

March 17<sup>th</sup>, 2009

Mayor Emmerson and Members of Council,

The delivery of potable water in Ontario is regulated by the Ministry of the Environment (MOE) under the Safe Drinking Water Act which came into effect on June 1, 2003, as O.Reg. 170/03.

Schedule 22 of O.Reg. 170/03 requires that our elected officials have an understanding of the Town of Whitchurch-Stouffville drinking water systems and capacities. To that end the Public Works Department's has created a Schedule 22 2008 Summary Report for the reporting period of January 1 to December 31, 2008.

In accordance with Schedule 22 the Summary Report lists:

- The requirements of the Act, the regulations, the system approvals and any order that the systems fail to meet at any time during the period covered by the report and the duration of the failure(s);
- A description of the measures taken to correct the failure(s);
- A summary of quantities and flow rates of the water supplied during the reporting period, including monthly average and maximum daily flows and daily instantaneous peak flow rates to enable the owners of the systems to assess the capability of the systems to meet existing and planned uses of the systems;
- A comparison of the summary of quantities and flow rates to the rated capacity and flow rates approved for the systems.

Also included is supplementary information about the Town's three (3) small drinking water systems (Museum, Vandorf Community Centre & Lemonville Community Centre).

Inquiries regarding this report may be directed to Mr. Denis Chartrand, Manager of Operations or myself.

Sincerely,

Paul Whitehouse, C.E.T., C.M.M  
Director of Public Works

Attachment  
copy: David J. Cash, CAO



**TOWN OF WHITCHURCH-STOUFFVILLE**

*“Country Lifestyle Close to the City”*

**2008 Summary Report**

**for the**

**Community of Stouffville Water Distribution System**

**and**

**Communities of Ballantrae and Musselman Lake  
Water Distribution System**

**Regulatory Reporting of Municipal Drinking Water Systems  
Ontario Regulation 170/03**

37 Sandiford Drive, 4<sup>th</sup> Floor, Stouffville, Ontario, L4A 7X5  
(905)640-1900 • (905)895-2423 • FAX (905)640-7957

## **Introduction**

This 2008 “Summary Report” is produced with the goal of providing information to the Mayor and Members of Council an understanding of the town’s two large municipal drinking water systems status and capacities for the period of January 1<sup>st</sup> to December 31<sup>st</sup>, 2008. It is mandated under requirements of the Ministry of the Environment’s (MOE) Drinking Water Systems Regulation O.Reg. 170/03 as described in Schedule 22 of the regulation and addresses specifically the drinking water systems for the Community of Stouffville and the Communities of Ballantrae & Musselman Lake. We have also included supplementary information in this report about the Town’s three (3) small drinking water systems (Museum, Vandorf Community Centre & Lemonville Community Centre).

This document complements one prepared earlier this year entitled the “Annual Report” which generally describes the operation for the Town’s large municipal residential water distribution systems and details the drinking water quality for each of the two (2) large municipal drinking water systems mentioned above. The Annual Report is to be made available for viewing to the general public. The requirements and format for the Annual Report are established by the MOE under Section 11 of Ontario Regulation 170/03. The Annual Report may be viewed and copies are available at the Town of Whitchurch-Stouffville’s Public Works Department administrative office located at 37 Sandiford Drive, 4<sup>th</sup> Floor, Stouffville, Ontario and on the Town’s web site at [www.townofws.com](http://www.townofws.com)

## **Summary**

This report provides an overview of the legislative requirements under the Safe Drinking Water Act and the associated regulations. It also includes information on each of the large municipal residential drinking water distribution systems owned and operated by the Town. Attached to this report is a series of figures on the 2008 pumping history for the individual wells and systems serving the residents of Whitchurch-Stouffville. The comprehensive flow data and charts have been obtained from the Region of York and assist in assessing the capacity of the Town’s two (2) “Large Municipal Residential” water systems. This information has been included as a supplemental information to the report.

There have been no orders issued by the MOE to comply with the Act for the period of January 1, 2008 to December 31, 2008.

## **Legislative Requirements**

Since the issuance of the Walkerton Reports I and II in 2002, many legislative and regulatory changes have occurred for those supplying drinking water in Ontario. The following are the primary pieces of legislation that have directly affected the operation of the Town of Whitchurch-Stouffville’s water distribution systems.

