



Monroe County Water Authority

2017 Water Quality Monitoring Program Summary

Parameter				Shoremont WTP			Webster WTP			Corfu WTP			Hemlock WTP			ECWA		
				Source - Lake Ontario			Source - Lake Ontario			Source - Groundwater Well(s)			Source - Hemlock Lake			Source - Lake Erie		
	EPA / NYS MCL	EPA / NYS MCLG	UNITS	Average	Range	Samples in 2017	Average	Range	Samples in 2017	Average	Range	Samples in 2017	Average	Range	Samples in 2017	Average	Range	Samples in 2017
<u>Inorganics, Metals, Physical Parameters</u>																		
Aluminum	NS	NS	µg/L	47	24 - 98	4	72	20 - 180	4	14	ND - 56	4	6	ND - 22	4	126	42 - 270	4
Antimony	6	6	µg/L	ND		4	ND		4	ND		4	ND		4	ND		3
Arsenic	10	0	µg/L	ND		4	ND		4	ND		4	ND		4	ND		4
Barium	2	2	mg/L	0.022	0.02 - 0.024	4	0.022	0.019 - 0.028	4	0.128	0.1 - 0.16	4	0.016		1	0.02	0.019 - 0.021	3
Beryllium	4	4	µg/L	ND		4	ND		4	ND		4	ND		3	ND		3
Cadmium	5	5	µg/L	ND		4	ND		4	ND		4	ND		3	ND		3
Calcium	NS	NS	mg/L	34	33 - 35	4	35	33 - 39	4	62.3	52 - 75	4	26	24 - 27	4	33	31 - 35	4
Chromium	100	100	µg/L	ND		4	ND		4	ND		4	ND		4	ND		4
Copper (Distribution System Samples)	NS	NS	µg/L	ND		4	ND		4	9.5	ND - 16	4	5.6	3.3 - 7.7	3	ND		3
Copper (Customer Tap Samples)	AL* = 1300	1300	µg/L	94	5 - 500	53 (2015)	94	5 - 500	53 (2015)	119	7 - 550	20 (2015)	94	5 - 500	53 (2015)	119	7 - 550	20 (2015)
Cyanide	200	200	µg/L	ND		4	ND		4	ND		4	ND		4	ND		4
Fluoride	2.2	NA	mg/L	0.69	0.31 - 0.88	2179	0.69	0.03 - 0.93	2000	NR		NR	0.56	0.07 - 0.78	384	0.26	0.1 - 0.73	76
Iron	300	NA	µg/L	ND		4	ND		4	20.5	ND - 38	4	ND		4	ND		3
Lead (Distribution System)	NS	NS	µg/L	ND		4	ND		4	ND		4	ND		3	ND		4
Lead (Customer Tap Samples)	AL* = 15	0	µg/L	6	ND - 63	53 (2015)	6	ND - 63	53 (2015)	ND	ND - 3.8	20 (2015)	6	ND - 63	53 (2015)	ND	ND - 3.8	20 (2015)
Magnesium	NS	NS	mg/L	8.8	8.7 - 8.9	4	9.0	8.6 - 9.7	4	23.8	20 - 29	4	6.2	5.8 - 6.5	4	8.4	8.1 - 8.7	3
Manganese	300	NA	µg/L	ND		4	ND		4	ND		4	ND		3	ND		3
Mercury	2	2	µg/L	ND		4	ND		4	ND		4	ND		3	ND		3
Nickel	100	NA	µg/L	ND		4	ND		4	ND		4	ND		3	ND		3
Nitrate	10	10	mg/L	0.33	0.25 - 0.36	4	0.22	ND - 0.39	4	0.09	ND - 0.36	4	0.08	ND - 0.23	3	0.19	0.13 - 0.29	3
Nitrite	1	1	mg/L	ND		4	ND		4	ND		4	ND		3	ND		3
Potassium	NS	NS	mg/L	1.6		1	1.7		1	1.05	1.0 - 1.1	2	1.33	1.1 - 1.5	3	1.37	1.1 - 1.6	3
Selenium	50	50	µg/L	ND		4	ND		4	ND		4	ND		3	ND		3
Silica	NS	NS	mg/L	0.63	0.27 - 0.88	4	0.56	0.26 - 0.78	4	7.7	6.3 - 8.6	4	0.98	0.62 - 1.30	4	0.40	0.24 - 0.66	4
Silver	100	NA	µg/L	ND		4	ND		4	ND		4	ND		2	ND		3
Sodium	NS	NS	mg/L	16.3	15 - 17	4	16.5	16 - 17	4	52.3	29 - 76	4	20.3	20 - 21	3	10.7	10 - 11	3
Sulfate	250	NA	mg/L	28.5	27 - 30	4	35	26 - 58	4	42.5	28 - 49	4	12.5	12 - 13	4	20.8	20 - 21	4
Thallium	2	0.5	µg/L	ND		4	ND		4	ND		4	ND		3	ND		3
Zinc	5	NA	mg/L	ND		4	ND		4	ND		4	ND		3	ND		4
Alkalinity	NS	NA	mg/L	89	87 - 91	4	92.3	88 - 100	4	235	210 - 250	4	70	67 - 72	4	90	88 - 91	4
Chlorides	250	NA	mg/L	27	25 - 30	4	39	27 - 68	4	48.8	28 - 65	4	37	36 - 38	4	22	21 - 24	4

