.5 ug/L	1	November 12 / 02	<0.5 ug/L	No	Used to produce ingredients for waxes paints, polishes, rubber,
Tetrachloroethylene	MAC 30 ug/L	0.5 ug/L	1	November 12 / 02	<0.5 ug/L	No	Solvent for dry cleaning and the metal cleaning industries.
Toluene	Aesthetic Objective 24 ug/L	0.5 ug/L	1	November 12 / 02	<0.5 ug/L	No	Petroleum products, and benzene derived products.
Total Trihalomethanes (current quarter)	See running average of four quarters below	1.0 ug/L	1	November 12 / 02	139 ug/L	N/A	Trihalomethanes are the most widely occurring synthetic organics found in chlorinated drinking water. They are caused by the action of chlorine with naturally occurring organics.
Total Trihalomethanes (Running Average)	MAC 100 ug/L	1.0 ug/L	Average of last four quarterly samples	November 12 / 02	151 ug/L	Yes. See summary.	
	*Based on a four quarter moving annual average			August 14 / 02			
				May 14 / 02			
				February 12 / 02			
Trichloroethylene (Trichloroethene)	MAC 50 ug/L	0.5 ug/L	1	November 12 / 02	<0.5 ug/L	No	Dry cleaning, metal degreasing, tetrachloroethylene production.
Vinyl Chloride	MAC 2 ug/L	0.5 ug/L	1	November 12 / 02	<0.5 ug/L	No	Used in making PVC.
m+p-Xylene	Aesthetic Objective 300 ug/L	1.0 ug/L	1	November 12 / 02	<1.0 ug/L	No	Industrial solvents, intermediate for dyes and organic synthesis, compound of paints, paint cleaners, and petroleum products.
o-Xylene	Aesthetic Objective 300 ug/L	0.5 ug/L	1	November 12 / 02	<0.5 ug/L	No	

Pesticides and PCBs	MAC , IMAC or Aesthetic Objective	Detection Limit	Number of Samples	Sampling Date	Result	Exceedance ?	Typical Source of Contaminant
Alachlor	IMAC 5 ug/L	0.1 ug/L	1	November 12 / 02	<0.1 ug/L	No	Herbicide when growing corn and soybeans/banned in 1985.
Aldicarb	MAC 9 ug/L	0.9 ug/L	1	November 12 / 02	<0.9 ug/L	No	Insecticide.
Aldrin + Dieldrin	MAC .7 ug/L	0.04 ug/L	1	November 12 / 02	<0.04 ug/L	No	Pesticides partially banned in Ontario in 1969 fully banned in 1994.
Atrazine + N-dealkylated metabolites	IMAC 5 ug/L	0.2 ug/L	1	November 12 / 02	<0.2 ug/L	No	Herbicide.
Azinphos -methyl	MAC 20 ug/L	0.1 ug/L	1	November 12 / 02	<0.1 ug/L	No	Insecticide.
Bendiocarb	MAC 40 ug/L	0.1 ug/L	1	November 12 / 02	<0.1 ug/L	No	Insecticide.
Bromoxynil	IMAC 5 ug/L	0.2 ug/l	1	November 12 / 02	<0.2 ug/l	No	Herbicide.
Carbaryl	MAC 90 ug/L	0.1 ug/L	1	November 12 / 02	<0.1 ug/L	No	Insecticide.
Carbofuran	MAC 90 ug/L	0.1 ug/L	1	November 12 / 02	<0.1 ug/L	No	Insecticide.
Chlordane(Total)	MAC 7 ug/L	0.3 ug/L	1	November 12 / 02	<0.3 ug/L	No	Insecticide.
Chlorpyrifos	MAC 90 ug/L	0.1 ug/L	1	November 12 / 02	<0.1 ug/L	No	Insecticide.
Cyanazine	IMAC 10 ug/l	0.1 ug/L	1	November 12 / 02	<0.1 ug/L	No	Herbicide.
Diazinon	MAC 20 ug/L	0.1ug/L	1	November 12 / 02	<0.1 ug/L	No	Insecticide.
Dicamba	MAC 120 ug/L	0.2 ug/L	1	November 12 / 02	<0.2 ug/L	No	Herbicide.
2,4-Dichlorophenol	MAC 900 ug/L	0.5 ug/L	1	November 12 / 02	<0.5 ug/L	No	The action of chlorine on phenolic precursors.
DDT & Metabolites	MAC 30 ug/L	0.4 ug/L	1	November 12 / 02	<0.4 ug/L	No	Insecticide.
2,4-D	IMAC 100 ug/L	0.2 ug/L	1	November 12 / 02	<0.2 ug/L	No	Herbicide.
Diclofop - methyl	MAC 9 ug/L	0.1 ug/L	1	November 12 / 02	<0.1 ug/L	No	Herbicide.
Dimethoate	IMAC 20 ug/L	0.1 ug/L	1	November 12 / 02	<0.1 ug/L	No	Insecticide.
Dinoseb	MAC 10 ug/L	0.2 ug/L	1	November 12 / 02	<0.2 ug/L	No	Herbicide.
Diquat	MAC 70 ug/L	7 ug/L	1	November 12 / 02	<7 ug/L	No	Herbicide.
Diuron	MAC 150 ug/L	15 ug/L	1	November 12 / 02	<15 ug/L	No	Herbicide.
Glyphosate	IMAC 280 ug/L	28 ug/L	1	November 12 / 02	<28 ug/L	No	Herbicide.
Heptachlor	MAC 3 ug/L	0.1 ug/L	1	November 12 / 02	<0.1 ug/L	No	Insecticide.
Heptachlor Epoxide	MAC 3 ug/L	0.1 ug/L	1	November 12 / 02	<0.1 ug/L	No	Insecticide.
