

Ontario Regulation 170 Section 11 Annual Report - Rockwood

Drinking-Water System Number:	220005599
Drinking-Water System Name:	Rockwood Water Supply System
Drinking-Water System Owner:	The Corporation of the Township of Guelph Eramosa
Drinking-Water System Category:	Large Municipal Residential
Period being reported:	January 1, 2013 – December 31, 2013

<p><u>Complete if your Category is Large Municipal Residential or Small Municipal Residential</u></p> <p>Does your Drinking-Water System serve more than 10,000 people? Yes [] No [X]</p> <p>Is your annual report available to the public at no charge on a web site on the Internet? Yes [X] No []</p> <p>Location where Summary Report required under Ontario Regulation 170/03 Schedule 22 will be available for inspection.</p> <div style="border: 1px solid black; padding: 5px; margin-top: 5px;"> <p>The Corporation of the Township of Guelph Eramosa PO Box 700 8348 Wellington Road, 124 Rockwood ON</p> </div>	<p><u>Complete for all other Categories.</u></p> <p>Number of Designated Facilities served: None</p> <p>Did you provide a copy of your annual report to all Designated Facilities: N/A</p> <p>Number of Interested Authorities you report: N/A</p> <p>Did you provide a copy of your annual report to all Interested Authorities you report to for each Designated Facility? N/A</p>
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List all Drinking-Water Systems (if any), which receive all of their drinking water from your system:

Drinking Water System Name	Drinking Water System Number
N/A	

Did you provide a copy of your annual report to all Drinking-Water System owners that are connected to you and to whom you provide all of its drinking water?

Yes [] No [] Not Applicable [X]

Indicate how you notified system users that your annual report is available, and is free of charge.

- Public access/notice via the Township Website
- Public access/notice via Government Office
- Public access/electronic newsletter
- Public access/notice via Public Request

Describe your Drinking-Water System

The Rockwood Water Supply System is located in the Township of Guelph/Eramosa. The water system consists of three municipal groundwater wells, a water tower and distribution system.

Wells #1 and #2 at the Station Street Pumphouse and Well #3 at the Bernardi Pumphouse supply water directly to Zone 1 of the distribution system and to the in-distribution standpipe. When the well pumps are running, they deliver water to meet the demand in Zone 1 of the distribution system and any excess water produced is directed to the standpipe and stored there. The water level in the standpipe maintains pressure in Zone 1. A Supervisory Control and Data Acquisition / Programmable Logic Controller (SCADA/PLC) system monitors and controls the operation of the Station Street well pumps and the Bernardi HLPs based on the water level in the standpipe.

The booster pumping station draws water from the standpipe and pumps to Zone 2 of the distribution system. The station uses variable frequency drive booster pumps that allow each pump to provide a range of flowrates depending on the system demand. The booster pumps are controlled by the SCADA/PLC to maintain constant pressures in this zone. When the demand for water in Zone 2 rises, the system immediately senses the associated drop in pressure and calls the pump(s) to ramp up to meet the demand. Likewise, when the demand falls, the system senses the associated rise in pressure and calls the pumps to ramp down. At least one pump must run at all times to ensure pressures are maintained in Zone 2. Any excess pressure sensed at the booster pumping station is re-circulated back into the standpipe.

List all water treatment chemicals used over this reporting period

Sodium Hypochlorite (12% solution) – disinfection UV Swift – Station St.

Sodium silicate (34.8 % solution) – iron sequestering

Please provide a brief description and a breakdown of monetary expenses incurred

Activity Description	Activity Type	Approximate Expenditure
Air scouring & video inspection of well at Bernardi Pump House	Service	\$12,334.48
Well pump sensor replacement at Bernardi Pump House	Replace	\$1,915.35
Flow meter replacements at Bernardi and Station St. Pump Houses	Replace	\$22,062.81
Rebuilding of Sodium Hypochloride Board at Bernardi Pump House	Replace	\$2,654.45
Service and Repair to UV System at Station St. Pump House	Repair	\$1,930.22
Repair to Pitless Adaptor at Station St. Pump House	Repair	\$4,181.00
Turbidity Analyzer replacement at Station St. Pump House	Replace	\$3,832.00
Emergency Pump # 1 - motor and pump repair at the Rockwood Booster Station	Repair	\$4,839.84
Total:		\$53,750.15