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	EPA / NYS MCL	EPA / NYS MCLG	UNITS	Average	Range	Samples in 2017	Average	Range	Samples in 2017	Average	Range	Samples in 2017	Average	Range	Samples in 2017	Average	Range	Samples in 2017
Color	15	NA	Color Units	ND		4	ND		4	ND		4	ND		4	ND		4
Conductivity	NS	NS	µmhos/cm	300	290 - 320	39	309	290 - 340	26	697	520 - 810	47	294	270 - 330	47	297	290 - 310	49
pH	NS	NS	pH units	7.43	7.19 - 7.85	363	7.54	7.23 - 8.11	351	7.46	7.41 - 8.33	196	7.84	7.4 - 8.4	362	7.90	7.43 - 8.07	4380
Total Dissolved Solids	NS	NS	mg/L	195	190 - 200	4	197.5	180 - 210	4	417.5	380 - 470	4	165	160 - 170	4	175	160-190	4
Total Hardness	NS	NS	mg/L	120	120	4	125	120 - 140	4	252.5	210 - 310	4	89.5	85 - 92	4	120		1
Total Organic Carbon	NS	NS	mg/L	1.8	1.4 - 2.5	4	1.7	1.3 - 1.9	4	0.76	0.63 - 0.89	4	2.4	2.2 - 2.7	4	1.9	1.8-2.0	4
Surfactants	NS	NS	mg/L	ND		4	ND		4	ND		4	ND		4	ND		4
Turbidity - Entry Point	TT **	NA	NTUs	0.05	0.01 - 0.08	2181	0.04	0.03 - 0.07	2092	NR		NR	0.06	0.03 - 0.11	2172	0.09	0.04 - 0.19	4380
Turbidity - Distribution System	TT ***	NA	NTUs	0.1	0.02 - 13	4280	0.1	0.02 - 13	4280	0.13	0.05 - 5.17	48	0.1	0.02 - 13	4280	0.13	0.05 - 3.05	370
Chlorine Residual - Entry Point	NA	NA	mg/L	1.15	0.14 - 1.77	2182	0.76	0.29 - 1.01	2092	0.7	0.32 - 1.54	185	0.93	0.19 - 1.72	2179	1.43	0.56 - 1.86	4380
Chlorine Residual - Retail Distribution System	TT ****	NA	mg/L	0.54	ND - 2.2	4280	0.54	ND - 2.2	4280	0.39	ND - 1.25	370	0.5	ND - 2.2	4280	0.8	0.2-1.3	54
Coliform - Retail Distribution System	TT *****	0	% Positive	0.09%		4280	0.09%		4280	0.0%		370	0.09%		4280	0.0%		370
Cryptosporidium (source water prior to treatment)	NS	NS	Cysts/L	ND		6	ND		6	NR		NR	ND		4	ND		6
Giardia (source water prior to treatment)	NS	NS	Cysts/L	ND		6	ND		6	NR		NR	ND		4	2		6
Asbestos (Distribution System)	7	7	MF/L	ND		1 (2016)	ND		1 (2016)	ND		1 (2016)	ND		1 (2014)	ND		30 (2015)
Radionuclides																		
Gross Alpha	15	0	pCi/L	ND		1 (2012)	ND		3 (2015)	ND		1 (2012)	ND		1 (2012)	ND		1 (2013)
Gross Beta	50	0	pCi/L	ND		1 (2012)	ND		3 (2015)	ND		1 (2012)	ND		1 (2012)	ND		1 (2013)
Combined Radium 226/228	5	0	pCi/L	ND		1 (2012)	ND		3 (2015)	ND		1 (2012)	ND		1 (2012)	ND		1 (2013)
Uranium	30	0	pCi/L	ND		1 (2012)	ND		3 (2015)	ND		1 (2012)	ND		1 (2012)	NR		
Volatile Organics																		
Benzene	5	0	µg/L			4			4			4			4			3
Bromobenzene	5	NA	µg/L			4			4			4			4			3
Bromochloromethane	5	NA	µg/L			4			4			4			4			3
Bromomethane	5	NA	µg/L			4			4			4			4			3
n-Butylbenzene	5	NA	µg/L			4			4			4			4			3
sec-Butylbenzene	5	NA	µg/L			4			4			4			4			3
tert-Butylbenzene	5	NA	µg/L			4			4			4			4			3
Carbon Tetrachloride	5	0	µg/L			4			4			4			4			3
Chlorobenzene	5	NA	µg/L			4			4			4			4			3
Chloroethane	5	NA	µg/L			4			4			4			4			3
Chloromethane	5	NA	µg/L			4			4			4			4			3
2-Chlorotoluene	5	NA	µg/L			4			4			4			4			3
4-Chlorotoluene	5	NA	µg/L			4			4			4			4			3
Dibromomethane	5	NA	µg/L			4			4			4			4			3
1,2-Dichlorobenzene	5	NA	µg/L			4			4			4			4			3
1,3-Dichlorobenzene	5	NA	µg/L			4			4			4			4			3

