

Summary Report for York Region Drinking-Water Systems

Mandated under the Safe Drinking Water Act (2002)

Reporting Period of January 1 – December 31, 2005

**Presented to the York Region Transportation and Works Committee and
York Regional Council**



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1.0 Introduction

The purpose of this “Summary Report” is to provide the owners with an understanding of the Regional Municipality of York’s (York Region) drinking-water systems status and capacities for the reporting period of January 1 – December 31, 2005. It has been created to fulfill the requirements outlined under Schedule 22 of the Ministry of the Environment’s Drinking Water Systems Regulation (O. Reg. 170/03).

The “Annual Report”, which details the quality of York Region’s drinking water, has been completed separately in order to fulfill Section 11 of O.Reg. 170/03. This report will be available on the York Region Website and through the Water and Wastewater Branch by February 28th, 2006.

2.0 Executive Summary

York Region is responsible for the production, treatment and storage of drinking water to the communities of Georgina, Aurora, East Gwillimbury, Newmarket, Whitchurch-Stouffville, King Township, and parts of the City of Vaughan. York Region is also responsible for the transmission of drinking water from the City of Toronto to the communities of Richmond Hill, Markham, part of City of Vaughan and Aurora.

This report has been created to fulfill the requirements outlined under Schedule 22 of the Ministry of the Environment's Drinking Water Systems Regulation (O. Reg. 170/03). It has been produced to provide owners and operators an opportunity to assess the capacity of York Region's drinking water systems.

The report provides a summary of the general legislative requirements in relation to the Safe Drinking Water Act and associated regulations, a review of the individual drinking water systems and a series of figures on the 2005 pumping history for the individual wells and systems in York Region.

In 2005, the Yonge Street Aquifer (YSA) met all of the limits imposed by the Permit to Water with the only exception of the annual daily average, which was 3% above the allowable limit. This issue was previously identified and will be resolved when the connection to the Region of Peel lake-based supply is completed in the spring 2007. Opportunities to advance this schedule are currently under review by staff. Discussions with the Ministry of Environment have already commenced to review the practicality of this limit and the feasibility of amending the permit. This limit was originally derived from an elementary modelling work in 1993. Current work suggests that groundwater levels in the YSA have stabilized and modelling predictions suggest that a higher annual average is sustainable.

Instantaneous peak flow rates have been plotted as required in Schedule 22 in the Regulation 170/03. Within York Regions Drinking Water System there were 19 wells in which the instantaneous peak flow rate was over the PTTW limit for the period of January 1, 2005 to December 31, 2005. On average the recorded peak flows over the PTTW limit were less than 5 minutes and are associated with operational pump start up. The peak flows over the PTTW limit are identified and explained in each of the '*Daily Instantaneous Peak Flow*' graphs. Scheduled operational maintenance contributed to the reduction of the peak flow rates, improving the overall operations of the water system.

There have been no Orders issued by the Ministry of the Environment under the Safe Drinking Water Act (2002) or the Ontario Regulation 170/03 for the period of January 1, 2005 to December 31, 2005.

Maximum flow daily withdrawal data for the reporting period of January 1 – December 31, 2005 for each drinking water system is contained within the respective appendix.

3.0 Legislative Requirements

3.1 The Safe Drinking Water Act (2002)*

In Part II of the Report of the Walkerton Inquiry, Commissioner Dennis O'Connor recommended that the Ontario government enact a Safe Drinking Water Act to deal with matters related to the treatment and distribution of drinking water.

The government of Ontario passed the Safe Drinking Water Act (2002) in December 2002. The Act expands on existing policy and practice and introduces new features to protect drinking water in Ontario. The Act's purpose is to protect human health through the control and regulation of drinking-water systems and drinking-water testing. The Act also provides legislative authority to implement 50 of the 93 recommendations made in Commissioner O'Connor's Part Two Report. The majority of the Act came into force on June 1, 2003 along with the Drinking Water Systems Regulation (O.Reg. 170/03).

Two key requirements of the Safe Drinking Water Act are the statutory standard of care and a municipal drinking-water license – neither of which have currently been incorporated into a regulation.

3.2 The Drinking Water Systems Regulations

3.2.1 Drinking-Water Systems Regulation (O.Reg. 170/03)

The Ontario government enacted the several new regulations under the Act. The Drinking-Water Systems Regulation (O.Reg. 170/03) came into effect on June 1, 2003. This regulation replaced the 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 161 chemical/physical, microbiological and radiological parameters for testing which was previously detailed in the Ontario Drinking Water Standards (ODWS) under the OWRA.

The O.Reg. 170/03 distinguishes between municipal and non-municipal drinking water systems. There are four types of municipal drinking water systems classified under the regulation outlined in Table 1.

Table 1: Municipal Residential Drinking Water System Classification and Definition under O.Reg. 170/03

System Classification	Definition
Small residential systems	Serving less than 100 homes
Large residential systems	Serving more than 101 homes
Small non-residential systems	• does not serve a major residential development • is not capable of supplying drinking water at a rate of more than 2.9 litres per second, and • serves a designated facility or public facility
Large non-residential systems	• Serving a major residential development (4 or more homes) • a trailer park or campground that has more than five service connections

York Region is responsible for operating both small and large municipal systems. The only small municipal residential system within York Region's operational jurisdiction is the Ansnorveldt system in King Township. All remaining municipal systems, with the exception of the York Water System, are considered large municipal residential drinking water systems.

The York Water System is a further delineation of municipal residential drinking water systems in O.Reg. 170/03 called the 'large municipal system receiving water from a large municipal drinking water system'. The York Water System is strictly a transmission system that receives all of its water from the City of Toronto and eventually the Region of Peel. As such, there are special considerations under the Act and regulations for this situation.

3.2.2 Requirements of the Drinking Water Systems Regulation

Owners and operators of municipal drinking water systems must:

- *Sample and test* – a frequency of testing has been outlined within the regulation specific to the type and size of each system classification
- *Use an accredited laboratory* – an accredited laboratory must be used for the testing of municipal drinking water samples. A specific regulation for laboratories was released and came into effect on October 1, 2003 (O.Reg. 248/03) which details their responsibilities for QA/QC.

- *Report adverse test results* – any standards from Schedules 1 – 3 in O.Reg. 169/03 that have been exceeded are required to be reported to the Medical Officer of Health and the Ministry of the Environment both verbally and in writing upon detection and upon completion of corrective action.
- *Obtain an approval and permit to take water* – an approval must be obtained from the Ministry of the Environment for all municipal drinking water systems.
- *Have a professional engineer certify some systems* – municipal non-residential systems are required to have an engineer certify compliance with the regulations.
- *Have certified operators or trained persons* – certification of staff is required depending on the category of the system in which they are working. A proposed regulation regarding certification and training of waterworks operators has been released but is not yet in force.
- *Prepare an annual report* – An Annual Report (Section 11, O.Reg. 170/03) must be prepared and made available to the public. This report replaces the Quarterly Reports that existed under the OWRA previously. This report details the quality of the water in a system during the reporting period.
- *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 must summarize the requirements of the SDWA, 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.

**Adapted from the Ministry of the Environment's Background Document entitled "4478e Roles and responsibilities of owners and operators of municipal drinking-water systems".*

3.2.3 Exemptions for the York Water System

The York Water System has a unique classification under the SDWA and O.Reg. 170/03 – it is considered a 'large municipal residential system that obtains all of its water from a large municipal residential system'. As such, there are many requirements of O.Reg. 170/03 that do not apply to its operation as a drinking water system.

The exemptions that the York Water System is afforded due to the type of system include the exemption from some of the corrective action requirements under Schedule 17 of O.Reg. 170/03 in response to an adverse test result. An approval exemption was obtained from the MOE by York Region and the City of Toronto. The original exemption obtained had a one year approval and expired on July 1, 2004. Another

exemption has been obtained from the MOE with the same stipulations and it is valid for two years until July 2, 2006. The MOE has posted draft amendments to O.Reg. 170/03 that would make this exemption permanent for the YWS. It is anticipated that these amendments will be finalized before the current exemption expires.

The York Water System does not provide any treatment to the drinking water it supplies. The system follows a drinking water testing schedule, as outlined in O.Reg. 170/03, and monitors its chlorine residual on a daily basis.

3.3 Training and Certification

A regulation regarding training and certification for operators of drinking-water systems was released in May 2004.

Ontario Regulation 128/04 (O.Reg. 128/04), Certification of Drinking-water System Operators and Water Quality Analysts, under the SDWA revoked and replaced the previous regulation, Ontario Regulation 435/93 (OWRA) for waterworks operators.

O.Reg. 128/04 was introduced with the intention that portions of the regulation were in effect immediately, while others would be phased in over a two year window. Significant changes were made from O.Reg. 435/93 to O.Reg. 128/04 with regards to Operators in Training (OITs), Grandparented operators and training hours.

3.3.1 OITs

Under the new regulation, OITs issued under O.Reg. 128/04 will be valid for 16 months (without participation in MOE approved course) or three years (with participation in MOE approved course). At the point of expiration, the operator must obtain a Class I certificate or apply for an extension of the OIT provided that there was not enough experience obtained in any one discipline to obtain a Class I certificate (one year experience in Water Treatment and Water Distribution must be demonstrated to obtain a Class I certificate). It should be noted that although this requirement is immediate, the MOE has not defined or made available the approved course that is referenced in O.Reg. 128/04.

