

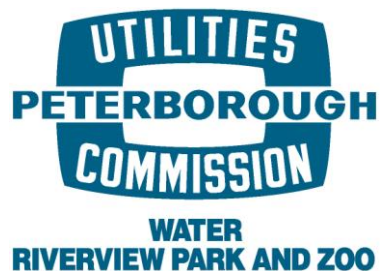
PETERBOROUGH UTILITIES COMMISSION

# ANNUAL REPORT

FOR

## CITY OF PETERBOROUGH WATERWORKS

PERIOD: January 1, 2010 – December 31, 2010



MOE Waterworks # 220000497



<b>Drinking-Water System Number:</b>	220000497
<b>Drinking-Water System Name:</b>	Peterborough Water Treatment Plant
<b>Drinking-Water System Owner:</b>	Peterborough Utilities Commission
<b>Drinking-Water System Category:</b>	WT Class 4
<b>Period being reported:</b>	January 1, 2010 – December 31, 2010

<p><b><u>Complete if your Category is Large Municipal Residential or Small Municipal Residential</u></b></p> <p>Does your Drinking-Water System serve more than 10,000 people? Yes [X] No [ ]</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 O. Reg. 170/03 Schedule 22 will be available for inspection.</p> <div style="border: 1px solid black; padding: 5px;"> <p>Peterborough Utilities 1867 Ashburnham Drive Peterborough, ON K9J 6Z5</p> </div>	<p><b><u>Complete for all other Categories.</u></b></p> <p>Number of Designated Facilities served:  <div style="border: 1px solid black; width: 100px; height: 20px; margin: 5px 0;"></div> </p> <p>Did you provide a copy of your annual report to all Designated Facilities you serve? Yes [ ] No [ ]</p> <p>Number of Interested Authorities you report to: <div style="border: 1px solid black; width: 100px; height: 20px; margin: 5px 0;"></div></p> <p>Did you provide a copy of your annual report to all Interested Authorities you report to for each Designated Facility? Yes [ ] No [ ]</p>
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**Note: For the following tables below, additional rows or columns may be added or an appendix may be attached to the report**

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
Woodland Acres	210001503

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 [ X ] No [ ]



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

- Public access/notice via the web
- Public access/notice via Government Office
- Public access/notice via a newspaper
- Public access/notice via Public Request
- Public access/notice via a Public Library
- Public access/notice via other method Bill Stuffer

**Describe your Drinking-Water System**

The Peterborough municipal water system is operated by Peterborough Utilities Services Inc. under contract with the Peterborough Utilities Commission.

The City of Peterborough municipal water works system generally consists of five elements:

**1. Raw Water**

The source of raw (untreated) water for Peterborough’s drinking water is the Otonabee River. The Otonabee River Water is of good quality and can be described as a moderately coloured water of low turbidity. The river water temperature ranges from 0°C (winter) to approximately 26°C (summer). The raw river water is what we call a surface water supply, which means that it is considered to be an unprotected source.

Accordingly, we assume that raw water always required full treatment at the Peterborough Water Treatment Plant to make it drinkable or potable.

The river water quality is monitored by staff at the plant as well as the Otonabee Region Conservation Authority (ORCA) and the Peterborough Health Unit (beaches only). The watershed is protected by planning and approvals processes through the City of Peterborough and ORCA. Since 1998, ORCA has monitored water quality in the Otonabee watershed under the Watershed 2000 Program and the Provincial Water Quality Monitoring Network.

**2. Water Treatment Plant**

The plant is located at 1230 Water Street North, Peterborough, adjacent the Riverview Park & Zoo. The plant was initially built in 1922 and expanded in 1952, 1965 and 1995. The conventional treatment process includes coagulation, flocculation, sedimentation, filtration and chlorine disinfection and a process waste treatment facility. Aluminum sulphate (alum) is used as the primary coagulant. The current rated capacity of the plant is 104 ML/day.



**3. Water Storage Tanks and Reservoirs**

Treated water is stored at various locations throughout the City in underground reservoirs and elevated storage tanks. Storage is used to supplement supply during times of high water demand and in emergency situations such as firefighting. The water storage capacity in the system is 48.2 ML.