Lindane(Total)	MAC 4 ug/L	0.1 ug/L	1	November 12 / 02	<0.1 ug/L	No	Insecticide.
Malathion	MAC 190 ug/L	0.1 ug/L	1	November 12 / 02	<0.1 ug/L	No	Insecticide.
Methoxychlor	MAC 900 ug/L	0.1 ug/L	1	November 12 / 02	<0.1 ug/L	No	Insecticide.
Metolachlor	IMAC 50 ug/L	0.1 ug/L	1	November 12 / 02	<0.1 ug/L	No	Herbicide.
Metribuzin	MAC 80 ug/L	0.1 ug/L	1	November 12 / 02	<0.1 ug/L	No	Herbicide.
Paraquat	10 ug/L 10 ug/L	1 ug/L	1	November 12 / 02	<1 ug/L	No	Herbicide.
Parathion	MAC 50 ug/L	0.1 ug/L	1	November 12 / 02	<0.1 ug/L	No	Insecticide.
Pentachlorophenol	MAC 60 ug/L	0.5 ug/L	1	November 12 / 02	<0.5 ug/L	No	Pesticides and wood preservatives.
Phorate	IMAC 2 ug/L	0.1 ug/L	1	November 12 / 02	<0.1 ug/L	No	Insecticide.
Picloram	IMAC 190 ug/L	0.2 ug/L	1	November 12 / 02	<0.2 ug/L	No	Herbicide.
PCBs	IMAC 3 ug/L	0.06 ug/L	1	November 12 / 02	<0.06 ug/L	No	Transformers.
Prometryne	IMAC 1 ug/L	0.1 ug/L	1	November 12 / 02	<0.1 ug/L	No	Herbicide.
Simazine	IMAC 10 ug/L	0.1 ug/L	1	November 12 / 02	<0.1 ug/L	No	Herbicide.
Temephos	IMAC 280 ug/L	0.1 ug/L	1	November 12 / 02	<0.1 ug/L	No	Insecticide.
Terbufos	IMAC 1 ug/L	0.1 ug/L	1	November 12 / 02	<0.1 ug/L	No	Insecticide.
2,3,4,6-Tetrachlorophenol	MAC 1 ug/L	0.5 ug/L	1	November 12 / 02	<0.5 ug/L	No	Wood preservative.
Triallate	MAC 230 ug/L	0.1 ug/L	1	November 12 / 02	<0.1 ug/L	No	Herbicide.
2,4,6-Trichlorophenol	MAC 5 ug/L	0.5 ug/L	1	November 12 / 02	<0.5 ug/L	No	Used in the manufacture of pesticides.
Trifluralin	IMAC 45 ug/L	0.1 ug/L	1	November 12 / 02	<0.1 ug/L	No	Herbicide.
2,4,5-T (2,4,5-Trichlorophenoxy acetic acid)	28 ug/L	0.2 ug/L	1	November 12 / 02	<0.2 ug/L	No	Herbicide.

Inorganics	MAC ,	Detection Limit	Number of samples	Sampling Date	Result	Exceedance ?	Typical Source
	IMAC or Aesthetic Objective						of Contaminant
Arsenic	IMAC 25 ug/L	1 ug/L	1	November 12 / 02	<1 ug/L	No	Mine drainage waters and leachates, also occurs naturally.
Barium	MAC 1000 ug/L	10 ug/L	1	November 12 / 02	10 ug/L	No	Limestone and dolomite.
Boron	IMAC 5000 ug/L	50 ug/L	1	November 12 / 02	<50ug/L	No	Antiseptic agents.
Cadmium	MAC 5 ug/L	0.1 ug/L	1	November 12 / 02	<0.1 ug/L	No	Electroplating wastes.
Chromium	MAC 50 ug/L	1 ug/L	1	November 12 / 02	<1 ug/L	No	Chlorination, older yellow paints, and water cooling systems.
Copper	Aesthetic Objective 1000 ug/L	1 ug/L	1	November 12 / 02	3 ug/L	No	Plumbing.
Fluoride	Optimum Level 0.5 mg/L-0.8 mg/L	0.03 mg/L	1	November 12 / 02	0.27 mg/L	No. See summary.	Natural or added to prevent tooth decay
Iron	Aesthetic Objective 300 ug/L	50 ug/L	1	November 12 / 02	<50 ug/L	No	Anaerobic decay in sediments and complex formations.
Lead	MAC 10 ug/L	1 ug/L	2	November 12 / 02	<1 ug/L	No	Corrosion of lead solder, some brass fittings or from lead pipes.
Manganese	Aesthetic Objective 50 ug/L	1 ug/L	1	November 12 / 02	<1 ug/L	No	Anaerobic decay processes in sediments.
Mercury	MAC 1 ug/L	0.1 ug/L	1	November 12 / 02	<0.1 ug/L	No	Air pollution, metal refining, and natural mineral deposits.
Nitrate	MAC 10 mg/L	0.03 mg/L	1	November 12 / 02	0.27 mg/L	No	Decayed plants or animals or from sewage.geological formations.
Nitrite	MAC 1.0 mg/L	0.02 mg/L	1	November 12 / 02	<0.02 mg/L	No	Unoxidized nitrate.
Selenium	MAC 10 ug/L	5 ug/L	1	November 12 / 02	<5 ug/L	No	Occurs naturally eg.weathering of rocks.
Sodium	Aesthetic Obj. 200.0 mg/L	0.005 mg/L	1	November 12 / 02	15.5 mg/L	No	Naturally occurring or through the addition of water treatment process
Uranium	MAC 100 ug/L	5 ug/L	1	November 12 / 02	<5 ug/L	No	Naturally occurring.