Current OITs will be valid until August 2006 or 2007, depending on their expiration date under the previous regulation.

A special classification of OIT has been designed for summer students. The OIT issued for summer students will not require that an MOE approved course be completed and will be valid only for those students working four months or less in a seven month period. The summer student OIT is valid for twelve months from issue. This arrangement is only valid for a maximum of four years. This portion of the regulation came into effect on August 1, 2005.

3.3.2 Grandparented Operators

‘Grandparented’ operators refer to operators that had their certificates granted under previous regulations without the requirement to complete and pass examinations. Under O.Reg. 128/04, any grandparented operator is required to submit to an examination of some sort by May 2006. If an operator is designated the ‘Overall Responsible Operator’ under O.Reg. 128/04 (these are the Chief Operators in York Region) and they have been grandparented under previous legislation, they were required to complete and pass an examination by May 2005 to maintain their certificates. All other grandparented operators have until May 2006 to complete and pass an examination to maintain their certificates.

3.3.3 Certified Operators

Operators that were certified under O.Reg. 435/93 will automatically be given the same certification level under O.Reg. 128/04. There has been an additional type of certificate named under O.Reg. 128/04 – Water Treatment, Water Distribution, and Water Distribution and Supply. All certificates granted as ‘Water Distribution’ under O.Reg. 435/93 will be considered ‘Water Distribution and Supply’ certificates under O.Reg. 128/04.

Training requirements for certified operators has changed from the mandatory 40 hours under O.Reg. 435/93 to the following, under O.Reg. 128/04:

Level	Training Requirements
Class I	30 hours (7 continuous education, 23 on-the-job)
Class II	35 hours (12 continuous education, 23 on-the-job)
Class III	40 hours (14 continuous education, 26 on-the-job)
Class IV	50 hours(14 continuous education, 36 on-the-job)

Training hours have been broken down by facility classification, as well as into specific learning formats (continuous education and on-the-job). This portion of O.Reg. 128/04 is effective from August 1, 2005 to

August 1, 2007 and there has been little guidance material provided by the MOE to define the course curriculum or learning types specified in the regulation.

3.3.4 Facility Classification

As a requirement under O.Reg. 128/04, York Region applied for facility classification under the new regulation and all facilities have been reclassified by the MOE. In many cases, the facility classification was not changed.

3.3.5 Proposed Drinking Water Quality Management System Standard

The MOE, in conjunction with the Canadian Standards Association (CSA), has developed the draft Drinking Water Quality Management Standard (DWQMS) to which operating authorities will be required to be accredited to by a third party. The draft was released in October 2004 and workshops were held by the CSA throughout October and November 2004. A second draft was issued in November 2005 and the comment period closed on January 27th, 2006.

The DWQMS is modelled after the current ISO 9001:2000 standard and will require the development of operational plans and procedures for all drinking water systems in Ontario. In addition, there will be a requirement for the assessment of processes for critical control points – points in the process where possible contamination could occur if not controlled with procedures.

It is proposed that the DWQMS will begin being implemented in late 2006 but there have been no firm targets established by the MOE to date.

Currently, the drinking water systems operated by York Region's Water and Wastewater Branch are registered to the ISO 9001:2000 standard and there is predicted to be little impact on the current systems.

4.0 Drinking-Water Systems Information

4.1 Ansnorveldt

York Region operates a water supply system to service Ansnorveldt, Township of King, under authority of a Certificate of Approval (C of A) as issued by the Ontario Ministry of the Environment (MOE). The C of A includes reference to the valid Permit To Take Water (PTTW) also issued by the MOE. Details of the C of A and PTTW and other relevant classification information are presented in Table 1.

In 2005 the Ansnorveldt drinking water supply underwent facility upgrades. These system upgrades included the installation and commissioning of a new Supervisory Control and Data Acquisition (SCADA) system.

TABLE 1: Ansnorveldt Water Supply – Summary of Approvals and Permit

Current Certificate of Approval Number: Issue Date:	3419-6CCP6P May 27, 2005
Current Permit to Take Water Number: Issue Date: Expiry Date:	02-P-3050 June 21, 2002 March 31, 2012
MOE Waterworks Number:	260002213
System Classification:	Water Distribution II (WDII)

4.1.1 Water Taking

The PTTW for the Ansnorveldt Water Supply System allows York Region to withdraw up to 285,120 litres per day from production wells 1 and 2.

York Region monitors the water taking through flow meters placed downstream of each production well. The flow is monitored on a continuous basis by SCADA to ensure that the regulated flows are not exceeded.

4.1.2 Measuring Points

A flow meter is in place downstream of each production before the water is combined. The flow meters record the instantaneous flow rate and the total volume of water that has passed through the meter. The flow meters are calibrated on an annual basis to meet the monitoring conditions of the C of A. Flow data is retrieved and stored by two methods in York Region. This approach provides York Region with the opportunity to compare and contrast data should one method suddenly fail due to power failures or by other means.

1. York Region staff manually record the flow rates and total flow data on regular operational visits to the well sites. Average flow rates are also calculated using records of total flow and number of operating pump hours. This 'manual' data was used to generate the maximum daily withdrawal and monthly average flow tables and figures.
2. The flow meters are also connected to the Supervisory Control and Data Acquisition (SCADA) system so that data can be monitored remotely and stored electronically. This data was used to generate the instantaneous peak flow rate figures.

4.1.3 Water Withdrawal

The total volume of water taken from the production wells of the Ansnorveldt Water Supply system for the reporting period of January 1 – December 31, 2005 was 20,005,000 litres. This volume is less than the maximum permitted withdrawal as prescribed in the PTTW.

The maximum allowable daily water taking and the actual maximum recorded daily water taking are presented in Table 2.

TABLE 2: Allowable and Actual Maximum Daily Withdrawal from the Ansnorveldt Production Wells for January 1 – December 31, 2005

Well Number	Allowable Daily Withdrawal (Litres)	Actual Maximum Daily Withdrawal (Litres)
Well 1	100,800	28,000 (June 06,2005)
Well 2	184,320	123,000 (June 01,2005)

The monthly average flows, the maximum daily withdrawals, and the allowable daily withdrawal for the reporting period of January 1 – December 31, 2005 are shown in Figure 1a and 1b. The actual dates of the peak monthly demands are summarized in the Appendices.

Figure 1a: Ansnorveldt Well No. 1
Monthly Average Flow and Monthly Maximum Flow
2005

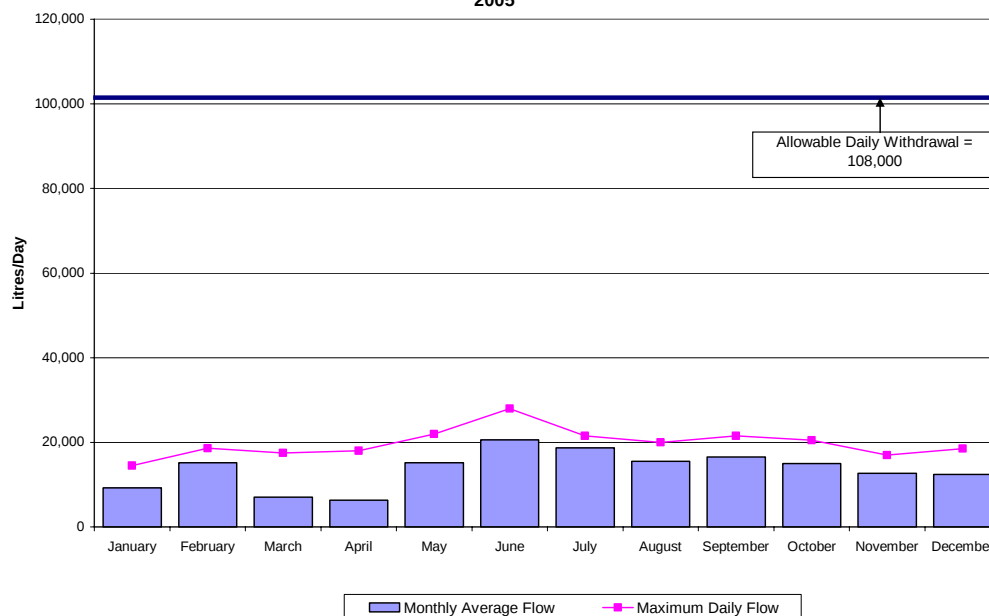
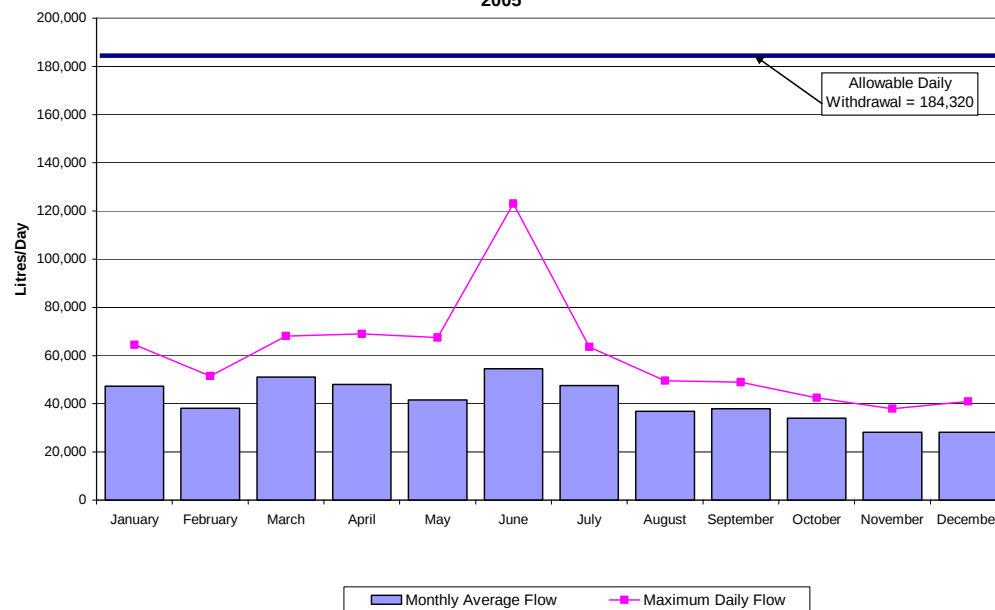


Figure 1b: Ansnorveldt Well No. 2
Monthly Average Flow and Maximum Daily Flow
2005



The actual volumes of water taken from the Ansnorveldt production wells during January 1 – December 31, 2005 did not exceed the allowable daily withdrawal volumes.