### ***The Safe Drinking Water Act (2002)***

The Government of Ontario passed this Act in December 2002 in response to recommendations made by Commissioner Dennis O'Connor at the Walkerton Inquiry. It provided the legislative authority to implement the recommendations made in the Walkerton Part I and Part II reports. The Act expands on the existing provincial policy and practice and introduced new features to protect drinking water in Ontario. It is intended to protect human health through the control and regulation of drinking water systems and drinking water testing.

### ***Drinking Water Systems Regulation (O. Reg. 170/03)***

The Ontario Government enacted several new regulations under the Act. The Drinking Water Systems Regulation (O. Reg. 170/03) came into effect on June 1<sup>st</sup>, 2003. It replaced regulations 459/00 and 505/00 under the Ontario Water Resources Act (OWRA) which previously governed the operation of municipal drinking water systems. In addition, O. Reg. 169/03 was released to support O. Reg. 170/03 and prescribes the standards for numerous chemical/physical, microbiological and radiological parameters for testing which was previously detailed in the Ontario Drinking Water Standards under the OWRA.

The Ontario Regulation O. Reg. 170/03 distinguishes between municipal and non-municipal drinking water systems. The Town's two (2) municipal water distribution systems are presently classified as large residential systems under the regulation.

### ***Requirements of the Drinking Water Systems Regulation***

Owners and operators of municipal drinking water systems must:

- *Sample and test* - The frequency and the type of testing for various parameters and systems are outlined in the Regulation. Generally the Town collects water samples for testing twice per week for this purpose.
- *Use an accredited laboratory* - An accredited laboratory must be used for the testing of municipal drinking water samples. The Town and all the municipalities in York Region use the York/Durham Regional Laboratory. It operates under O.Reg. 248/03 which came into effect October 31, 2003.
- *Report adverse test results* - Any standard from Schedules 1 - 3 in O.Reg. 170/03 that has been exceeded is required to be reported to the Medical Officer of Health and the MOE both verbally and in writing upon detection and upon completion of corrective action.

- *Have certified operators or trained persons* - Certification of staff is required to operate systems. The level of certification needed is subject to the category designation of the system. Presently Whitchurch-Stouffville's two (2) large municipal water distribution systems are operated as level 1 systems with the Public Works Department having seven (7) fully certified operators.
- *Prepare an Annual Report* - An Annual Report must be prepared and made available to the Public for each large residential system. Amendments were introduced in 2006 which no longer require submission of the annual Report to the MOE.
- *Prepare an Annual Summary Report* - Schedule 22 requires a Summary Report to be produced annually for drinking water system owners and operators, including members of Council or municipal service boards. This report summarizes the requirements of the Safe Drinking Water Act, the regulations, system approvals and any order that the system failed to meet during the reporting period. For any failures the report must detail the corrective actions taken. The report must also include information about system capacities enabling owners and operators to determine future capabilities.
- *Lead Sampling Program* – On July 26<sup>th</sup>, 2007 further amendments were introduced requiring the Town to expand its lead sampling program. The purpose of the program is to further enhance the Province's water safety protection measures and to reduce potential levels of lead intake lead, especially for pregnant women and children six years and under. This sampling program in accordance with Schedule 15.1 of regulation O. Reg. 170/03.

### ***Engineer's Reports***

On January 9<sup>th</sup>, 2001 the Public Works Department received clarification from the MOE regarding the applicability of preparing an Engineer's Report. They advised that in a two-tier municipal system where the upper tier owns and operates the water treatment plant and any re-chlorination facilities within the system, and the lower tier municipalities own and operate their distribution systems only, the responsibility for ensuring preparation and submission of the Engineer's Report for the entire system remains with the upper tier municipality. This report must be prepared by a Professional Engineer who is not an employee of the drinking water system owner and must be in accordance with MOE's Terms of Reference. Please note that the Town of Whitchurch-Stouffville is the lower tier municipality and the Regional Municipality of York is classified as the upper tier municipality.

### ***Training and Certification***

In May 2004 a regulation regarding the training and certification of drinking water system operators known as O.Reg. 128/04, Certification of Drinking -Water System Operators and Water Quality Analysts, was enacted.

This regulation establishes the on-going training requirements for these operators. It details different types of licenses, re-issuance and transferability, overall and operator in charge responsibilities, record keeping and operations / maintenance manuals.

