2012 Annual Report

Drinking-Water System Number:	**210002272**
Drinking-Water System Name:	**Carp Well System**
Drinking-Water System Owner:	**City of Ottawa**
Drinking-Water System Category:	**Large Municipal Residential**
Period being reported:	**January 1st – December 31st 2012**

Complete if your Category is Large Municipal Residential or Small Municipal Residential

Does your Drinking-Water System serve more than 10,000 people? No

Is your annual report available to the public at no charge on a web site on the Internet? Yes

Location where Summary Report required under O. Reg. 170/03 Schedule 22 will be available for inspection.

Britannia Water Purification Plant
2731 Cassels St., Ottawa Ontario
K2B 1A8
Telephone: 613-828-2727

Complete for all other Categories.

Number of Designated Facilities served:

N/A

Did you provide a copy of your annual report to all Designated Facilities you serve?

N/A

Number of Interested Authorities you report to:

N/A

Did you provide a copy of your annual report to all Interested Authorities you report to for each Designated Facility?

N/A

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

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?

N/A

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 _____

Describe your Drinking-Water System

The Carp water system draws ground water from one of two wells located at the treatment facility. The source water has consistently been found to be clear of bacteriological and chemical contaminants. The source water has a moderate level of hardness and a noticeable concentration of naturally occurring hydrogen sulfide.

The purification process in Carp consists of the following steps:

- disinfection (**free** chlorine using sodium hypochlorite) which also oxidizes hydrogen sulfide
- storage (contact time & hydraulic storage)
- high-lift pumping into the distribution system

This treatment process results in water that is clear and safe to drink, although there is a noticeable sulphur taste that is of aesthetic concern to some customers.

Treated water is pumped through the distribution network with a free chlorine residual maintained throughout the supply system, sampled routinely at (2) distribution locations and continuously by a dedicated chlorine analyzer. All treatment, pumping, and storage systems are controlled by a dedicated SCADA computer system and monitored by certified water treatment operators 24 hours per day. On-line analyzers are also used to measure chlorine residual and turbidity of the treated water. A certified operator visits the well system twice per week to collect water samples and conduct on-site water quality tests.

List all water treatment chemicals used over this reporting period

Sodium Hypochlorite (liquid – 6%)

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

1. Pump Station Upgrade – A station upgrade was initiated to improve the pump suction piping, pump modifications and discharge relief system improvements. These upgrades are estimated to cost approximately $600,000 and are expected to be completed in 2012.

2. Station Flooding Repairs – Following a piping failure within the station in July, which resulted in the flooding of the pump room, a significant amount of equipment was required to be replaced or repaired. The cost of the required maintenance was $120,000.

Table 1 Adverse Water Quality events for the Carp Well System

Incident Date	Test Parameter and Location	Result	Unit of Measure	Corrective Action	Date of Resolution
12-Jul-12 AWQI# 107072	Sodium > 20 mg/L Carp treated & distribution samples	Treated= 65.8 Distribution= 65.1	mg/L	5 yr reporting	12-Jul-12
22-Jul-12 AWQI# 107367	Loss of pressure-Carp well System	0	psi	Boil water advisory, Repair pumps, flush & sample	25-Jul-12
25-Jul-12 AWQI# 107455	Total Coliform bacteria >0 215 Jensen fire hydrant (1 of 27 samples)	Total Coliform =3 E.Coli=0	MPN/100 mL	Flush and resample	26-Jul-12

Table 2 Microbiological testing done under 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)
Raw	176	0	0	174	<10 – 240
Treated	103	0	0	102	<10- 30
Distribution	235	0	0-3	206	<10 - 520

Table 3 Operational testing of treated water done under Schedule 7, 8 or 9 of Regulation 170/03 during this reporting period.

	Number of Grab Samples	Results (min - max)
Turbidity	105 + continuous	0.68 – 1.10 NTU
Chlorine	107 + continuous	0.72 – 1.40 mg/L
Fluoride (If the DWS provides fluoridation)	7	0.51 – 0.56 mg/L (naturally occurring in Well water)

Table 4 Summary of additional testing and sampling carried out in accordance with requirement of approval, order or other legal instruments.

Date of legal instrument issued	Parameter	Date Sampled	Result	Unit of Measure

Table 5 Summary of Inorganic parameters tested in treated water during this reporting period or the most recent sample results.

Parameter	Sample Date*	Result Value	Unit of Measure	Exceedance**
Antimony	Jan – Dec 2012	ND	mg/L	No
Arsenic	Jan – Dec 2012	ND	mg/L	No
Barium	Jan – Dec 2012	0.2940	mg/L	No
Boron	Jan – Dec 2012	0.1605	mg/L	No
Cadmium	Jan – Dec 2012	ND	mg/L	No
Chromium	Jan – Dec 2012	0.0005	mg/L	No
Lead	Jan – Dec 2012	ND	mg/L	No

Parameter	Sample Date*	Result Value	Unit of Measure	Exceedance**
Mercury	Jan – Dec 2012	ND	mg/L	No
Selenium	Jan – Dec 2012	ND	mg/L	No
Sodium	Jan – Dec 2012	60.0	mg/L	Yes - Advisory***
Uranium	Jan – Dec 2012	ND	mg/L	No
Fluoride	Jan – Dec 2012	0.55	mg/L	No
Nitrate	Jan – Dec 2012	ND	mg/L	No
Nitrite	Jan – Dec 2012	ND	mg/L	No

ND denotes non-detectable results
NOTE*: Inorganic parameters are usually tested monthly. The values in the table represent annual average values.
NOTE**: The determination of exceedances are based on all results in the data set.
NOTE***: Sodium concentration is above the advisory limit of 20.0 mg/L for drinking water. Notification of the sodium exceedance was made to the MOE and Public Health Department on July 12, 2012 for this water system (notification is required every 60 months).

