

**Optional Annual Report Template**

<b>Drinking-Water System Number:</b>	220004787
<b>Drinking-Water System Name:</b>	Newcastle Water Treatment Plant
<b>Drinking-Water System Owner:</b>	Regional Municipality of Durham
<b>Drinking-Water System Category:</b>	Large Municipal Residential System
<b>Period being reported:</b>	January 1 to December 31, 2007

<p><b><u>Complete if your Category is Large Municipal Residential or Small Municipal Residential</u></b></p> <p><b>Does your Drinking-Water System serve more than 10,000 people? Yes [ ] No [✓]</b></p> <p><b>Is your annual report available to the public at no charge on a web site on the Internet? Yes [✓] No [ ]</b></p> <p><b>Location where Summary Report required under O. Reg. 170/03 Schedule 22 will be available for inspection.</b></p> <div style="border: 1px solid black; padding: 5px;">                 Regional Municipality of Durham                  Works Department                  605 Rossland Rd. E.                  5<sup>th</sup> Floor                  Whitby, Ontario                  L1N 6A3             </div>	<p><b><u>Complete for all other Categories.</u></b></p> <p><b>Number of Designated Facilities served:</b></p> <div style="border: 1px solid black; width: 100px; height: 20px; margin: 5px 0;"></div> <p><b>Did you provide a copy of your annual report to all Designated Facilities you serve? Yes [ ] No [ ]</b></p> <p><b>Number of Interested Authorities you report to:</b></p> <div style="border: 1px solid black; width: 100px; height: 20px; margin: 5px 0;"></div> <p><b>Did you provide a copy of your annual report to all Interested Authorities you report to for each Designated Facility? Yes [ ] No [ ]</b></p>
--	---

**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

**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 [ ]**

**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** – Durham Region Works Dept.
- 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** – Bi-annual newsletter to residents

**Describe your Drinking-Water Syst**

The **Newcastle Water Treatment Plant** is a surface water treatment facility that supplies quality potable water to approximately 8,524 consumers in the Communities of Newcastle and Newtonville in the Municipality of Clarington. Raw water is drawn from Lake Ontario through a 610 mm diameter intake pipe extending 1,064 m into the lake. The intake structure is located at a depth of 10 m.

The **treatment plant** facility has a rated capacity of 8,173 m<sup>3</sup>/day (1.8 MIGD) and utilizes the following unit processes and systems: zebra mussel control, screening, pre-chlorination, low lift pumping, coagulation, flocculation, direct filtration, post chlorination, and high lift pumping. The two (2) filters are dual media sand/anthracite type with air scour backwash. The process is monitored by a SCADA (Supervisory Control and Data Acquisition) system. The **distribution system** delivers the treated water through approximately 59 kilometres of watermains in two (2) pressure zones, and includes a reservoir, an elevated storage tank, and two booster stations. Additional chlorination is applied at the booster station facility.

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

Chlorine (disinfectant)  
 Sodium hypochlorite (disinfectant)  
 Polyaluminum chloride (coagulant agent)

**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**

None incurred in 2007.

**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
Jan 02	Lead (Plant)	0.135	mg/L	Resamples were taken at various location in the plant process and at a location in the distribution system. Additional samples were collected at the plant and in the distribution system on Jan 03, 08 and 10. Results of lead analysis performed on these samples met the Ontario Drinking Water Quality Standards.	Jan 02,03, 08,10
Jan 05	Lead (Plant)	0.275	mg/L	The sample that gave rise to this adverse was collected before completion of corrective actions for the Jan 02 adverse. It was determined that the source of lead in the samples collected from the treated water sampling line originated from the plumbing of that sampling line. A new treated water sampling line was installed. Subsequent lead analyses on the new sampling line met the Ontario Drinking Water Quality Standards	Jan 08, 09,10
May 08	Total Coliform (Distribution)	1	CFU/100mL	Resamples were taken upstream, downstream and at the location that gave rise to the adverse. Results of the analyses performed on the resamples met the Ontario Drinking Water Quality Standards.	May 08
Sep 08	Low Pressure (Distribution)	--	--	Watermain break was repaired and affected area was flushed. Chlorine residuals were measured and bacteriological samples were taken upstream, downstream, and at various locations within the affected area. Results of the analyses performed on the samples met the Ontario Drinking Water Quality Standards.	Sep 08, 09,10