Figure 2a and 2b below show the 'Daily Instantaneous Peak Flow (litres)' for January 1 to December 31, 2005 for Ansnorveldt production wells 1 and 2.

Figure 2a: Ansnorveldt Well No. 1
Daily Instantaneous Peak Flow
2005

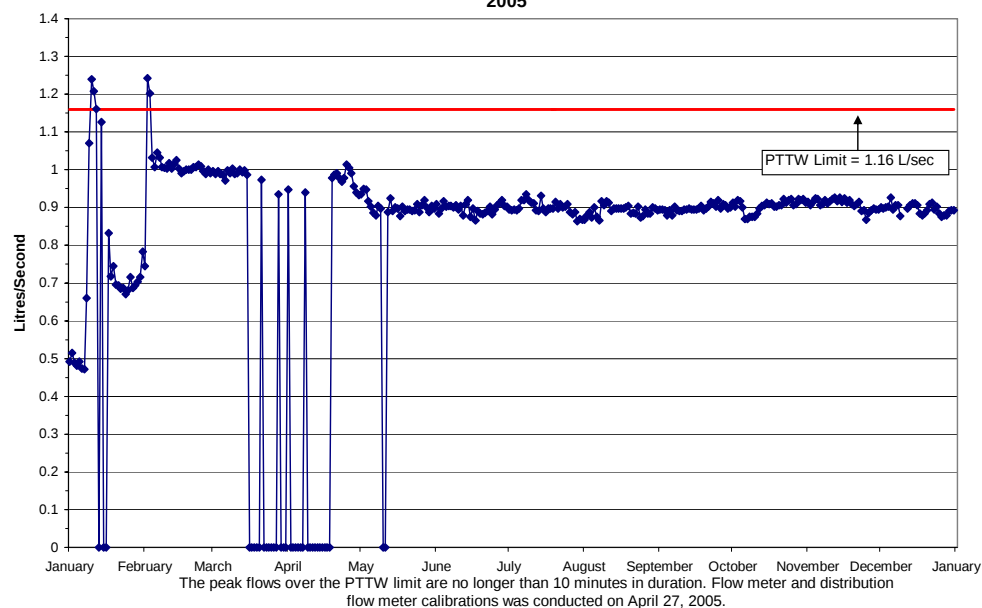
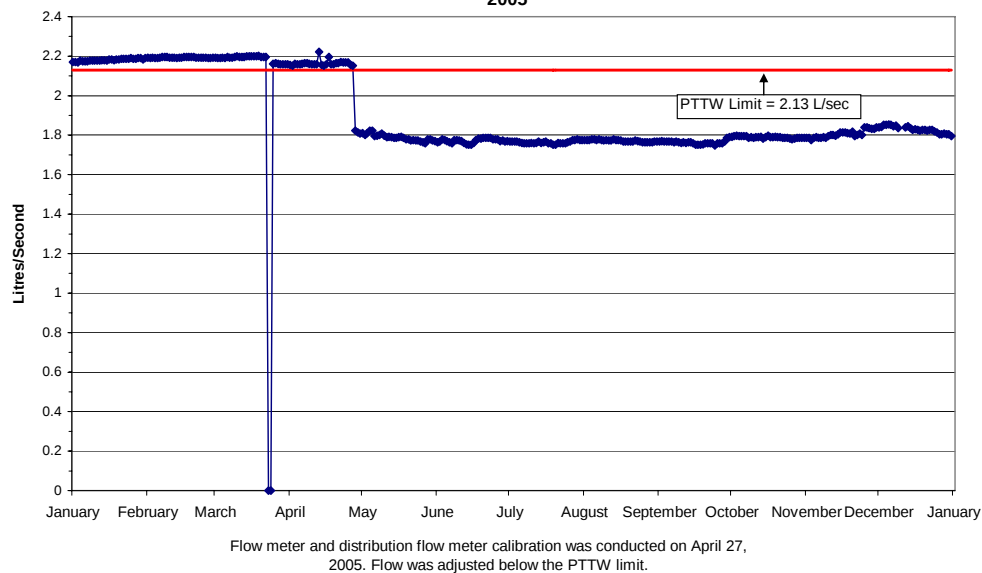


Figure 2b: Ansnorveldt No. 2
Daily Instantaneous Peak Flow
2005



4.2 Aurora

York Region operates a water supply system to service the Town of Aurora under authority of a Certificate of Approval (C of A) as issued by the Ontario Ministry of the Environment (MOE). The C of A includes reference to the valid Permit To Take Water (PTTW) also issued by the MOE. Details of the C of A and PTTW and other relevant classification information are presented in Table 1. The C of A requirements have been commissioned at Aurora wells 5 and 6 and the C of A upgrades for Aurora wells 1 to 4 have been completed.

TABLE 1: Aurora Water Supply – Summary of Approvals and Permit

Current Certificate of Approval Number: Issue Date:	4950-67ELQN January 6, 2005
Current Permit to Take Water Number: Issue Date: Expiry Date:	6623-68QQ6L March 31, 2005 March 31, 2015
MOE Waterworks Number:	220002440
System Classification:	Water Distribution III (WD III)

4.2.1 Water Taking

The PTTW for the Aurora Water Supply System allows York Region to withdraw up to 31,618,944 litres per day from all production wells.

York Region monitors the water taking through flow meters placed downstream of each production well. Flow is monitored on a continuous basis to ensure that the regulated flows are not exceeded.

4.2.2 Measuring Points

Flow meters are in place downstream of each production well. The flow meters record the instantaneous flow rate and the total volume of water that has passed through the meter. The flow meters are calibrated on an annual basis to meet the monitoring conditions of the C of A.

Flow data is retrieved and stored by two methods in York Region. This approach provides York Region with the opportunity to compare and contrast data should one method suddenly fail due to power failures or by other means.

1. York Region staff manually record the flow rates and total flow data on regular operational visits to the well sites. Average flow rates are also calculated using records of total flow and number of operating pump

hours. This 'manual' data was used to generate the maximum daily withdrawal and monthly average flow tables and figures.

2. The flow meters are also connected to the Supervisory Control and Data Acquisition (SCADA) system so that data can be monitored remotely and stored electronically. This data was used to generate the instantaneous peak flow rate figures.

4.2.3 Water Withdrawal

The total volume of water taken from the production wells of the Aurora Water Supply system for the reporting period of January 1 – December 31, 2005 was 5,572,959,000 litres. This volume is less than the maximum permitted withdrawal as prescribed in the PTTW.

The maximum allowable daily water taking and the actual maximum recorded daily water taking are presented in Table 2.

TABLE 2: Allowable and Actual Maximum Daily Withdrawal from the Aurora Production Wells for January 1 – December 31, 2005

Well Number	Allowable Daily Withdrawal (Litres)	Actual Maximum Daily Withdrawal (Litres)
Well 1	3,273,120	2,918,000 (January 12, 2005)
Well 2	5,891,760	4,795,000 (January 05, 2005)
Well 3	5,237,136	5,235,000 (January 05, 2005)
Well 4	7,855,632	7,260,000 (April 27, 2005)
Well 5	5,891,760	5,034,00 (September 19, 2005)
Well 6	3,469,536	2,725,500 (May 25, 2005)

The average monthly flow rates, the maximum daily flows, and the allowable daily flows are presented in Figures 1a, 1b, 1c, 1d, 1e, and 1f. The actual dates of the peak monthly demands are summarized in the Appendices.