Provide details on the notices submitted in accordance with subsection 18(1) of the Safe Drinking-Water Act or section 16-4 of Schedule 16 of O.Reg.170/03 and reported to Spills Action Centre

Incident Date	Parameter	Result	Unit of Measure	Corrective Action	Corrective Action Date
N/A	N/A	N/A	N/A	N/A	N/A

Microbiological testing done under the Schedule 10, 11 or 12 of Regulation 170/03, during this reporting period.

	# of Samples	E.Coli (min – max)	Total Coliform (min – max)	# of HPC Samples	HPC (min – max)
Raw	156	0-0	0-0	N/A	N/A
Treated	104	0-0	0-0	104	0-2
Distribution	214	0-0	0-0	214	0-10

Operational testing done under Schedule 8 of Regulation 170/03 during the period covered by this Annual Report.

Parameter	Number of Grab Samples	Range of Results (min #)-(max #)
Raw Water		
Turbidity (Station Street; Well 1-67)	21	0.07-0.42 NTU's
Turbidity (Station Street; Well 1-76)	20	0.11-0.36 NTU's
Turbidity (Bernardi)	22	0.06-0.34 NTU's
Treated Water		
Free Chlorine Residual (Station St)	8760	0.57-1.77 mg/L
Free Chlorine Residual (Bernardi)	8760	0.58-1.67 mg/L
Distribution System		
Free Chlorine Residual	2543	0.33-1.80 mg/L

Summary of additional testing and sampling carried out in accordance with the requirement of an approval, order or other legal instrument.

Date Legal instrument issued	Parameter	Date Sampled	Result	Unit of Measure
N/A				

Summary of Inorganic parameters tested during this reporting period or the most recent sample results.

Test Parameter	Units	MAC	Rockwood Station St.	Rockwood Bernardi	Parameter Information
Antimony (Sb)	µg/L	6	0.87	0.75	Naturally occurring metalloid rarely detected in Ontario Drinking Water
Arsenic (As)	µg/L	25	< 1.0	< 1	Sometimes found in high concentrations in ground water in hard rock areas through the natural dissolution of arsenic-containing minerals
Barium (Ba)	mg/L	1.0	80	41	Common in sedimentary rocks
Boron (B)	mg/L	5.0	23	< 10	Normally found in very small levels in drinking water
Cadmium (Cd)	mg/L	0.005	< 0.1	< 0.1	Rare element unlikely to be present as natural contaminant in drinking water

Test Parameter	Units	MAC	Rockwood Station St.	Rockwood Bernardi	Parameter Information
Chromium (Cr)	mg/L	0.05	< 5.0	< 5.0	Trivalent chromium naturally occurs and is not considered toxic
Mercury (Hg)	mg/L	0.001	< .10	< 0.1	Sources in drinking water can be air pollution, waste incineration and metal refining operations
Selenium (Se)	mg/L	0.01	< 2.0	< 2.0	Naturally occurs in water at trace levels
Uranium (U)	mg/L	0.02	0.9	0.3	Normally occurring in granite and other mineral deposits, leaches into water
Sodium	mg/L	20	97	8.7	Naturally occurring or due to water softening. Sodium has an offensive taste at higher concentrations (> 175 mg/L), thus, low levels of sodium in water are desirable for consumer acceptance.
Fluoride (F)	mg/L	1.5	0.90	1.36	Fluoride occurs naturally in surface water due to atmospheric deposition from industry and volcanic eruptions, leaching from fertilizers, and the weathering of rocks and soils containing fluoride. Groundwater may be especially rich in fluoride depending on local geology.
Nitrite (NO ₂)	mg/L as N	1.0	<0.01	<0.01	Present in ground water, and is oxidized to nitrate when chlorinated
			<0.01	<0.01	
			<0.01	<0.01	
			<0.01	<0.01	
Nitrate (NO ₃)	mg/L as N	10.0	<0.01	<0.01	Present in ground water as a result of plant or animal material decay, fertilizers, sewage or treated wastewater
			<0.01	<0.01	
			<0.01	<0.01	
			<0.01	<0.01	

Note: Nitrate and Nitrite are sampled quarterly

Summary of lead testing under Schedule 15.1 during this reporting period applicable to the following drinking water systems; large municipal residential systems, small municipal residential systems, and non-municipal year-round residential systems).

