

Chalk River Drinking Water System Quarterly Operations Report

Reporting Period: Q3 2011

Drinking Water System Number	210000666
Drinking Water System Name	Chalk River Drinking Water System
Drinking Water System Owner	Town of Laurentian Hills
Drinking Water System Category	Large Municipal Residential

1. Description of Drinking Water System

The Chalk River Drinking Water System serves the village of Chalk River, located within the Town of Laurentian Hills.

The water supply source for the Chalk River Water Treatment Plant is Corry Lake. Raw water is screened from the lake before being pumped to the water plant for treatment. The water treatment process includes chemically-assisted coagulation, flocculation and settling within a solids contact clarifier followed by filtration through sand and anthracite filters. Filtered water is then disinfected using liquid chlorine. Fluoride is then added to the treated water. Water is pumped into the elevated water storage tower (1380m³ capacity) disinfection contact time and then flows out to the distribution system, which includes about 12km of water mains

2. Non-Compliance with Legislation, Regulations, Approvals & Orders

AW Canada has made every effort during the reporting period to operate this water system in accordance with applicable laws and regulations. To the best of our knowledge, the following report truthfully and accurately reflects any and all matters of non-compliance regarding the ownership and operation of the Facility during the reporting period.

During this period, the Facility was operated in full compliance with the Act, the regulations and the Facility's approval, save and except for the following:

<input checked="" type="checkbox"/>	None during this period
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or

Requirement	Duration of Failure	Measures to Correct the Failure
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3. Reporting Requirements

Comparison of Flow Rates (All flows expressed in cubic meters per day, m³/d)

Flow from Corry Lake

Month	Average Flow	Maximum Flow	System (PTTW) Capacity
January	345	480	1,980 m ³ /d
February	352	525	
March	360	565	
April	333	563	
May	332	571	
June	385	605	
July	351	663	
August	269	549	
September	273	478	
October			
November			
December			
Average	332		
% of Capacity	16.8%	33.5%	

Flow to Clearwell

Month	Average Flow	Maximum Flow	System Capacity
January	326	463	1,987 m ³ /d
February	335	507	
March	321	555	
April	314	526	
May	313	545	
June	360	562	
July	341	636	
August	280	674	
September	265	451	
October			
November			
December			
Average	317		
% of Capacity	16.0%	33.9%	

Water Treatment Chemicals Used

12% NaOCl-sodium hypochlorite

Soda Ash
PAS-8
Hydrofluosilicic Acid (HFS)
Polymer (LT27AG)

Significant expenses incurred?

<input checked="" type="checkbox"/>	None during this period	
<input type="checkbox"/>	Install required equipment	
<input type="checkbox"/>	Repair required equipment	
<input type="checkbox"/>	Replace required equipment	

List any notice(s) in accordance with subsection 18(1) of the Act or section 16-4 of Schedule 16 of O.Reg.170/03 reported to Spills Action Centre?

<input checked="" type="checkbox"/>	None during this period
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Or

Incident Date (mm-dd-yy)	Parameter	Result	Corrective Action	Corrective Action Date (mm-dd-yy)

Microbiological Test Results (as per Schedule 10)

TC = Total Coliform
EC = *Escherichia coli*
HPC = Heterotrophic Plate Count
CFU = Colony Forming Units

Distribution	No. Of Samples	Min. Max.	
		Min.	Max.
TC (cfu/100ml)	39	0	0
EC (cfu/100ml)	39	0	0
HPC (cfu/1ml)	13	<2	8

Corry Lake	No. Of Samples	Min. Max.	
		Min.	Max.
TC (cfu/100ml)	13	2	40
EC (cfu/100ml)	13	0	5

Point of Entry	No. Of Samples	Min. Max.	
		Min.	Max.
TC (cfu/100ml)	13	0	0
EC (cfu/100ml)	13	0	0
HPC (cfu/1ml)	13	<2	4

Chemical Test Results (as per Schedule 13)

	Nitrate(mg/L)	Nitrite(mg/L)	THMs(mg/L)
Treated (POE)	0.1	<0.1	n/a
Distribution	n/a	n/a	0.114
LIMIT (annual)	10	1	0.100*

*Note that THM limit is based on a rolling annual average. See Section 6

Operational Test Results (as per Schedule 7)

Turbidity (NTU)	# of samples	Minimum	Maximum	Average
Filter #1	Continuous	0	0.79	0.08
Filter #2	Continuous	0	0.29	0.06

Chlorine (mg/L)	# of samples	Minimum	Maximum	Average
Treated (POE)	continuous	0.63	2.00	1.05
Distribution	105	0.24	1.50	0.89

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

<input checked="" type="checkbox"/>	None during this period
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or

Date of Order/C of A	Sample Type	Parameter	Number of Samples	Sample Date (mm-dd-yy)	Result Value

Summary of Inorganic (Schedule 23) Parameters

<input checked="" type="checkbox"/>	None during this period
<input type="checkbox"/>	See attached results

Summary of Organic (Schedule 24) Parameters

<input checked="" type="checkbox"/>	None during this period
<input type="checkbox"/>	See attached results

4. Quality Assurance/Quality Control

All microbiological and chemical analyses are sent to an accredited commercial laboratory for analysis.

Portable water quality analyzers are calibrated as per manufacturer's instructions.

5. Maintenance Summary

Plant Area/Equipment	Activity
Pumping Station	None

Chemical Systems	Repairs conducted on polyelectrolyte (polymer) feed pump
Electrical Systems	No maintenance required. No diesel genset on site
Instrumentation Systems	All water quality analyzers calibrated in-house on a weekly basis
Other	Upgrades, modifications continuing on SCADA system

6. Operating Problems

Q3 total trihalomethanes are 114µg/L. The annual limit is 100µg/L. The average for the last four quarterly results is 97.2µg/L

There are still a number of programming issues that are affecting the way in which the operators are running the water plant. A few are as follows:

- One filter train is inactive and cannot be operated manually (this one is a major issue)
- 'General meter failure' alarms on FIT 102 and 105
- Chemical pumps turning on and off when there is no water flow
- pH alarms should be warning alarms but are shutting down the system

The Owner and Stantec are making arrangements to repair the issues.

7. Health & Safety Items

No issues in Q3. Regular workplace inspections were conducted.

8. Proposed Maintenance, Alterations, or Replacements (Infrastructure)

It is recommended that the Town revisit the provision of backup power to the drinking water system.

It is also recommended that an investigation be done on having the water tower cleaned. There is likely a large amount of sediment at the bottom.

9. Other

Flow meter calibrations and water quality analyzer calibrations conducted in August/September