**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 Results MF	Range of Total Coliform Results MF	E.Coli Results P/A	Total Coliform Results P/A	Number of HPC Samples	Range of HPC Results (min #)-(max #)	Number of BKG Samples	Range of BKG Results (min #)-(max #)
<b>Raw</b>	53	<1-20	<1-390	--	--	--	--	53	<1-2200
<b>Treated</b>	106	--	--	A	A	106	<1-6	--	--
<b>Distribution</b>	291	--	--	A	A	143	<1-5	--	--
	16	<1-<1	<1-1(1)*						

MF: Membrane Filter; P/A Presence/Absence; BKG: Background Bacteria; HPC: Heterotrophic Bacteria; M: Estimated Count

**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 – filter effluent</b>	8760	0.0 – 0.26 NTU
<b>Free Chlorine - Plant</b>	8760	0.91 – 4.
<b>Free Chlorine - Distribution</b>	1268	0.4 – 2.7
<b>Fluoride (If the DWS provides fluoridation)</b>	--	

*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
April 18, 2005	Raw Water			
	Gross Beta	Jan – Dec	0.07-0.13	Bq/L
	Tritium	Jan – Dec	2.1-12	Bq/L
	Treated Water*			
	Gross Alpha	Jan - Nov	<0.04	Bq/L
	Gross Beta	Jan – Nov	0.06-0.10	Bq/L
	Tritium	Jan - Nov	<5-16	Bq/L
	Cesium-134	Jan – Nov	<0.3	Bq/L
	Cesium-137	Jan – Nov	<0.3	Bq/L
	Cobalt-60	Jan – Nov	<0.3	Bq/L
Iodine-131	Jan – Nov	<0.3	Bq/L	

To date, the treated water radionuclides results for December have not been received. The results will be updates as the information becomes available.

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

Parameter	Sample Date	Result Value	Unit of Measure	Exceedance	No of Samples
Antimony	Feb 08 – Nov 08	<0.0004-0.0006	mg/L	No	4
Arsenic	Feb 08 – Nov 08	<0.0004-0.0006	mg/L	No	4
Barium	Feb 08 – Nov 08	0.0204-0.0252	mg/L	No	4
Boron	Feb 08 – Nov 08	0.02-0.022	mg/L	No	4
Cadmium	Feb 08 – Nov 08	<0.0001-0.0001	mg/L	No	4
Chromium	Feb 08 – Nov 08	<0.0001-0.0003	mg/L	No	4
Lead - Distribution	Jan 03 – May 10	<0.0007-0.0043	mg/L	No	9
Mercury	Feb 08 – Nov 08	<0.01	ug/L	No	4
Selenium	Feb 08 – Nov 08	<0.002	mg/L	No	4
Sodium	Jan 01 – Dec 03	12.6-15.2	mg/L	No	16
Uranium	Feb 08 – Nov 08	<0.002	mg/L	No	4
Fluoride	Jan 01 – Dec 03	0.07-0.18	mg/L	No	16
Nitrite	Jan 01 – Dec 03	<0.001-<0.05	mg/L	No	16
Nitrate	Jan 01 – Dec 03	0.21-0.69	mg/L	No	16

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

Parameter	Sample Date	Result Value	Unit of Measure	Exceedance	Number of Samples
Alachlor	May 17, Nov 21	<0.4	ug/L	No	2
Aldicarb	May 17, Nov 21	<3.5	ug/L	No	2
Aldrin + Dieldrin	May 17, Nov 21	<0.006	ug/L	No	2
Atrazine + N-dealkylated metabolites	May 17, Nov 21	<0.2	ug/L	No	2
Azinphos-methyl	May 17, Nov 21	<0.2-<0.3	ug/L	No	2
Bendiocarb	May 17, Nov 21	<3.0	ug/L	No	2
Benzene	May 17, Nov 21	<0.1	ug/L	No	2
Benzo(a)pyrene	May 17, Nov 21	<0.01	ug/L	No	2
Bromoxynil	May 17, Nov 21	<0.4	ug/L	No	2
Carbaryl	May 17, Nov 21	<0.2	ug/L	No	2
Carbofuran	May 17, Nov 21	<4.0	ug/L	No	2
Carbon Tetrachloride	May 17, Nov 21	<0.2	ug/L	No	2
Chlordane (Total)	May 17, Nov 21	<0.006	ug/L	No	2
Chlorpyrifos	May 17, Nov 21	<0.2	ug/L	No	2
Cyanazine	May 17, Nov 21	<0.2-<0.3	ug/L	No	2
Diazinon	May 17, Nov 21	<0.2	ug/L	No	2
Dicamba	May 17, Nov 21	<0.4	ug/L	No	2
1,2-Dichlorobenzene	May 17, Nov 21	<0.1	ug/L	No	2
1,4-Dichlorobenzene	May 17, Nov 21	<0.1	ug/L	No	2
Dichlorodiphenyltrichloroethane (DDT) + metabolites	May 17, Nov 21	<0.008	ug/L	No	2
1,2-Dichloroethane	May 17, Nov 21	<0.1	ug/L	No	2