Location Type	Number of Samples	Range of Lead Results (min#) – (max #) ug/L	Number of Exceedances
Plumbing	Exempt	No history of exceedance	n/a
Distribution	pH and alkalinity		n/a

Summary of Organic parameters sampled during this reporting period or the most recent sample results (Treated except where noted)

Test Parameter	Units	MAC	Rockwood Station St.	Rockwood Bernardi	Parameter Information
Alachlor	µg/L	5	< 0.1	< 0.1	Herbicide for weed control banned in 1985
Aldicarb	µg/L	9	< 0.2	< 0.2	Insecticide used in low quantities for control of specified insects. Banned in 1990s
Aldrin + Dieldrin	µg/L	0.7	< 0.5	< 0.5	Pesticides for insect control banned in 1969
Atrazine + N-dealkylated metabolites	µg/L	5	< 1	< 1	Herbicide on corn crops for annual grass control. It is highly persistent and moderately mobile in soil
Azinphos-methyl	µg/L	20	< 0.5	< 0.5	Insecticide against foliage-feeding insects
Bendiocarb	µg/L	40	< 1	< 1	Insecticide used in buildings and greenhouses
Benzene	µg/L	5	< 0.5	< 0.5	Present in gasoline and other refined petroleum products
Benzo(a)pyrene	µg/L	0.01	< 0.5	< 0.5	Formed during the incomplete burning of organic matter and poorly adjusted diesel exhaust
Bromoxynil	µg/L	5	< 5	< 5	Herbicide for control of specific weeds
Carbaryl	µg/L	90	< 0.01	< 0.01	Insecticide used in agriculture and forestry
Carbofuran	µg/L	90	< 1	< 1	Insecticide used in agriculture
Carbon Tetrachloride	µg/L	5	< 2	< 2	Only found in ground water from old chlorinated

Test Parameter	Units	MAC	Rockwood Station St.	Rockwood Bernardi	Parameter Information
					solvent industry sites
Chlordane (Total)	µg/L	7	< 2	< 2	Insecticide once used in agriculture, banned in 1994
Chlorpyrifos	µg/L	90	< 0.1	< 0.1	Common insecticide for insect control
Cyanazine	µg/L	10	< 0.009	< 0.009	Herbicide for control of weeds in crop and non-crop areas
Diazinon	µg/L	20	< 1	< 1	Insecticide for dwelling pests, flies, ants and cockroaches
Dicamba	µg/L	120	< 1	< 1	Herbicide for weed control in grain crops
1,2-Dichlorobenzene	µg/L	200	< 5	< 5	Used in chemical blends
1,4-Dichlorobenzene	µg/L	5	< 0.20	< 0.20	Was widely used in toilet pucks and mothballs, banned in 1988
Dichlorodiphenyltrichloroethane (DDT) + metabolites	µg/L	30	< 0.01	< 0.01	DDT use was banned in Ontario in 1998
1,2-Dichloroethane	µg/L	5	< 5	< 5	Used as a solvent and fumigant
1,1-Dichloroethylene (vinylidene chloride)	µg/L	14	< 0.5	< 0.5	Used in the food packaging industry and the textile industry for furniture and automotive upholstery
Dichloromethane	µg/L	50	< 0.02	< 0.02	Industrial solvent for paint and degreasing agent
2,4-Dichlorophenol	µg/L	900	< 0.1	< 0.1	Present in drinking water only as a result of industrial contamination
2,4-Dichlorophenoxy acetic acid (2,4-D)	µg/L	100	< 5	< 5	Herbicide for cereal crop and lawn weed control
Diclofop-methyl	µg/L	9	< 1	< 1	Herbicide grass control in grains and vegetables
Dimethoate	µg/L	20	< 1	< 1	Miticide and insecticide
Dinoseb	µg/L	10	< 0.5	< 0.5	Contact herbicide and desiccant. It is no longer used in Ontario
Diquat	µg/L	70	< 0.9	< 0.9	Herbicide used as a crop desiccant in seed crops