To obtain a Level one (1) license under this regulation, all new operators called "Operators in Training" (OIT), must complete an Entry Level Course of Study within the first 16 months of obtaining their OIT certificate. This consists of the completion of a forty (40) hour at home study/training course and successfully passing a written test. They then must attend a five (5) day in class training seminar and examination. Once these requirements are met, the operator's license is valid for three (3) years, allowing them time to meet the requirements needed for a Level One License.

### ***Drinking Water Licensing Program***

In May 2007 the MOE proclaimed Section 33 of the Safe Drinking Water Act which began the implementation process of the new Municipal Drinking Water Licensing Program as recommended by Justice O'Connor in Part II report of the Walkerton Inquiry. This addressed Justice O'Connor's concerns that owners of municipal drinking water systems obtain a license for the operation of their waterworks systems and that the MOE develop a drinking water quality management standard for Ontario.

The Town is required to obtain a license to operate each its two (2) large municipal residential drinking water systems and to incorporate the concept of quality management into our operations. The MOE, in conjunction with the Canadian Standards Association (CSA) developed the Drinking Water Quality Management System Standard (DWQMS). The Town is preparing a Quality Management System (QMS) that meets the requirements of all twenty-one (21) elements of the DWQMS.

In order for a Municipal Drinking water License to be issued the following items must be in place:

1. A Drinking Water Works Permit – Responsibility of The Region of York
2. A Permit to Take Water – Responsibility of the Region of York
3. A Financial Plan – Not required to be submitted for the initial License application in 2009.
4. An accepted Operational Plan – The Public Works Department is creating the Operational Plan based on the 21 elements of the DWQMS. A consultant has been hired by the Town to review the document and to conduct an internal audit.
5. Accreditation of the Operating Authority – The Public Works Department makes up the Operating Authority for the Town's drinking water systems. Accreditation is achieved following a successful third party audit of the Town's QMS. The MOE has hired the Canadian General Standards Board to review Operational Plans to ensure that it conforms to the DWQMS.

The Licensing of Municipal Drinking Water Systems Regulation (O. Reg. 188/07) specifies dates on or before which owners of municipal residential drinking water systems must submit to the ministry their operational plans, applications for drinking water works permits and applications for municipal drinking water licences. The Town of Whitchurch-Stouffville has until August 1<sup>st</sup> of 2009 to submit the Operational Plan. Subsequent submissions of operational plans and applications for licence renewals will be required through conditions placed on licenses.

## System Descriptions and Information

### The Communities of Ballantrae/Musselman Lake Water Distribution System

The Ballantrae/Musselman Lake water distribution system is classified as a Class 1 “Large Municipal Residential” system. The MOE Waterworks Number for this system is 260006737. This area is serviced by two (2) groundwater production wells and a pump house located at 15,341 McCowan Road. The water is treated with chlorine for disinfection and sodium silicate to keep iron and manganese in suspension. An elevated storage tank with a capacity of 2,271 cubic metres is situated on the Ninth Line.

The total volume of water taken from the production wells of the Ballantrae/Musselman Lake water supply system for the reporting period January 1<sup>st</sup>, 2008 to December 31<sup>st</sup>, 2008 was 386,861 cubic metres. The maximum permitted water withdrawal by the MOE is 1,598,875 cubic metres. The total volume of water supplied to the system represented approximately 24.1% of the maximum permitted withdrawal.

The maximum permitted daily water taking and the actual maximum recorded daily water taking are the following:

Well Number	Permitted Daily Withdrawal (Litres)	Actual Maximum Daily Withdrawal (Litres)	Percentage of Permitted Withdrawal during Peak Demand
Well #1	2,647,920	2,159,313 on June 25, 2008	81.5%
Well #2	2,647,920	2,163,813 on May 27, 2008	81.7%
Well #1 & 2	4,580,000	2,584,750 on October 20, 2008	56.4%

The average monthly flow rates, maximum daily flow and the allowable daily withdrawal are presented in Figure 17 situated in the appendix identified as page 16.

The “Daily Instantaneous Peak Flow” is recorded in litres for the period January 1 to December 31, 2008. Wells 1 and 2 are shown in graph form in Figure 18 and Figure 19 in the Appendices on page 17.

All flow data and graphs courtesy of The Region of York.