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Figure 1a: Aurora Well No. 1
Monthly Average Flow and Maximum Daily Flow
2005

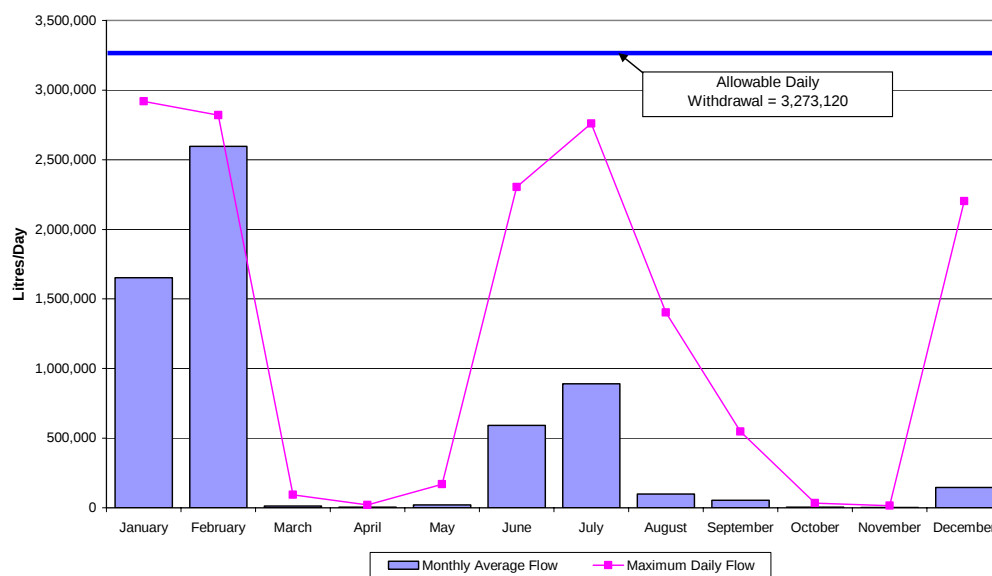
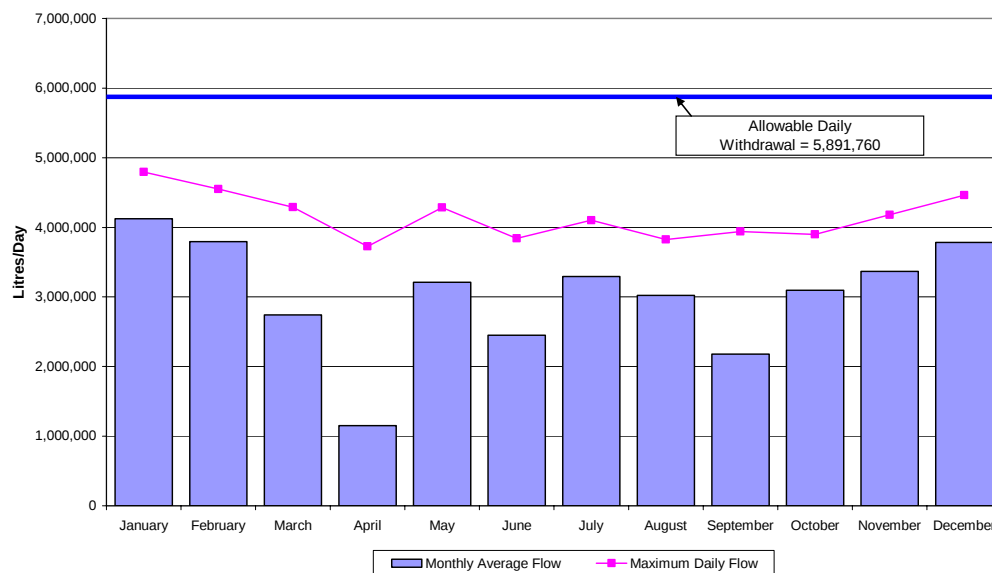
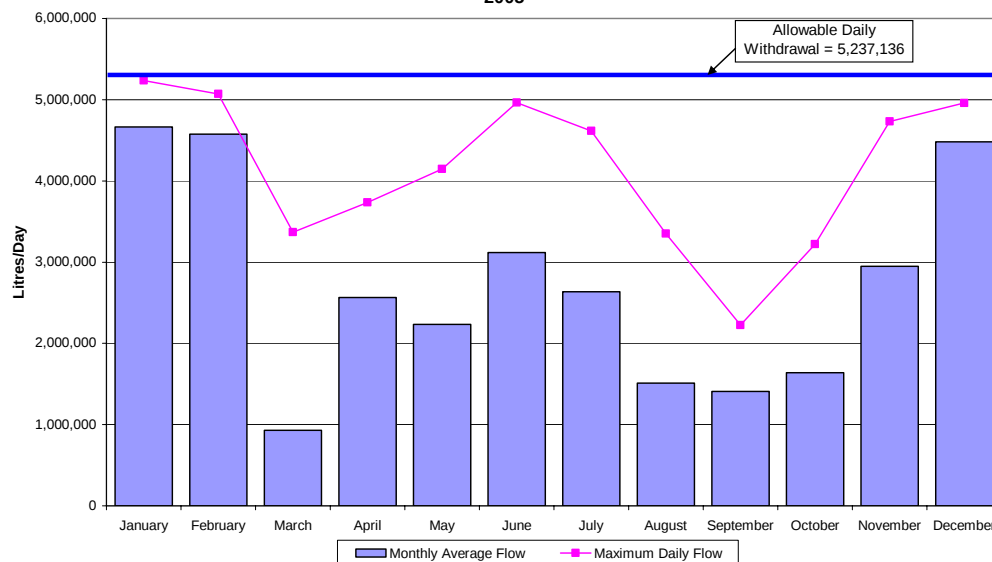


Figure 1b: Aurora Well No. 2
Monthly Average Flow and Maximum Daily Flow
2005



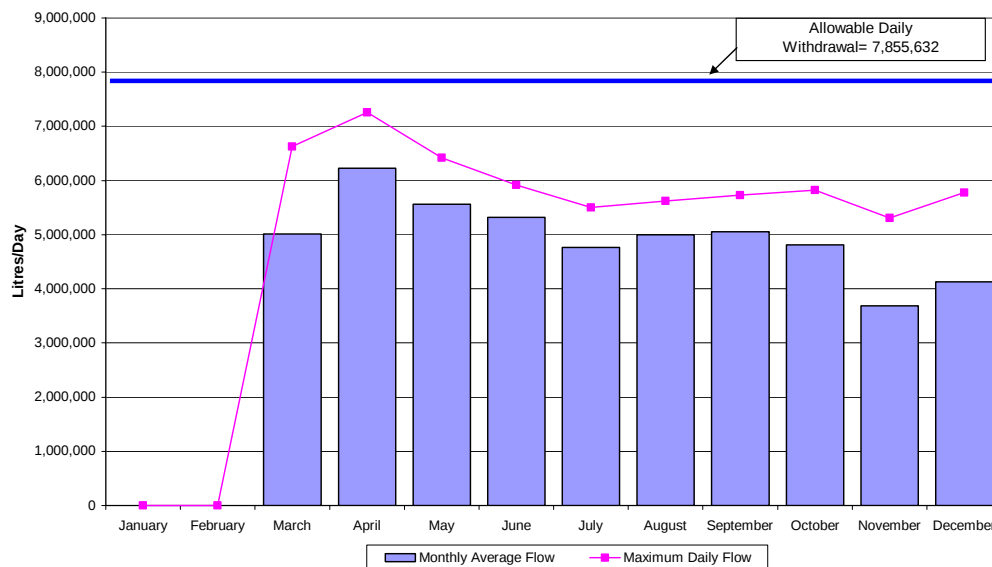
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Figure 1c: Aurora Well No. 3
Monthly Average Flow and Maximum Daily Flow
2005



The increased demand in January and February was due to Aurora Well No. 3 being offline.