Test Parameter	Units	MAC	Rockwood Station St.	Rockwood Bernardi	Parameter Information
Diuron	µg/L	150	< 3	< 3	Herbicide for control of vegetation in crop and non-crop areas
Glyphosate	µg/L	280	< 10	< 10	Herbicide for weed control
Heptachlor + Heptachlor Epoxide	µg/L	3	< 1	< 1	Insecticide once used in agriculture, banned in 1969
Lindane (Total)	µg/L	4	< 7	< 7	Insecticide used for seed treatment
Malathion	µg/L	190	< 10	< 10	Insecticide used in fruits and vegetables
Methoxychlor	µg/L	900	< 0.01	< 0.01	Insecticide
Metolachlor	µg/L	50	< 0.006	< 0.006	Selective herbicide for pre-emergence and pre-plant broad leaf weed control
Metribuzin	µg/L	80	< 5	< 5	Herbicide for control of weed and grasses
Monochlorobenzene	µg/L	80	< 0.02	< 0.02	Industrial solvent
Paraquat	µg/L	10	< 5	< 5	Highly toxic herbicide used for desiccation of seed crops
Parathion	µg/L	50	< 0.1	< 0.1	Insecticide for foliar pests and adult stage of root maggots
Pentachlorophenol	µg/L	60	< 0.2	< 0.2	It is rarely found today but was extensively used as a pesticide and wood preservative
Phorate	µg/L	2	< 1	< 1	Insecticide for sucking insects and larvae
Picloram	µg/L	190	< 0.2	< 0.2	Herbicide for broad leaf weed and brush control on roads
Polychlorinated Biphenyls(PCB)	µg/L	3	< 0.5	< 0.5	Primarily produced by the reaction of chlorine and natural organics
Prometryne	µg/L	1	< 0.5	< 0.5	Herbicide used on select grass and weeds
Simazine	µg/L	10	< 5	< 5	Herbicide for pre-emergence weed control
Total Trihalomethanes *	µg/L	100	0.02423		Primarily produced by the reaction of chlorine and

Test Parameter	Units	MAC	Rockwood Station St.	Rockwood Bernardi	Parameter Information
(THM)					natural organics
Temephos	µg/L	280	< 10	< 10	Insecticide for mosquito and black fly larvae control
Terbufos	µg/L	1	< 0.05	< 0.05	Insecticide
Tetrachloroethylene	µg/L	30	< 0.1	< 0.1	Industrial solvent
2,3,4,6-Tetrachlorophenol	µg/L	100	< 0.5	< 0.5	Was normally used to preserve wood
Triallate	µg/L	230	< 1	< 1	Herbicide for wilds oat control in crops
Trichloroethylene	µg/L	50	< 0.1	< 0.1	Industrial solvent
2,4,6-Trichlorophenol	µg/L	5	< 0.5	< 0.5	Pesticide
2,4,5-Trichlorophenoxy acetic acid (2,4,5-T)	µg/L	280	< 1	< 1	Herbicide
Trifluralin	µg/L	45	< 1	< 1	Herbicide for summer weed control
Vinyl Chloride	µg/L	2	< 0.2	< 0.2	Synthetic chemical used in making PVC

* THM: Annual running average of samples collected quarterly in the water distribution system.

List any Inorganic or Organic parameter(s) that exceeded half the standard prescribed in Schedule 2 of Ontario Drinking Water Quality Standards.