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				Source - Lake Ontario			Source - Lake Ontario			Source - Groundwater Well(s)			Source - Hemlock Lake			Source - Lake Erie		
				Average	Range	Samples in 2017	Average	Range	Samples in 2017	Average	Range	Samples in 2017	Average	Range	Samples in 2017	Average	Range	Samples in 2017
1,4-Dichlorobenzene	5	NA	µg/L	Not Detected		4	Not Detected		4	Not Detected		4	Not Detected		4	Not Detected		3
Dichlorodifluoromethane	5	NA	µg/L			4			4			3						
1,1 Dichloroethane	5	NA	µg/L			4			4			3						
1,2-Dichloroethane	5	0	µg/L			4			4			3						
1,1-Dichloroethene	5	NA	µg/L			4			4			3						
cis-1,2-Dichloroethene	5	NA	µg/L			4			4			3						
trans-1,2-Dichloroethene	5	NA	µg/L			4			4			3						
1,2-Dichloropropane	5	0	µg/L			4			4			3						
1,3-Dichloropropane	5	NA	µg/L			4			4			3						
2,2-Dichloropropane	5	NA	µg/L			4			4			3						
1,1-Dichloropropene	5	NA	µg/L			4			4			3						
1,3-Dichloropropene(Cis)	5	NA	µg/L			4			4			3						
1,3-Dichloropropene(Trans)	5	NA	µg/L			4			4			3						
Ethylbenzene	5	NA	µg/L			4			4			3						
Hexachlorobutadiene	5	NA	µg/L			4			4			3						
Isopropylbenzene	5	NA	µg/L			4			4			3						
p-Isopropyltoluene	5	NA	µg/L			4			4			3						
Methyl Tert-butyl ether (MTBE)	10	NA	µg/L			4			4			3						
Methylene Chloride (Dichloromethane)	5	0	µg/L			4			4			3						
n-Propylbenzene	5	NA	µg/L			4			4			3						
Styrene	5	NA	µg/L			4			4			3						
1,1,1,2-Tetrachloroethane	5	NA	µg/L			4			4			3						
1,1,2,2-Tetrachloroethane	5	NA	µg/L			4			4			3						
Tetrachloroethene	5	0	µg/L			4			4			3						
Toluene	5	NA	µg/L			4			4			3						
1,2,3-Trichlorobenzene	5	NA	µg/L			4			4			3						
1,2,4-Trichlorobenzene	5	NA	µg/L			4			4			3						
1,1,1-Trichloroethane	5	NA	µg/L			4			4			3						
1,1,2-Trichloroethane	5	3	µg/L			4			4			3						
Trichloroethene	5	0	µg/L			4			4			3						
Trichlorofluoromethane	5	NA	µg/L	4	4	3												
1,2,3-Trichloropropane	5	NA	µg/L	4	4	3												
1,2,4-Trimethylbenzene	5	NA	µg/L	4	4	3												
1,3,5-Trimethylbenzene	5	NA	µg/L	4	4	3												
Vinyl Chloride	2	0	µg/L	4	4	3												
Xylenes	5	NA	µg/L	4	4	3												