Figure 1d: Aurora Well No. 4
Monthly Average Flow and Maximum Daily Flow
2005



The well was offline from January 1 to March 2, 2005

Figure 1e: Aurora Well No. 5
Monthly Average Flow and Maximum Daily Flow
2005

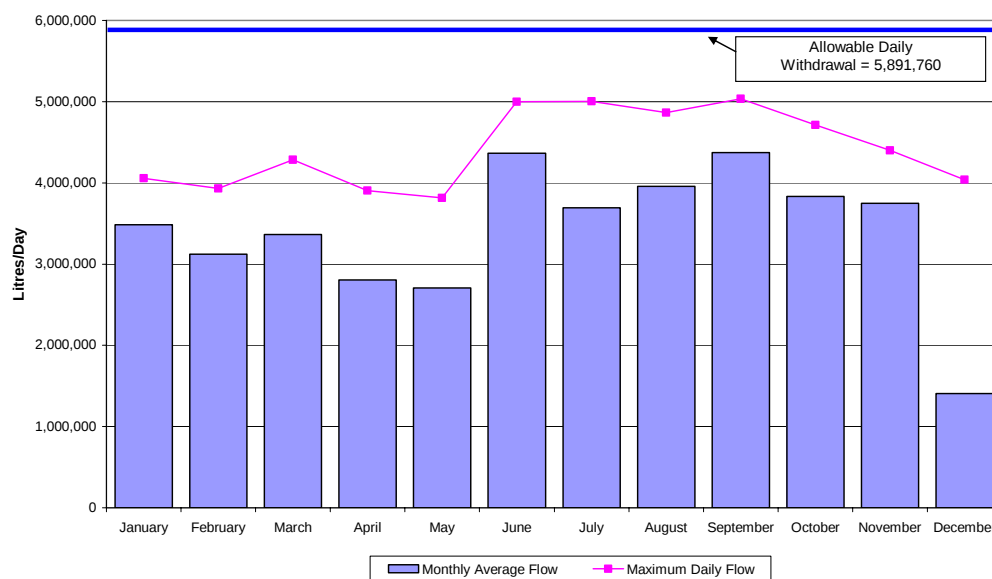
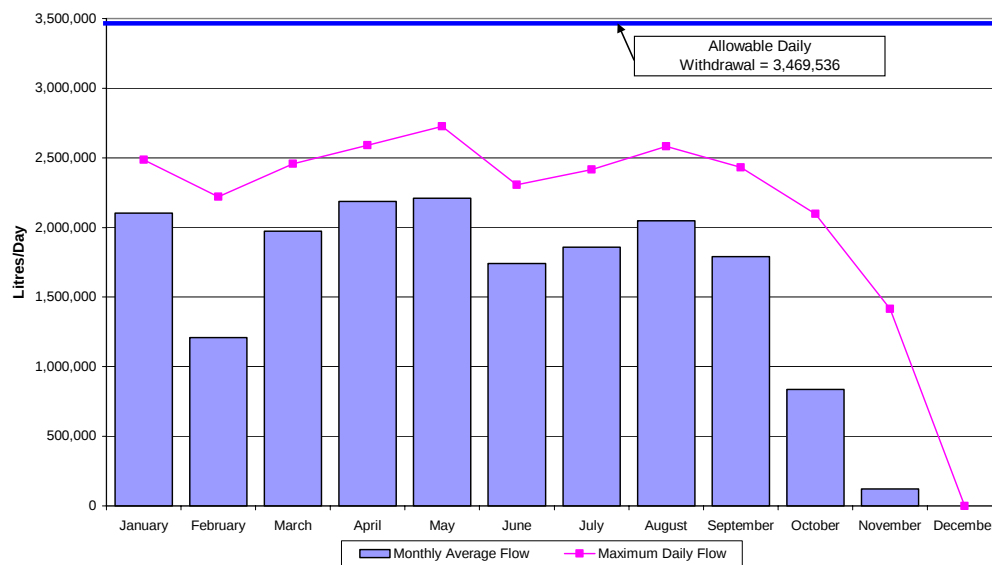


Figure 1f: Aurora Well No. 6
Monthly Average Flow and Maximum Daily Flow
2005



The well was offline for maintenance from November 11 to December 31, 2005

The actual volumes of water taken from the Aurora production wells during January 1 – December 31, 2005 did not exceed the allowable daily withdrawal.

The ‘*Daily Instantaneous Peak Flow (litres)*’ for January 1- December 31, 2005 is presented in Figure 1a, b, c, d, e, and f.

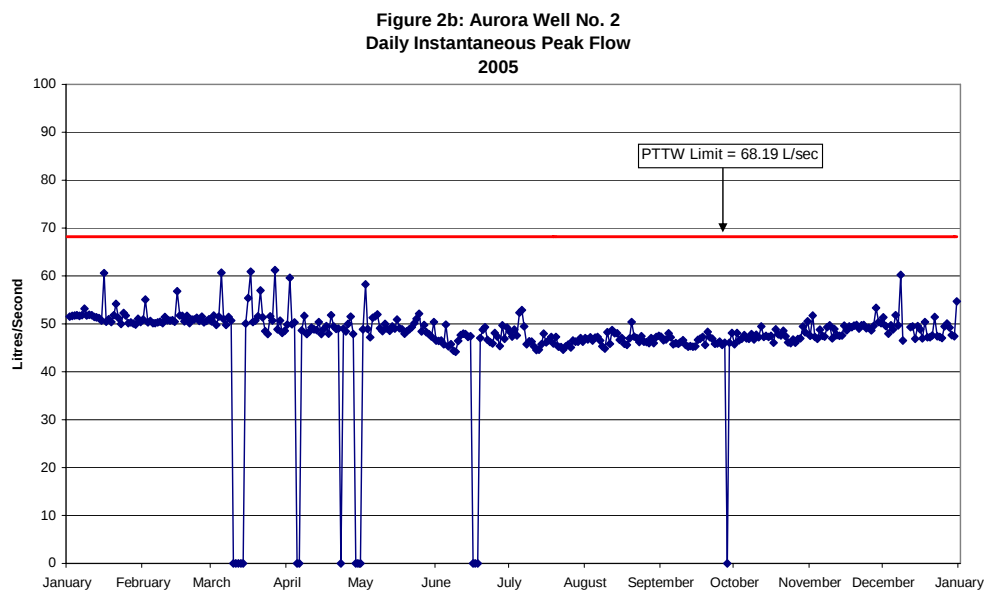
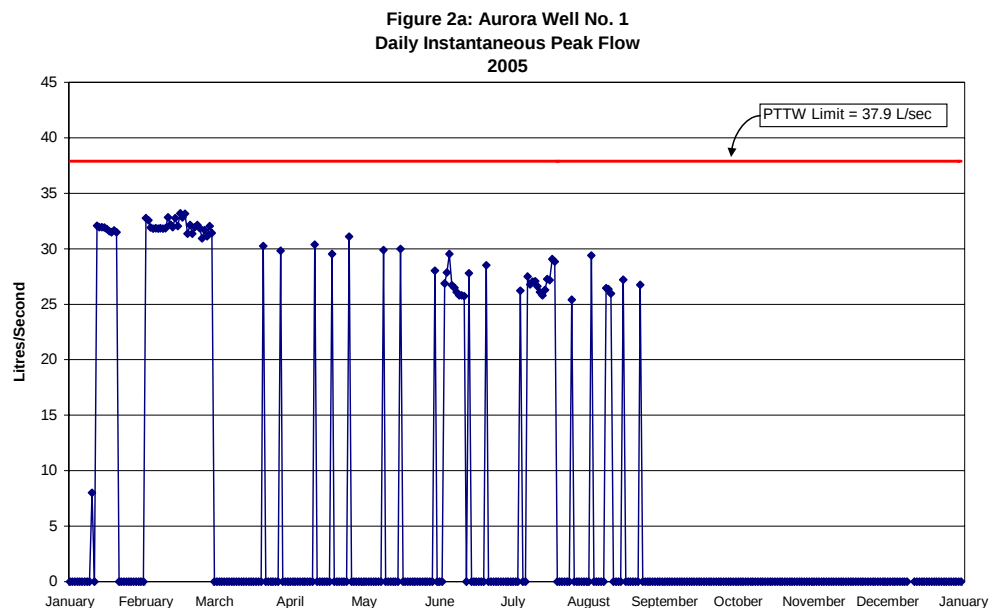
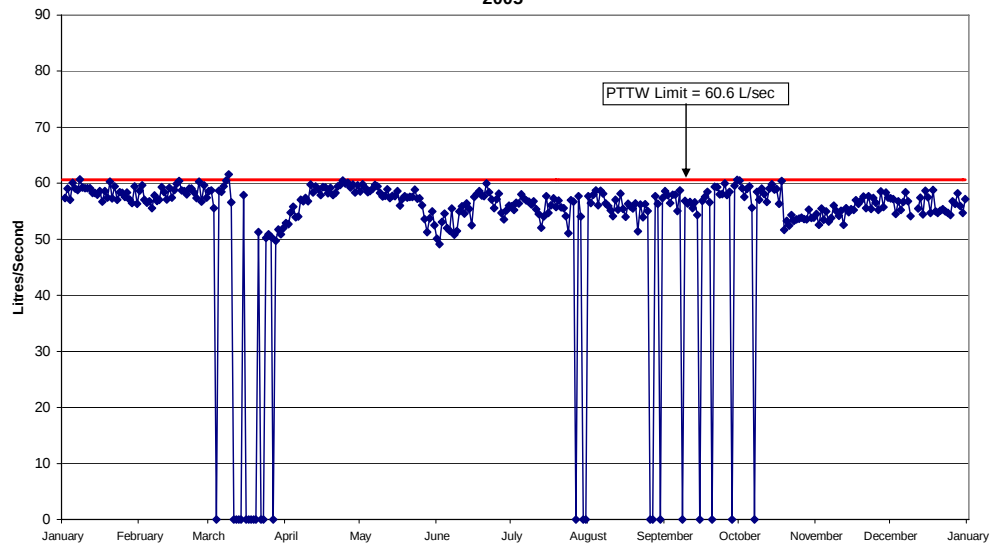
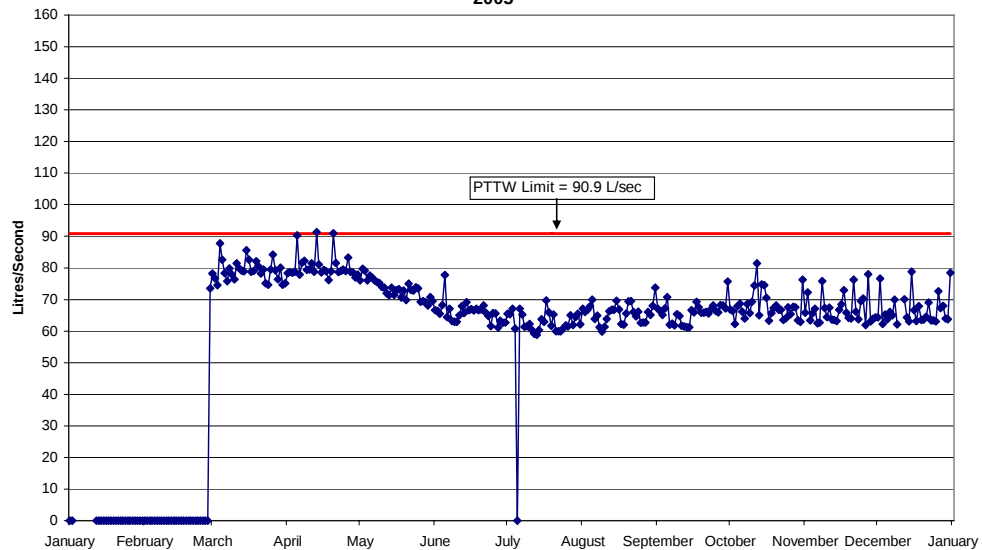


Figure 2c: Aurora Well No. 3
Daily Instantaneous Peak Flow
2005



The peak flows over the PTTW limit are no longer than 5 minutes in duration.