Test Parameter	Units	MAC	Rockwood - Treated	
			Station St.	Bernardi
Sodium	mg/L	20	97	8.7
Fluoride	mg/L	1.5	0.90	1.36

Ontario Regulation 170/03 Section 11 Annual Report – Hamilton Drive

Drinking-Water System Number:	220009194
Drinking-Water System Name:	Hamilton Drive Water Supply System
Drinking-Water System Owner:	The Corporation of the Township of Geulph Eramosa
Drinking-Water System Category:	Large Municipal Residential
Period being reported:	January 1, 2013– December 31, 2013

<u>Complete if your Category is Large Municipal Residential or Small Municipal Residential</u>	<u>Complete for all other Categories.</u>
<p>Does your Drinking-Water System serve more than 10,000 people? Yes [] No [X]</p> <p>Is your annual report available to the public at no charge on a web site on the Internet? Yes [X] No []</p> <p>Location where Summary Report required under Ontario Regulation 170/03 Schedule 22 will be available for inspection.</p> <div style="border: 1px solid black; padding: 5px;"> <p>The Corporation of the Township of Guelph Eramosa PO Box 700 8348 Wellington Road, 124 Rockwood ON</p> </div>	<p>Number of Designated Facilities served: None</p> <p>Did you provide a copy of your annual report to all Designated Facilities N/A</p> <p>Number of Interested Authorities you report N/A</p> <p>Did you provide a copy of your annual report to all Interested Authorities you report to for each Designated Facility? N/A</p>

List all Drinking-Water Systems (if any), which receive all of their drinking water from your system:

Drinking Water System Name	Drinking Water System Number
N/A	

Did you provide a copy of your annual report to all Drinking-Water System owners that are connected to you and to whom you provide all of its drinking water?

Yes [] No [] Not Applicable [X]

Indicate how you notified system users that your annual report is available, and is free of charge.

- Public access/notice via the Township Website
- Public access/notice via Government Office
- Public access/electronic newsletter
- Public access/notice via Public Request

Describe your Drinking-Water System

The Hamilton Drive Water Supply System is located in the Township of Guelph/Eramosa. A residential development obtains its entire water supply from two groundwater wells (Huntington and Cross Creek) each with its own Pump House and grade-level reservoir.

The raw water from each well is chlorinated to protect against microbial contaminants prior to discharge into the reservoir. The raw water is disinfected with a sodium hypochlorite solution (chlorine) for primary and secondary disinfection requirements. The water level in the reservoir starts and stops the well pumps.

The Huntington and Cross Creek Pumphouses supply treated water directly to the distribution system and to the in-distribution standpipe. As the water level in the standpipe drops, the system calls the pumps at the Huntington or Cross Creek Pumphouse to start pumping water into the distribution system. The system alternates successive pump starts between the Huntington and Cross Creek facilities. When the water demand exceeds the capacity being supplied by the pumphouse, the supply is supplemented with water from the standpipe. When the demand is less than the amount being supplied from the pumphouse, the excess flow is used to replenish the depleted standpipe reserves.

Water pressures are maintained throughout the distribution system by the water level in the standpipe. This system is a demand/storage system; once the standpipe is full, the high lift pumps shut down until the water level drops in the tower and the pumps are required again.

List all water treatment chemicals used over this reporting period

Sodium Hypochlorite (12% solution) - disinfection

Please provide a brief description and a breakdown of monetary expenses incurred

Activity Type	Activity Type	Approximate Expenditure
Air scouring & video inspection of well. Pump and motor replacements of well and resevoir at Huntington Pump House	Replace	\$31,770.23
Repair to Programable Logic Controller (Miltronics Unit communication system) at Huntington Pump House	Repair	\$3,562.53
Replaced Starter in the High Lift Pump at both Cross Creek and Huntington Pump House's	Replace	\$1,555.21
High Lift pump replacement at Cross Creek Pump House	Replace	\$12,295.53
Rebuilding of Sodium Hypochloride Board at Cross Creek Pump House	Replace	\$2,596.15
New roof at Cross Creek Pump House	Replace	\$3,328.98
Flow meter replacements at Cross Creek and Huntington Pump House's	Replace	\$20,957.50
Thermostat replaced at Hamilton Drive Standpipe	Replace	\$251.03
Total:		\$76,317.16

Provide details on the notices submitted in accordance with subsection 18(1) of the Safe Drinking-Water Act or section 16-4 of Schedule 16 of O.Reg.170/03 and reported to Spills Action Centre

Incident Date	Parameter	Result	Unit of Measure	Corrective Action	Corrective Action Date
N/A					

Microbiological testing done under the Schedule 10, 11 or 12 of Regulation 170/03, during this reporting period.