Table 6 Summary of lead testing under Schedule 15.1 during this reporting period.

Location Type	Number of Samples	Range of Lead Results (min#) – (max #)	Number of Exceedances
Distribution	4	0.1 - 5.8 ppb	0

Table 7 Summary of Organic parameters sampled in treated water during this reporting period or the most recent sample results.

Parameter	Sample Date	Result Value	Unit of Measure	Exceedance*
Alachlor	March 01, 2012	ND	mg/L	No
Aldicarb	March 01, 2012	ND	mg/L	No
Aldrin + Dieldrin	March 01, 2012	ND	mg/L	No
Atrazine + N-dealkylated metobolites	March 01, 2012	ND	mg/L	No
Azinphos-methyl	March 01, 2012	ND	mg/L	No
Bendiocarb	March 01, 2012	ND	mg/L	No
Benzene	March 01, 2012	ND	mg/L	No
Benzo(a)pyrene	March 01, 2012	ND	mg/L	No
Bromoxynil	March 01, 2012	ND	mg/L	No
Carbaryl	March 01, 2012	ND	mg/L	No
Carbofuran	March 01, 2012	ND	mg/L	No
Carbon Tetrachloride	March 01, 2012	ND	mg/L	No
Chlordane (Total)	March 01, 2012	ND	mg/L	No

Parameter	Sample Date	Result Value	Unit of Measure	Exceedance*
Chlorpyrifos	March 01, 2012	ND	mg/L	No
Cyanazine	March 01, 2012	ND	mg/L	No
Diazinon	March 01, 2012	ND	mg/L	No
Dicamba	March 01, 2012	ND	mg/L	No
1,2-Dichlorobenzene	March 01, 2012	ND	mg/L	No
1,4-Dichlorobenzene	March 01, 2012	ND	mg/L	No
Dichlorodiphenyltrichloroethane (DDT) + metabolites	March 01, 2012	ND	mg/L	No
1,2-Dichloroethane	March 01, 2012	ND	mg/L	No
1,1-Dichloroethylene	March 01, 2012	ND	mg/L	No
Dichloromethane	March 01, 2012	ND	mg/L	No
2-4 Dichlorophenol	March 01, 2012	ND	mg/L	No
2,4-Dichlorophenoxy acetic acid (2,4-D)	March 01, 2012	ND	mg/L	No
Diclofop-methyl	March 01, 2012	ND	mg/L	No
Dimethoate	March 01, 2012	ND	mg/L	No
Dinoseb	March 01, 2012	ND	mg/L	No
Diquat	March 01, 2012	ND	mg/L	No
Diuron	March 01, 2012	ND	mg/L	No
Glyphosate	March 01, 2012	ND	mg/L	No
Heptachlor + Heptachlor Epoxide	March 01, 2012	ND	mg/L	No
Lindane (Total)	March 01, 2012	ND	mg/L	No
Malathion	March 01, 2012	ND	mg/L	No
Methoxychlor	March 01, 2012	ND	mg/L	No
Metolachlor	March 01, 2012	ND	mg/L	No
Metribuzin	March 01, 2012	ND	mg/L	No
Monochlorobenzene	March 01, 2012	ND	mg/L	No
Paraquat	March 01, 2012	ND	mg/L	No
Parathion	March 01, 2012	ND	mg/L	No
Pentachlorophenol	March 01, 2012	ND	mg/L	No
Phorate	March 01, 2012	ND	mg/L	No
Picloram	March 01, 2012	ND	mg/L	No
Polychlorinated Biphenyls(PCB)	March 01, 2012	ND	mg/L	No
Prometryne	March 01, 2012	ND	mg/L	No
Simazine	March 01, 2012	ND	mg/L	No
Trihalomethanes**	Jan – Dec, 2012	0.043	mg/L	No
Temephos	March 01, 2012	ND	mg/L	No
Terbufos	March 01, 2012	ND	mg/L	No
Tetrachloroethylene	March 01, 2012	ND	mg/L	No
2,3,4,6-Tetrachlorophenol	March 01, 2012	ND	mg/L	No

Parameter	Sample Date	Result Value	Unit of Measure	Exceedance*
Triallate	March 01, 2012	ND	mg/L	No
Trichloroethylene	March 01, 2012	ND	mg/L	No
2,4,6-Trichlorophenol	March 01, 2012	ND	mg/L	No
2,4,5-Trichlorophenoxy acetic acid (2,4,5-T)	March 01, 2012	ND	mg/L	No
Trifluralin	March 01, 2012	ND	mg/L	No
Vinyl Chloride	March 01, 2012	ND	mg/L	No

ND denotes non-detectable results
NOTE*: The determination of exceedances are based on all results in the data set.
NOTE**: The reported THM result is an annual average of the maximum value observed in each quarter.

Table 8 Inorganic or Organic parameters that exceeded half the standard prescribed in Schedule 2 of Ontario Drinking Water Quality Standards.

Parameter	Result Value	Unit of Measure	Date of Sample