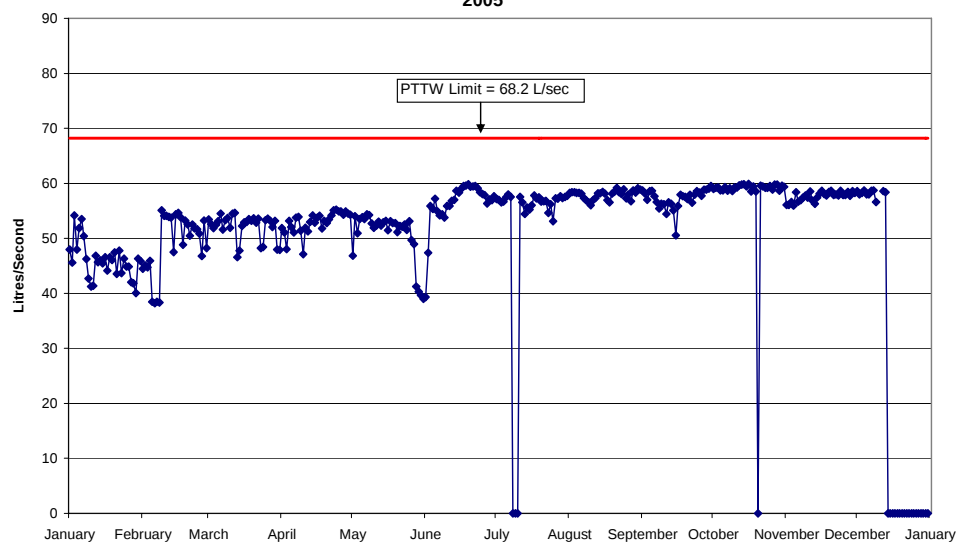
Figure 2d: Aurora Well No. 4
Daily Instantaneous Peak Flow
2005



The peak flows over the PTTW limit are no longer than 5 minutes in duration. The well was offline from January 1 to March 2, 2005.

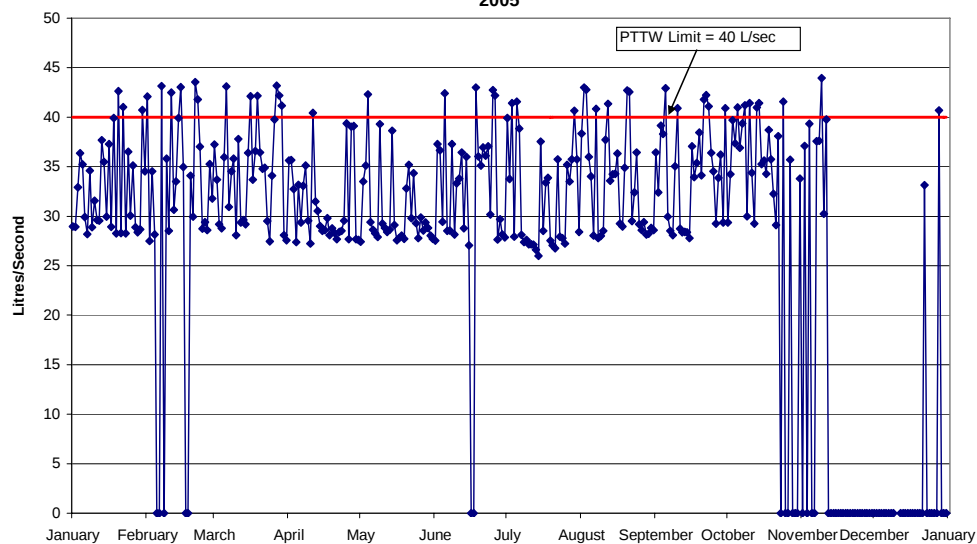
Figure 2c and 2d: shows some instantaneous peak flow rates above the Permit to Take Water limit. The instantaneous peak flow rates are short duration (on average less than 5 minutes) and represent less than 1% of the total volume of water taken for that day. The peaks are associated with the initial start up of a pump by removing of back pressure, a change in elevation in the water table or maintenance on the distribution system.

Figure 2e: Aurora Well No. 5
Daily Instantaneous Peak Flow
2005



The well was offline from December 16 to December 31, 2005.

Figure 2f: Aurora Well No. 6
Daily Instantaneous Peak Flow
2005



Aurora well No. 6 spikes on start up. The peak flows over the PTTW are no longer than 5 minutes in duration.
The well was offline from November 11 to December 31, 2005.

Figure 2f: shows some instantaneous peak flow rates above the Permit to Take Water limit. The instantaneous peak flow rates are short duration (on average less than 5 minutes) and represent less than 1% of the total volume of water taken for that day. These peaks are associated with the initial start up of a pump by removing of back pressure, a change in elevation in the water table or maintenance on the distribution system.

4.3 Ballantrae

York Region operates a water supply system to service Ballantrae/Musselman's Lake, Town of Whitchurch-Stouffville, under authority of a Certificate of Approval (C of A) as issued by the Ontario Ministry of the Environment (MOE). The C of A includes reference to the valid Permit To Take Water (PTTW) also issued by the MOE. The C of A requirements for the Ballantrae/Musselman's Lake water supply have been finished. Details of the C of A and PTTW and other relevant classification information are presented in Table 1.

TABLE 1: Ballantrae/Musselman's Lake Water Supply – Summary of Approvals and Permit

Current Certificate of Approval Number:	8759-5W9LN2
Issue Date:	March 3, 2004
Current Permit to Take Water Number:	96-P-3020 (Renewed)
Issue Date:	September 11, 2003
Expiry Date:	September 11, 2006
MOE Waterworks Number:	220008658
System Classification:	Water Distribution II (WDII)

4.3.1 Water Taking

The PTTW for the Ballantrae/Musselman's Lake Water Supply System allow York Region to withdraw up to 2,617,920 litres per day from production wells 1 and 2 during the period of October 1 – May 31 and 4,380,480 litres per day from production wells 1 and 2 during the period of June 1 – September 30.

York Region monitors the water taking through flow meters placed downstream of each production well. Flow is monitored on a continuous basis to ensure that the regulated flows are not exceeded.

4.3.2 Measuring Points

Flow meters are in place downstream of each production well. The flow meters record the instantaneous flow rate and the total volume of water that has passed through the meter. The flow meters are calibrated on an annual basis to meet the monitoring conditions of the C of A.

Flow data is retrieved and stored by two methods in York Region. This approach provides York Region with the opportunity to compare and contrast data should one method suddenly fail due to power failures or other means.

1. York Region staff manually record the flow rates and total flow data on regular operational visits to the well sites. Average flow rates are also

calculated using records of total flow and number of operating pump hours. This 'manual' data was used to generate the maximum daily withdrawal and monthly average flow tables and figures.

2. The flow meters are also connected to the Supervisory Control and Data Acquisition (SCADA) system so that data can be monitored remotely and stored electronically. This data was used to generate the instantaneous peak flow rate figures.

4.3.3. Water Withdrawal

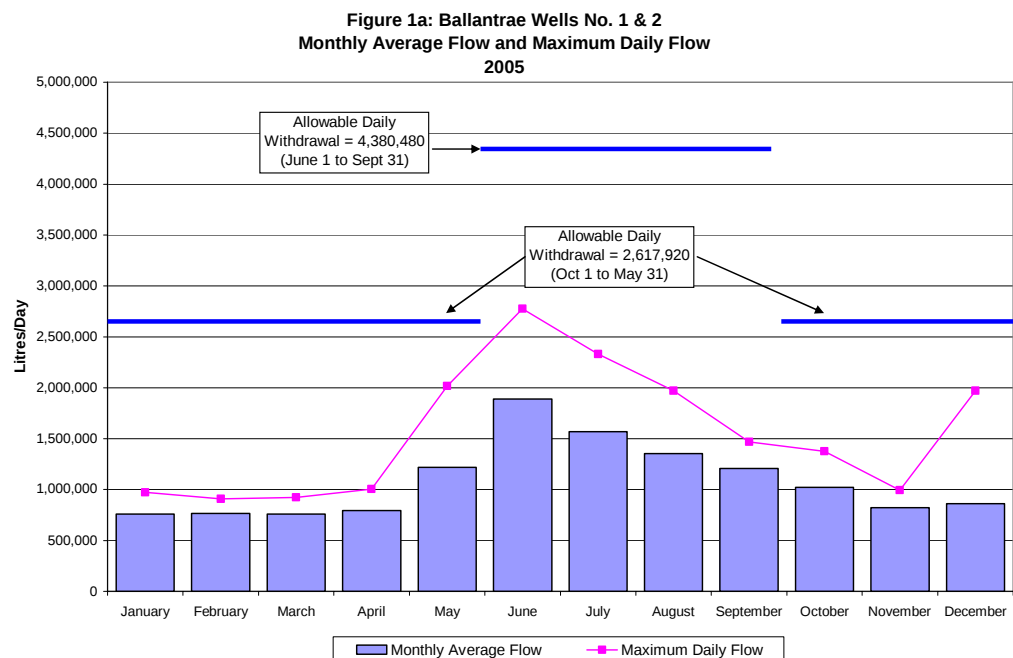
The total volume of water taken from the production wells of the Ballantrae/Musselman's Lake Water Supply system for the reporting period of January 1 – December 31, 2005 was 396,905,000 litres. This volume is less than the maximum permitted withdrawal as prescribed in the PTTW.