	# of Samples	E.Coli (min – max)	Total Coliform (min – max)	# of HPC Samples	HPC (min – max)
Raw	105	0-0	0-0	N/A	N/A
Treated	104	0-0	0-0	104	0-3
Distribution	159	0-0	0-0	159	0-5

Operational testing done under Schedule 8 of Regulation 170/03 during the period covered by this Annual Report.

Parameter	Number of Grab Samples	Range of Results (min #)-(max #)
Raw Water		
Turbidity (Cross Creek Well 1)	19	0.07-0.31 NTU's
Turbidity (Huntington Well 2)	24	0.11-0.55 NTU's
Treated Water		
Free Chlorine Residual (Cross Creek)	8760	0.31-1.97 mg/L
Free Chlorine Residual (Huntington)	8760	0.86-1.56 mg/L
Distribution System		
Free Chlorine Residual	2543	0.37-1.51 mg/L

Summary of additional testing and sampling carried out in accordance with the requirement of an approval, order or other legal instrument.

Date Legal instrument issued	Parameter	Date Sampled	Result	Unit of Measure
N/A				

Summary of Inorganic parameters tested during this reporting period or the most recent sample results.

Test Parameter	Units	MAC	Hamilton Dr. Cross Creek	Hamilton Dr. Huntington	Parameter Information
Antimony (Sb)	µg/L	6	0.87	0.75	Naturally occurring metalloid rarely detected in Ontario Drinking Water
Arsenic (As)	µg/L	25	< 1.0	< 1	Sometimes found in high concentrations in ground water in hard rock areas through the natural dissolution of arsenic-containing minerals
Barium (Ba)	mg/L	1.0	80	41	Common in sedimentary rocks
Boron (B)	mg/L	5.0	23	< 10	Normally found in very small levels in drinking water

Test Parameter	Units	MAC	Hamilton Dr. Cross Creek	Hamilton Dr. Huntington	Parameter Information
Cadmium (Cd)	mg/L	0.005	< 0.1	< 0.1	Rare element unlikely to be present as natural contaminant in drinking water
Chromium (Cr)	mg/L	0.05	< 5.0	< 5.0	Trivalent chromium naturally occurs and is not considered toxic
Mercury (Hg)	mg/L	0.001	< .10	< 0.1	Sources in drinking water can be air pollution, waste incineration and metal refining operations
Selenium (Se)	mg/L	0.01	< 2.0	< 2.0	Naturally occurs in water at trace levels
Uranium (U)	mg/L	0.02	0.9	0.3	Normally occurring in granite and other mineral deposits, leaches into water
Sodium	mg/L	20	11.0	25.0	Naturally occurring or due to water softening. Sodium has an offensive taste at higher concentrations (> 175 mg/L), thus, low levels of sodium in water are desirable for consumer acceptance.
Fluoride (F)	mg/L	1.5	0.13	0.16	Fluoride occurs naturally in surface water due to atmospheric deposition from industry and volcanic eruptions, leaching from fertilizers, and the weathering of rocks and soils containing fluoride. Groundwater may be especially rich in fluoride depending on local geology.
Nitrite (NO ₂)	mg/L as N	1.0	<0.01	<0.01	Present in ground water, and is oxidized to nitrate when chlorinated
			<0.01	<0.01	
			<0.01	<0.01	

Test Parameter	Units	MAC	Hamilton Dr. Cross Creek	Hamilton Dr. Huntington	Parameter Information
			<0.01	<0.01	
Nitrate (NO ₃)	mg/L as N	10.0	<0.01	<0.01	Present in ground water as a result of plant or animal material decay, fertilizers, sewage or treated wastewater
			<0.01	<0.01	
			<0.01	<0.01	
			<0.01	<0.01	

Note: Nitrate and Nitrite are sampled quarterly

Summary of lead testing under Schedule 15.1 during this reporting period applicable to the following drinking water systems; large municipal residential systems, small municipal residential systems, and non-municipal year-round residential systems).