Parameter	EPA / NYS MCL	EPA / NYS MCLG	UNITS	Shoremont WTP			Webster WTP			Corfu WTP			Hemlock WTP			ECWA		
				Source - Lake Ontario			Source - Lake Ontario			Source - Groundwater Well(s)			Source - Hemlock Lake			Source - Lake Erie		
				Average	Range	Samples in 2017	Average	Range	Samples in 2017	Average	Range	Samples in 2017	Average	Range	Samples in 2017	Average	Range	Samples in 2017
Organics, Pesticides, Herbicides																		
1, 2-Dibromo-3-Chloropropane	200	0	ng/L	Not Detected		1	Not Detected		1	Not Detected		1	Not Detected		1	Not Detected	1	
1, 2-Dibromoethane (EDB)	50	0	ng/L															1
2, 4, 5-TP (Silvex)	10	NA	µg/L															1
2, 4-D	50	NA	µg/L															1
3-Hydroxycarbofuran	50	NS	µg/L															1
Alachlor	2	0	µg/L															4
Aldicarb	3	1	µg/L															1
Aldicarb Sulfone	2	1	µg/L															1
Aldicarb Sulfoxide	4	1	µg/L															1
Aldrin	5	NA	µg/L															4
Atrazine	3	3	µg/L															4
Benzo(a)pyrene	200	0	µg/L															4
Bis(2-Ethylhexyl)Phthalate	6	0	µg/L															4
Butachlor	50	NA	µg/L															4
Carbaryl	50	NA	µg/L															1
Carbofuran	40	40	µg/L															1
Dalapon	50	NA	µg/L															1
DCCA, Mono & Di-Acid Degradate	50	NS	µg/L															1
Di(2-Ethylhexyl) Adipate	50	NA	µg/L															4
Dicamba	50	NA	µg/L															1
Dieldrin	5	NA	µg/L	4														
Dinoseb	7	7	µg/L	1														
Dioxin	30	0	pg/L	1														
Diquat	20	20	µg/L	1														
Endothall	50	NA	µg/L	1														
Endrin	2	2	µg/L	4														
Glyphosate	50	NA	µg/L	1														
Heptachlor	400	0	ng/L	4														
Heptachlor Epoxide	200	0	ng/L	4														
Hexachlorobenzene	1	0	µg/L	4														
Hexachlorocyclopentadiene	5	NA	µg/L	4														
Isophorone	50	NA	µg/L	4														
Lindane (gamma-BHC)	200	200	ng/L	4														
Methomyl	50	NA	µg/L	1														
Methoxychlor	40	40	µg/L	4														
Metolachlor	50	NA	µg/L	4														