The maximum allowable daily water taking and the actual maximum recorded daily water taking are presented in Table 2.

TABLE 2: Allowable and Actual Maximum Daily Withdrawal from the Ballantrae/Musselman's Lake Production Wells for January 1 – December 31, 2005

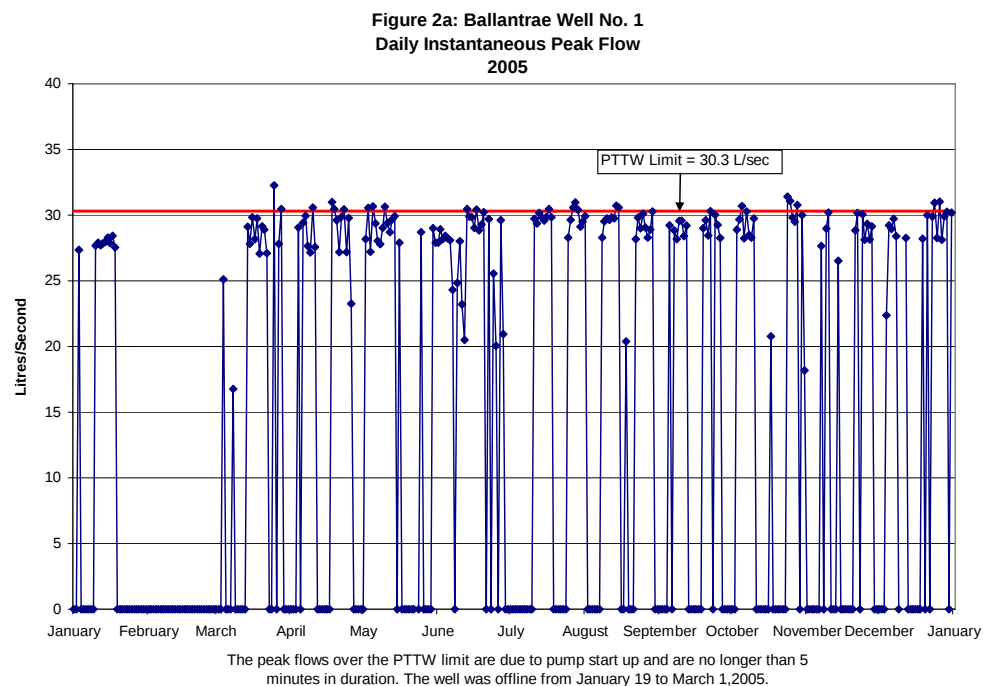
Allowable Daily Withdrawal from Production Wells 1 and 2 (Litres)	Actual Maximum Daily Withdrawal (Litres)
2,617,920 from Oct 1 – May 31	2,015,500 (May 25, 2005)
4,380,480 from Jun 1 – Sept 30	2,775,000 (June 06, 2005)

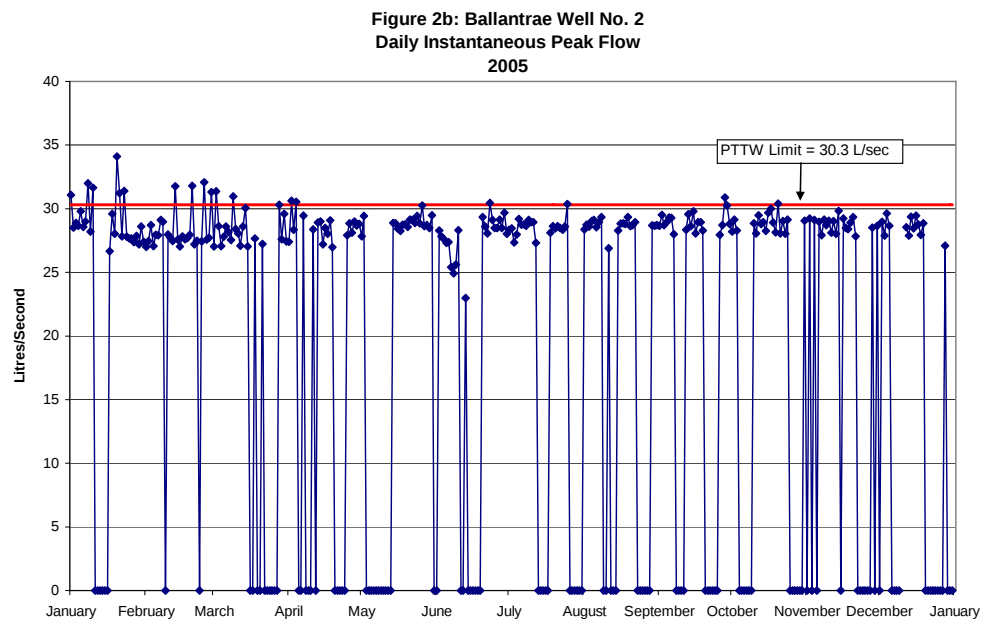
The average monthly flow rates, maximum daily flow, and the allowable daily withdrawal are presented in Figure 1a. The actual dates of the peak monthly demands are summarized in the Appendices.



The actual volume of water taken from the Ballantrae/Musselman's production wells during January 1 – December 31, 2005 did not exceed the allowable daily withdrawal volume.

The 'Daily Instantaneous Peak Flow (litres)' for January 1- December 31, 2005 for wells 1 and 2 are presented in the following graphs.





The peak flows over the PTTW limit are due to pump start up and are no longer than 5 minutes in duration.

Figure 2a and 2b: shows some instantaneous peak flow rates above the Permit to Take Water limit. The instantaneous peak flow rates are short duration (on average less than 5 minutes) and represent less than 1% of the total volume of water taken for that day. These peaks are associated with the initial start up of a pump by removing of back pressure, a change in elevation in the water table or maintenance on the distribution system.

4.4 Georgina

The Regional Municipality of York (York Region) operates a water supply system to service Sutton, Town of Georgina, under authority of a Certificate of Approval (C of A) as issued by the Ontario Ministry of the Environment (MOE). The C of A includes reference to the valid Permit To Take Water (PTTW) also issued by the MOE. Details of the C of A and PTTW and other relevant classification information are presented in Table 1. The Georgina water supply system has remained at the same state, with no new upgrades.

TABLE 1: Georgina Water Supply – Summary of Approvals and Permit

Current Certificates of Approval Numbers:	5640-667R8N
Issue Date:	December 8, 2004
Current Permit to Take Water Number:	03-P-3008
Issue Date:	February 12, 2003
Expiry Date:	February 28, 2013
MOE Waterworks Number:	260026156
System Classification:	Water Treatment II (WTII)

4.4.1 Water Taking

The PTTW for the Georgina Water Supply System allows York Region to withdraw up to 50,000,000 litres per day from the water treatment plant.

York Region monitors the water taking through flow meters. Flows are monitored on a continuous basis to ensure that the regulated flows are not exceeded.

4.4.2 Measuring Points

Flow meters are in place downstream of the intake at the low lift pump, filters and high lift pump locations. The flow meters record the instantaneous flow rate and the total volume of water that has passed through the meter. The flow meters are calibrated on an annual basis to meet the monitoring conditions of the C of A.

Flow data is retrieved and stored by two methods in York Region. This approach provides York Region with the opportunity to compare and contrast data should one method suddenly fail due to power failures or other means.

1. York Region staff manually record the flow rates and total flow data on regular operational visits to the well sites. Average flow rates are also calculated using records of total flow and number of operating pump

hours. This 'manual' data was used to generate the maximum daily withdrawal and monthly average flow tables and figures.

2. The flow meters have recently been connected to the Supervisory Control and Data Acquisition (SCADA) system so that data can be monitored remotely and stored electronically. This data was used to generate the instantaneous peak flow rate figures.

4.4.3 Water Withdrawal

The Georgina water treatment plant began operation in late November 2003.