### The Community of Stouffville Water Distribution System

The Stouffville Water Distribution System is classified as a Class 1 "Large Municipal Residential" system. The MOE Waterworks Number for this system is 260003162. The Region of York uses five (5) wells to service the Community. Well #1 and well #2 and the associated pumping/treatment building are located at #6985 Main Street. Well #3 and its pumping/treatment building and elevated storage are located at 12519 Tenth Line. Well #5 and well #6, the in-ground reservoirs and the high lift pumping station, are situated at 13461 Highway 48. The treatment for the Stouffville wells includes the addition of chlorine for disinfection and sodium silicate to sequester iron and manganese at three (3) of the five (5) wells.

In November 2003, the Stouffville Master Water Servicing Study identified the need to create three (3) pressure zones within the Community to adequately provide consistent pressure throughout the entire system. Two pressure zones were added to the original single pressure zone system. One was created in the north-east quadrant of the Community and was implemented in November 2006. This pressure zone was created and is controlled by isolating strategically selected main line valves. This zone is not equipped with pressure control devices. A pressure zone was also created in the south-west quadrant of Stouffville in 2006 with installation of two (2) pressure control devices (pressure reducing valves).

To meet the pressure zone demands and to prepare for the need for an additional water supply to sustain growth and development within the Community, the Region of York completed the construction of large transmission watermains on the Tenth Line, Main Street and Bethesda Road, a booster pumping station on the Tenth Line and an elevated storage tank on Bethesda Road during 2006.

The total volume of water taken from the production wells for the reporting period January 1<sup>st</sup> to December 31<sup>st</sup>, 2008 was 2,190,596 cubic metres. The MOE allows The Region of York to take 5,197,133 cubic metres annually from production wells servicing the residents of the Community of Stouffville. The actual volumes of water taken from the Stouffville production wells for the period mentioned above represents approximately 42.1% of permitted annual withdrawal.

The maximum allowable daily water taking and the actual maximum recorded daily water taking are presented in the table below:

Well Number	Permitted Daily Withdrawal (Litres)	Actual Maximum Daily Withdrawal (Litres)	Percentage of Permitted Withdrawal during Peak Demand
Well # 1	2,946,240	2,727,500 on August 13, 2008	92.6%
Well # 2	2,946,240	2,766,375 on May 28, 2008	93.9%
Well # 3	2,946,240	2,616,125 on July 10, 2008	88.9%
Well # 5	2,289,600	1,845,250 on August 25, 2008	80.6%
Well # 6	3,110,400	1,997,375 on May 25, 2008	64.2%

The monthly average flow rates, maximum daily flow and permitted daily withdrawal are presented in Figure 67, 68 69 70 and 71. These are shown in the appendix and identified as page 62, 63 and 64.

The "Daily Instantaneous Peak Flow for Stouffville Wells #1, #2 #3, #5 and #6 for the period January 1 to December 31, 2008 appear in graph form in the appendix. Figures 72, 73, 74, 75 and 76 appear and are labelled as pages 65, 66 and 67.

All flow data and graphs courtesy of The Region of York.

### ***Small Drinking Water Systems***

In addition to the above large drinking water systems, the Town has three (3) systems classified as small municipal non-residential systems that do not serve a designated facility. These are the Whitchurch-Stouffville Museum, the Vandorf Community Centre and the Lemonville Community Centre. On December 1<sup>st</sup>, 2008 the MOE transferred responsibility for small drinking water systems to the Ministry of Health and Long Term Care. At that time new small drinking water system regulations, under the Health Protection and Promotion Act, came into effect: O. Reg. 318/08 (Transitional – Small Drinking Water Systems) and O. Reg. 319/08 (Small Drinking Water Systems).

Under the new regulations the Town's small drinking water facilities will be inspected by the Region of York Public Health Department. Public Health inspectors will conduct a site specific risk assessment for each facility to determine what needs to be done to keep each site safe and will issue a directive for each system. These assessments will be conducted in 2009 and will reflect the customized approach being taken for each small drinking water system rather than using a one size fits all approach which was used in the past. The transitional Regulation 318/08 will apply until a directive has been

issued and once this has been done the system will become subject to O. Reg. 319/08. The requirements under O. Reg. 318/08 are similar to those in O. Reg. 252/05 which had been in effect prior to being revoked as of December 1<sup>st</sup>, 2008.

# APPENDIX