Location Type	Number of Samples	Range of Lead Results (min#) – (max #) ug/L	Number of Exceedances
Plumbing	Exempt	No history of exceedance	n/a
Distribution	pH and alkalinity		n/a

Summary of Organic parameters sampled during this reporting period or the most recent sample results (Treated except where noted)

Test Parameter	Units	MAC	Hamilton Dr. Cross Creek	Hamilton Dr. Huntington	Parameter Information
Alachlor	µg/L	5	< 0.1	< 0.1	Herbicide for weed control banned in 1985
Aldicarb	µg/L	9	< 0.2	< 0.2	Insecticide used in low quantities for control of specified insects. Banned in 1990s
Aldrin + Dieldrin	µg/L	0.7	< 0.5	< 0.5	Pesticides for insect control banned in 1969
Atrazine + N-dealkylated metabolites	µg/L	5	< 1	< 1	Herbicide on corn crops for annual grass control. It is highly persistent and moderately mobile in soil
Azinphos-methyl	µg/L	20	< 0.5	< 0.5	Insecticide against foliage-feeding insects
Bendiocarb	µg/L	40	< 1	< 1	Insecticide used in buildings and greenhouses

Test Parameter	Units	MAC	Hamilton Dr. Cross Creek	Hamilton Dr. Huntington	Parameter Information
Benzene	µg/L	5	< 0.5	< 0.5	Present in gasoline and other refined petroleum products
Benzo(a)pyrene	µg/L	0.01	< 0.5	< 0.5	Formed during the incomplete burning of organic matter and poorly adjusted diesel exhaust
Bromoxynil	µg/L	5	< 5	< 5	Herbicide for control of specific weeds
Carbaryl	µg/L	90	< 0.01	< 0.01	Insecticide used in agriculture and forestry
Carbofuran	µg/L	90	< 1	< 1	Insecticide used in agriculture
Carbon Tetrachloride	µg/L	5	< 2	< 2	Only found in ground water from old chlorinated solvent industry sites
Chlordane (Total)	µg/L	7	< 2	< 2	Insecticide once used in agriculture, banned in 1994
Chlorpyrifos	µg/L	90	< 0.1	< 0.1	Common insecticide for insect control
Cyanazine	µg/L	10	< 0.009	< 0.009	Herbicide for control of weeds in crop and non-crop areas
Diazinon	µg/L	20	< 1	< 1	Insecticide for dwelling pests, flies, ants and cockroaches
Dicamba	µg/L	120	< 1	< 1	Herbicide for weed control in grain crops
1,2-Dichlorobenzene	µg/L	200	< 5	< 5	Used in chemical blends
1,4-Dichlorobenzene	µg/L	5	< 0.20	< 0.20	Was widely used in toilet pucks and mothballs, banned in 1988
Dichlorodiphenyltrichloroethane (DDT) + metabolites	µg/L	30	< 0.01	< 0.01	DDT use was banned in Ontario in 1998
1,2-Dichloroethane	µg/L	5	< 5	< 5	Used as a solvent and fumigant