**4. Water Pumping Stations**

There are three individual pressure zones in Peterborough. Water supply is pumped from the plant or from the Water Street Pumping Station. Approximately one half of the City’s water supply is pumped using water-driven turbine pumps powered by the Otonabee River flow. There are four water booster pumping stations around the city, which pump water from lower pressure zones to higher pressure zones. Two of the most critical stations have diesel-powered backup in case of an electrical power outage.

**5. Water Distribution Piping Systems**

The water distribution system consists of approximately 408 kilometers of pipe (water mains), 2,123 hydrants and 26,003 individual water services. Hydrants are colour-coded according to the Ontario Fire Code requirements to indicate the available flow rate at a 20 p.s.i. residual pressure.

**List all water treatment chemicals used over this reporting period**

Chlorine  
Alum (Aluminum Sulphate)  
BW46M (Sodium Silicate)  
Hydrofluosilicic Acid  
N Silicate (Sodium Silicate)

**Were any significant expenses incurred to?**

- Install required equipment
- Repair required equipment
- Replace required equipment

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

**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
Aug 10	Free Chlorine Residual	0.03	mg/L	Flush & Re-sample	Aug 11
Nov 15	Underdose of Alum	29.9	Mg/L	Increased dose and verified feed equipment for functionality	Nov 15

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

	Number of Samples	Range of E.Coli Or Fecal Results (min #)-(max #)	Range of Total Coliform Results (min #)-(max #)	Number of HPC Samples	Range of HPC Results (min #)-(max #)
<b>Raw</b>	268	0 - 1200	0 - 1200	245	0 - 700
<b>Treated</b>	237	0 - 0	0 - 0	237	0 - 10
<b>Distribution</b>	1404	0 - 0	0 - 0	952	0 - 300

**Operational testing done under Schedule 7, 8 or 9 of Regulation 170/03 during the period covered by this Annual Report.**

	Number of Grab Samples	Range of Results (min #)-(max #)
<b>Turbidity</b>	11 x 8,760	0.065 – 0.279 NTU
<b>Chlorine</b>	8,760	1.08 – 2.08 mg/L
<b>Fluoride</b> (If the DWS provides fluoridation)	8,760	0.10 – 0.78 mg/L

*NOTE: For continuous monitors use 8760 as the number of samples.*

*NOTE: Record the unit of measure if it is not milligrams per litre.*

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

Date of legal instrument issued	Parameter	Date Sampled	Result	Unit of Measure
Aug 16, 2006	Suspended Solids waste process	Jan 05	1.4	mg/L
		Apr 03	9.0	
		Jul 06	7.3	
		Oct 09	8.7	

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

Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
<b>Antimony</b>	Jan 19	0.20	µg/L	No
<b>Arsenic</b>	Jan 19	0.40	µg/L	No



Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
Barium	Jan 19	25.2	µg/L	No
Boron	Jan 19	23.4	µg/L	No
Cadmium	Jan 19	0.003	µg/L	No
Chromium	Jan 19	0.5<MDL	µg/L	No
*Lead	Jan 19	0.05	µg/L	No
Mercury	Jan 19	0.02<MDL	µg/L	No
Selenium	Jan 19	1	µg/L	No
Sodium	Jan 19	12.2	mg/L	No
Uranium	Jan 19	0.047	µg/L	No
Fluoride	Annual Average	0.53	mg/L	No
Nitrite	Jan 18	0.005<MDL	mg/L	No
	Apr 20	0.005<MDL		
	Jul 20	0.005<MDL		
	Oct 13	0.005<MDL		
Nitrate	Jan 18	0.092	mg/L	No
	Apr 20	0.077		
	Jul 20	0.033		
	Oct 13	0.016		

\*only for drinking water systems testing under Schedule 15.2; this includes large municipal non-residential systems, small municipal non-residential systems, non-municipal seasonal residential systems, large non-municipal non-residential systems, and small non-municipal non-residential systems

**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 #)	Number of Exceedances
Plumbing	89	0.02– 24.10	2
Distribution	38	0.02 – 1.64	0

**Summary of Organic parameters sampled during this reporting period or the most recent sample results**

Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
Alachlor	Jan 19	0.11<MDL	µg/L	No
Aldicarb	Jan 19	0.30<MDL	µg/L	No
Aldrin + Dieldrin	Jan 19	0.067<MDL	µg/L	No
Atrazine + N-dealkylated metabolites	Jan 19	0.12<MDL	µg/L	No
Azinphos-methyl	Jan 19	0.21<MDL	µg/L	No
Bendiocarb	Jan 19	0.13<MDL	µg/L	No
Benzene	Jan 19	0.32<MDL	µg/L	No
Benzo(a)pyrene	Jan 19	0.004<MDL	µg/L	No

Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
Bromoxynil	Jan 19	0.33<MDL	µg/L	No
Carbaryl	Jan 19	0.16<MDL	µg/L	No
Carbofuran	Jan 19	0.37<MDL	µg/L	No
Carbon Tetrachloride	Jan 19	0.11<MDL	µg/L	No
Chlordane (Total)	Jan 19	0.11<MDL	µg/L	No
Chlorpyrifos	Jan 19	0.18<MDL	µg/L	No
Cyanazine	Jan 19	0.18<MDL	µg/L	No
Diazinon	Jan 19	0.081<MDL	µg/L	No
Dicamba	Jan 19	0.20<MDL	µg/L	No
1,2-Dichlorobenzene	Jan 19	0.41<MDL	µg/L	No
1,4-Dichlorobenzene	Jan 19	0.36<MDL	µg/L	No
Dichlorodiphenyltrichloroethane (DDT) + metabolites	Jan 19	0.14<MDL	µg/L	No
1,2-Dichloroethane	Jan 19	0.35<MDL	µg/L	No
1,1-Dichloroethylene (vinylidene chloride)	Jan 19	0.33<MDL	µg/L	No
Dichloromethane	Jan 19	0.35<MDL	µg/L	No
2-4 Dichlorophenol	Jan 19	0.15<MDL	µg/L	No
2,4-Dichlorophenoxy acetic acid (2,4-D)	Jan 19	0.19<MDL	µg/L	No
Diclofop-methyl	Jan 19	0.40<MDL	µg/L	No
Dimethoate	Jan 19	0.12<MDL	µg/L	No
Dinoseb	Jan 19	0.36<MDL	µg/L	No
Diquat	Jan 19	1<MDL	µg/L	No
Diuron	Jan 19	0.087<MDL	µg/L	No
Glyphosate	Jan 19	6<MDL	µg/L	No
Heptachlor + Heptachlor Epoxide	Jan 19	0.11<MDL	µg/L	No
Lindane (Total)	Jan 19	0.056<MDL	µg/L	No
Malathion	Jan 19	0.091<MDL	µg/L	No
Methoxychlor	Jan 19	0.14<MDL	µg/L	No
Metolachlor	Jan 19	0.092<MDL	µg/L	No
Metribuzin	Jan 19	0.12<MDL	µg/L	No
Monochlorobenzene	Jan 19	0.3<MDL	µg/L	No
Paraquat	Jan 19	1<MDL	µg/L	No
Parathion	Jan 19	0.18<MDL	µg/L	No
Pentachlorophenol	Jan 19	0.15<MDL	µg/L	No
Phorate	Jan 19	0.11<MDL	µg/L	No
Picloram	Jan 19	0.25<MDL	µg/L	No
Polychlorinated Biphenyls(PCB)	Jan 19	0.04<MDL	µg/L	No
Prometryne	Jan 19	0.23<MDL	µg/L	No
Simazine	Jan 19	0.15<MDL	µg/L	No



Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
THM (NOTE: show latest annual average)	Jan 18	86.5	µg/L	No
	Apr 20			
	Jul 20			
	Oct 13			
Temephos	Jan 19	0.31<MDL	µg/L	No
Terbufos	Jan 19	0.12<MDL	µg/L	No
Tetrachloroethylene	Jan 19	0.35<MDL	µg/L	No
2,3,4,6-Tetrachlorophenol	Jan 19	0.14<MDL	µg/L	No
Triallate	Jan 19	0.10<MDL	µg/L	No
Trichloroethylene	Jan 19	0.43<MDL	µg/L	No
2,4,6-Trichlorophenol	Jan 19	0.25<MDL	µg/L	No
2,4,5-Trichlorophenoxy acetic acid (2,4,5-T)	Jan 19	0.22<MDL	µg/L	No
Trifluralin	Jan 19	0.12<MDL	µg/L	No
Vinyl Chloride	Jan 19	0.17<MDL	µg/L	No

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

Parameter	Result Value	Unit of Measure	Date of Sample