1,1-Dichloroethylene (vinylidene chloride)	May 17, Nov 21	<0.3	ug/L	No	2
Dichloromethane	May 17, Nov 21	<0.5	ug/L	No	2
2,4-Dichlorophenol	May 17, Nov 21	<0.4	ug/L	No	2
2,4-Dichlorophenoxy acetic acid (2,4-D)	May 17, Nov 21	<0.8	ug/L	No	2
Diclofop-methyl	May 17, Nov 21	<0.4	ug/L	No	2
Dimethoate	May 17, Nov 21	<0.3	ug/L	No	2
Dinoseb	May 17, Nov 21	<0.5	ug/L	No	2
Diquat	May 17, Nov 21	<0.1	ug/L	No	2
Diuron	May 17, Nov 21	<0.2	ug/L	No	2
Glyphosate	May 17, Nov 21	<2.0	ug/L	No	2
Heptachlor + Heptachlor Epoxide	May 17, Nov 21	<0.008	ug/L	No	2
Lindane (Total)	May 17, Nov 21	<0.005	ug/L	No	2
Malathion	May 17, Nov 21	<0.2	ug/L	No	2
Methoxychlor	May 17, Nov 21	<0.009	ug/L	No	2
Metolachlor	May 17, Nov 21	<0.2	ug/L	No	2
Metribuzin	May 17, Nov 21	<0.2-<0.3	ug/L	No	2
Monochlorobenzene	May 17, Nov 21	<0.1	ug/L	No	2
Paraquat	May 17, Nov 21	<0.1	ug/L	No	2
Parathion	May 17, Nov 21	<0.2	ug/L	No	2
Pentachlorophenol	May 17, Nov 21	<0.4	ug/L	No	2
Phorate	May 17, Nov 21	<0.2	ug/L	No	2
Picloram	May 17, Nov 21	<0.7	ug/L	No	2
Polychlorinated Biphenyls(PCB)	May 17, Nov 21	<0.02	ug/L	No	2
Prometryne	May 17, Nov 21	<0.2	ug/L	No	2
Simazine	May 17, Nov 21	<0.2	ug/L	No	2
THM - Distribution (NOTE: show latest annual average)	Jan 01 – Dec 03	62	ug/L	No	12
Temephos	May 17, Nov 21	<3	ug/L	No	2
Terbufos	May 17, Nov 21	<0.2	ug/L	No	2
Tetrachloroethylene	May 17, Nov 21	<0.3	ug/L	No	2
2,3,4,6-Tetrachlorophenol	May 17, Nov 21	<0.5	ug/L	No	2
Triallate	May 17, Nov 21	<2.0	ug/L	No	2
Trichloroethylene	May 17, Nov 21	<0.1	ug/L	No	2
2,4,6-Trichlorophenol	May 17, Nov 21	<0.5	ug/L	No	2
2,4,5-Trichlorophenoxy acetic acid (2,4,5-T)	May 17, Nov 21	<0.5	ug/L	No	2
Trifluralin	May 17, Nov 21	<0.006	ug/L	No	2
Vinyl Chloride	May 17, Nov 21	<0.2	ug/L	No	2

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
--	--	--	--

**(Only if DWS category is large municipal residential, small municipal residential, large municipal non residential, non municipal year round residential, large non municipal non residential)**