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	EPA / NYS MCL	EPA / NYS MCLG	UNITS	Average	Range	Samples in 2017	Average	Range	Samples in 2017	Average	Range	Samples in 2017	Average	Range	Samples in 2017	Average	Range	Samples in 2017
Metribuzin	50	NA	µg/L			4			4	Not	4			4			4	
Oxamyl	50	NA	µg/L			1			1		1			1			1	
p,p' DDD	5	NA	µg/L			4			4		4			4			4	
p,p' DDE	NS	NS	µg/L			4			4		4			4			4	
p,p' DDT	5	NA	µg/L			4			4		4			4			4	
PCB's Total	500	0	ng/L			4			4		4			4			1	
Pentachlorophenol	1	0	µg/L			4			4		4			4			4	
Perchlorate	NS	NS	µg/L			1			1		1			1			1	
Pichloram	50	NA	µg/L			1			1		1			1			4	
Propachlor	50	NA	µg/L			4			4		4			4			4	
Simazine	4	4	µg/L			4			4		4			4			4	
Total Chlordane	2	0	µg/L			4			4		4			4			4	
Toxaphene	3	0	µg/L			4			4		4			4			1	
													4					
Disinfectant Byproducts																		
Total Trihalomethanes (TTHMs)	80	NA	µg/L	41.9	18 - 88	52	41.9	18 - 88	52	47.1	28 - 63	8	41.9	18 - 88	52	47.1	28 - 63	8
				Maximum LRAA = 65.5			Maximum LRAA = 65.5			Maximum LRAA = 56.3			Maximum LRAA = 65.5			Maximum LRAA = 56.3		
Haloacetic Acids (HAA5)	60	NA	µg/L	10.7	3 - 30	52	10.7	3 - 30	52	9.8	ND - 24	8	10.7	3 - 30	52	9.8	ND - 24	8
				Maximum LRAA = 18.3			Maximum LRAA = 18.3			Maximum LRAA = 14.3			Maximum LRAA = 18.3			Maximum LRAA = 14.3		

Key

MCL = Maximum Contaminant Level - The highest level of a contaminant that is allowed in drinking water. MCLs are set as close to the MCLGs as possible.

MCLG = Maximum Contaminant Level Goal - The level of a contaminant below which there is no known or expected risk to health. MCLGs allow for a margin of safety.

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

AL* = Action Level - The concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow. If >10% of results are greater than 15 µg/l for lead or 1300 µg/L for copper, remediative steps are required. In MCWA's combined retail area, 90% of the samples were less than 12 µg/L for lead and 94 µg/L for copper.

LRAA = Locational Running Annual Average - The annual average contaminant concentration at a monitoring site.

mg/l = milligram (1/1,000 of a gram) per liter = ppm = parts per million

µg/l = microgram (1/1,000,000 of a gram) per liter = ppb = parts per billion

ng/L = nanogram (1/1,000,000,000 of a gram) per liter = ppt = parts per trillion

pg/L = picogram (1/1,000,000,000,000 of a gram) per liter = ppq = parts per quadrillion

pCi/L = picoCuries per liter

NTU = Nephelometric turbidity Unit, a measure of the clarity of water.

MF/L = million fibers per liter, a measure of the presence of asbestos fibers longer than 10 micrometers.

(year) = Most recent testing. Monitoring frequency requirements vary depending on compound.

Not Detected = ND = absent or present at less than testing method detection level. All testing methods are EPA approved with detection limits much less than the MCL.

NA = Not applicable **NR** = Not required **NS** = No standard **NT** = Not Tested

µmhos/cm = micro ohms per centimeter

Cont = Continuously monitored via online instrumentation.

****** = 95% of measurements within a given month must be less than 0.3 NTUs.

******* = Average of monthly distribution system turbidity samples must be less than 5.0 NTUs.

******** = 95% of monthly distribution system samples must have a measurable chlorine residual.

********* = No more than 5% of monthly samples can be positive.

Note: Total Hardness is also expressed in grains per gallon. The Total Hardness of the Ontario and Hemlock supplies are 7.6 and 5.6 grains per gallon respectively.