Test Parameter	Units	MAC	Hamilton Dr. Cross Creek	Hamilton Dr. Huntington	Parameter Information
1,1-Dichloroethylene (vinylidene chloride)	µg/L	14	<0.5	<0.5	Used in the food packaging industry and the textile industry for furniture and automotive upholstery
Dichloromethane	µg/L	50	< 0.02	< 0.02	Industrial solvent for paint and degreasing agent
2-4 Dichlorophenol	µg/L	900	< 0.1	< 0.1	Present in drinking water only as a result of industrial contamination
2,4-Dichlorophenoxy acetic acid (2,4-D)	µg/L	100	< 5	< 5	Herbicide for cereal crop and lawn weed control
Diclofop-methyl	µg/L	9	< 1	< 1	Herbicide grass control in grains and vegetables
Dimethoate	µg/L	20	< 1	< 1	Miticide and insecticide
Dinoseb	µg/L	10	< 0.5	< 0.5	Contact herbicide and desiccant. It is no longer used in Ontario
Diquat	µg/L	70	< 0.9	< 0.9	Herbicide used as a crop desiccant in seed crops
Diuron	µg/L	150	< 3	< 3	Herbicide for control of vegetation in crop and non-crop areas
Glyphosate	µg/L	280	< 10	< 10	Herbicide for weed control
Heptachlor + Heptachlor Epoxide	µg/L	3	< 1	< 1	Insecticide once used in agriculture, banned in 1969
Lindane (Total)	µg/L	4	< 7	< 7	Insecticide used for seed treatment
Malathion	µg/L	190	< 10	< 10	Insecticide used in fruits and vegetables
Methoxychlor	µg/L	900	< 0.01	< 0.01	Insecticide
Metolachlor	µg/L	50	< 0.006	< 0.006	Selective herbicide for pre-emergence and pre-plant broad leaf weed control

Test Parameter	Units	MAC	Hamilton Dr. Cross Creek	Hamilton Dr. Huntington	Parameter Information
Metribuzin	µg/L	80	< 5	< 5	Herbicide for control of weed and grasses
Monochlorobenzene	µg/L	80	< 0.02	< 0.02	Industrial solvent
Paraquat	µg/L	10	< 5	< 5	Highly toxic herbicide used for desiccation of seed crops
Parathion	µg/L	50	< 0.1	< 0.1	Insecticide for foliar pests and adult stage of root maggots
Pentachlorophenol	µg/L	60	< 0.2	< 0.2	It is rarely found today but was extensively used as a pesticide and wood preservative
Phorate	µg/L	2	< 1	< 1	Insecticide for sucking insects and larvae
Picloram	µg/L	190	< 0.2	< 0.2	Herbicide for broad leaf weed and brush control on roads
Polychlorinated Biphenyls(PCB)	µg/L	3	< 0.5	< 0.5	Primarily produced by the reaction of chlorine and natural organics
Prometryne	µg/L	1	< 0.5	< 0.5	Herbicide used on select grass and weeds
Simazine	µg/L	10	< 5	< 5	Herbicide for pre-emergence weed control
Total Trihalomethanes * (THM)	µg/L	100	0.010		Primarily produced by the reaction of chlorine and natural organics
Temephos	µg/L	280	< 10	< 10	Insecticide for mosquito and black fly larvae control
Terbufos	µg/L	1	< 0.05	< 0.05	Insecticide
Tetrachloroethylene	µg/L	30	< 0.1	< 0.1	Industrial solvent
2,3,4,6-Tetrachlorophenol	µg/L	100	< 0.5	< 0.5	Was normally used to preserve wood
Triallate	µg/L	230	< 1	< 1	Herbicide for wilds oat control in crops
Trichloroethylene	µg/L	50	< 0.1	< 0.1	Industrial solvent

Test Parameter	Units	MAC	Hamilton Dr. Cross Creek	Hamilton Dr. Huntington	Parameter Information
2,4,6-Trichlorophenol	µg/L	5	< 0.5	< 0.5	Pesticide
2,4,5-Trichlorophenoxy acetic acid (2,4,5-T)	µg/L	280	< 1	< 1	Herbicide
Trifluralin	µg/L	45	< 1	< 1	Herbicide for summer weed control
Vinyl Chloride	µg/L	2	< 0.2	< 0.2	Synthetic chemical used in making PVC

* THM: Annual running average of samples collected quarterly in the water distribution system.

List any Inorganic or Organic parameter(s) that exceeded half the standard prescribed in Schedule 2 of Ontario Drinking Water Quality Standards.

Test Parameter	Units	MAC	Hamilton Dr. Huntington - Treated
Sodium	mg/L	20	25.0