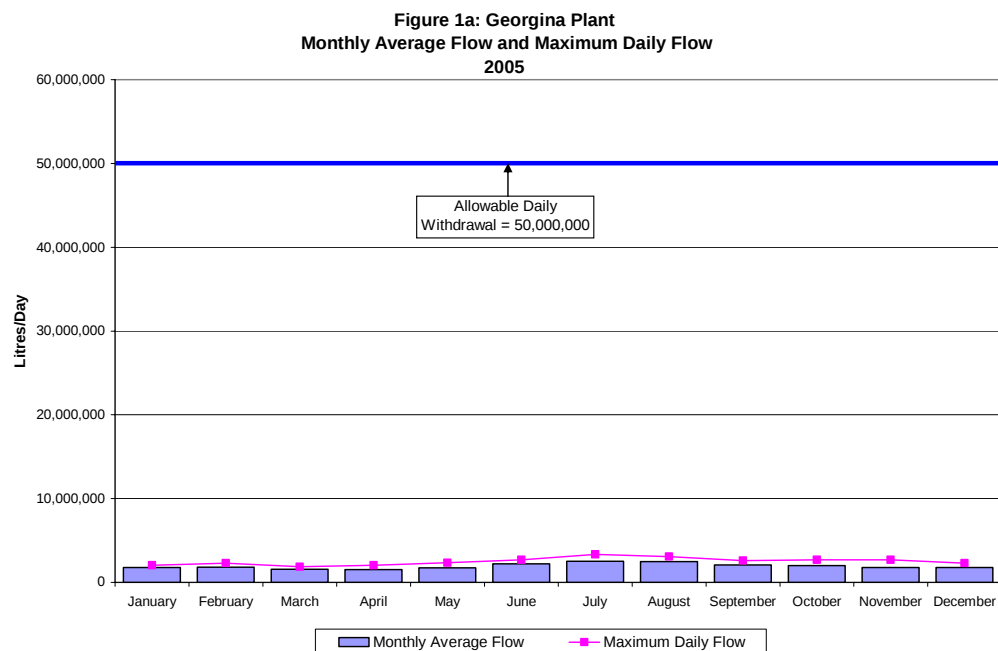
The total volume of water from the Georgina water treatment plant during January 1 – December 31, 2005 was 703,420,000 litres. This volume is less than the maximum permitted withdrawal as prescribed in the PTTW.

The maximum allowable daily water taking and the actual maximum recorded daily water taking are presented in Table 2.

TABLE 2: Allowable and Actual Maximum Daily Withdrawal from the Georgina Water Treatment Plant for January 1 – December 31, 2005

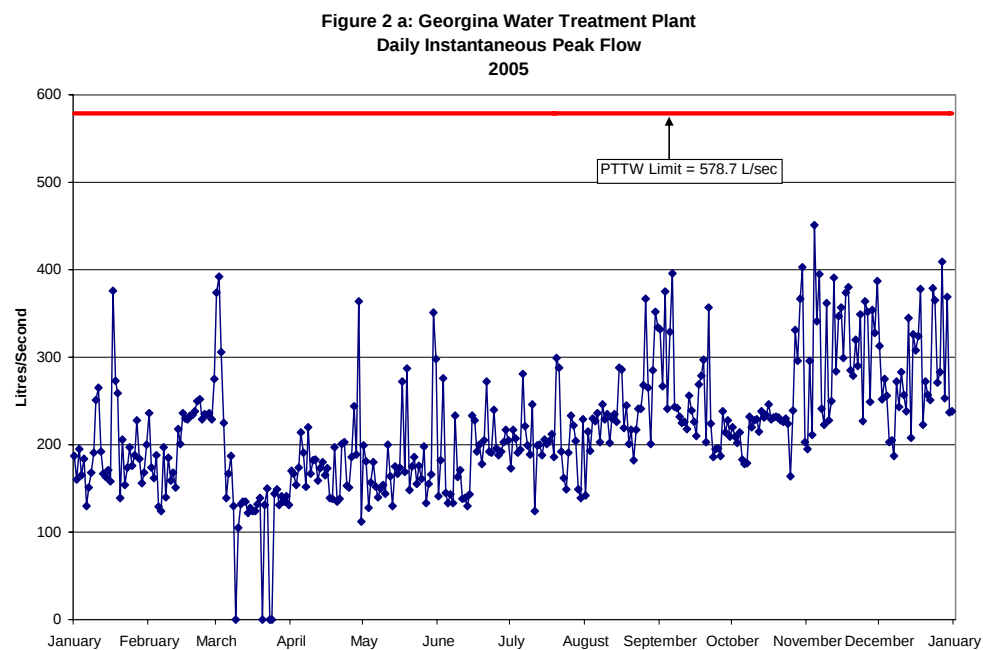
Location	Allowable Daily Withdrawal (Litres)	Actual Maximum Daily Withdrawal (Litres)
Water Treatment Plant	50,000,000	3,328,000 (July 19, 2005)

The monthly average flow rates, maximum daily flow, and allowable daily withdrawal are presented in Figure 1a.



The withdrawal rates from the Georgina Water Treatment Plant did not exceed the allowable limits for January 1 – December 31, 2005.

The ‘*Daily Instantaneous Peak Flow (litres)*’ for January 1- December 31, 2005 is presented in Figure 2a.



4.5 Keswick

The Regional Municipality of York (York Region) operates a water supply system to service Keswick, Town of Georgina, under authority of a Certificate of Approval (C of A) as issued by the Ontario Ministry of the Environment (MOE). The C of A includes reference to the valid Permit To Take Water (PTTW) also issued by the MOE. Details of the C of A and PTTW and other relevant classification information are presented in Table 1. The Keswick water supply system has undergone these upgrades necessary to meet the C of A requirements.

TABLE 1: Keswick Water Supply – Summary of Approvals and Permit

Current Certificates of Approval Numbers: Issue Date:	3684-6GNPMV October 19, 2005
Current Permit to Take Water Number: Issue Date: Expiry Date:	1268-636QNK July 30, 2004 June 30, 2014
MOE Waterworks Number:	210003280
System Classification:	Water Treatment III (WTIII)

4.5.1 Water Taking

The PTTW for the Keswick Water Supply System allows York Region to withdraw up to 16,200,000 Litres per day from the water treatment plant.

York Region monitors the water taking through flow meters. Flows are monitored on a continuous basis to ensure that the regulated flows are not exceeded.

4.5.2 Measuring Points

Flow meters are in place downstream of the intake at the low lift pump, filters and high lift pump locations. The flow meters record the instantaneous flow rate and the total volume of water that has passed through the meter. The flow meters are calibrated on an annual basis to meet the monitoring conditions of the C of A.

Flow data is retrieved and stored by two methods in York Region. This approach provides York Region with the opportunity to compare and contrast data should one method suddenly fail due to power failures or by other means.

1. York Region staff manually record the flow rates and total flow data on regular operational visits to the well sites. Average flow rates are also

calculated using records of total flow and number of operating pump hours. This 'manual' data was used to generate the maximum daily withdrawal and monthly average flow tables and figures.

2. The flow meters are also connected to the Supervisory Control and Data Acquisition (SCADA) system so that data can be monitored remotely and stored electronically. This data was used to generate the instantaneous peak flow rate figures.

4.5.3 Water Withdrawal

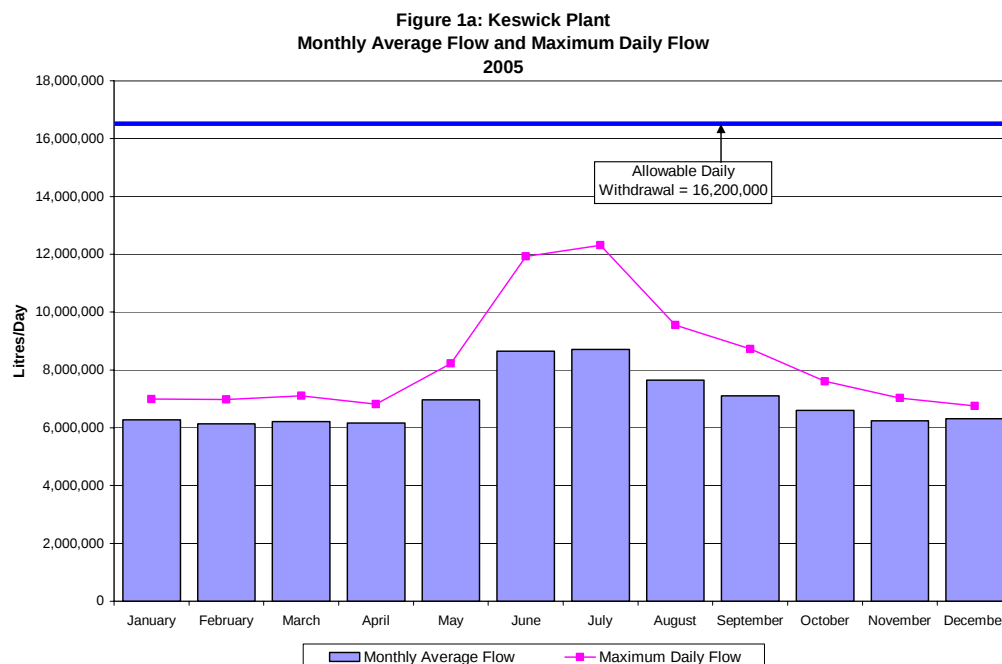
The total volume of water from the Keswick water treatment plant during January 1 – December 31, 2005 was 2,526,883,000 Litres. This volume is less than the maximum permitted withdrawal as prescribed in the PTTW.

The maximum allowable daily water taking and the actual maximum recorded daily water taking are presented in Table 2.

TABLE 2: Allowable and Actual Maximum Daily Withdrawal from the Keswick Water Treatment Plant for January 1 – December 31, 2005

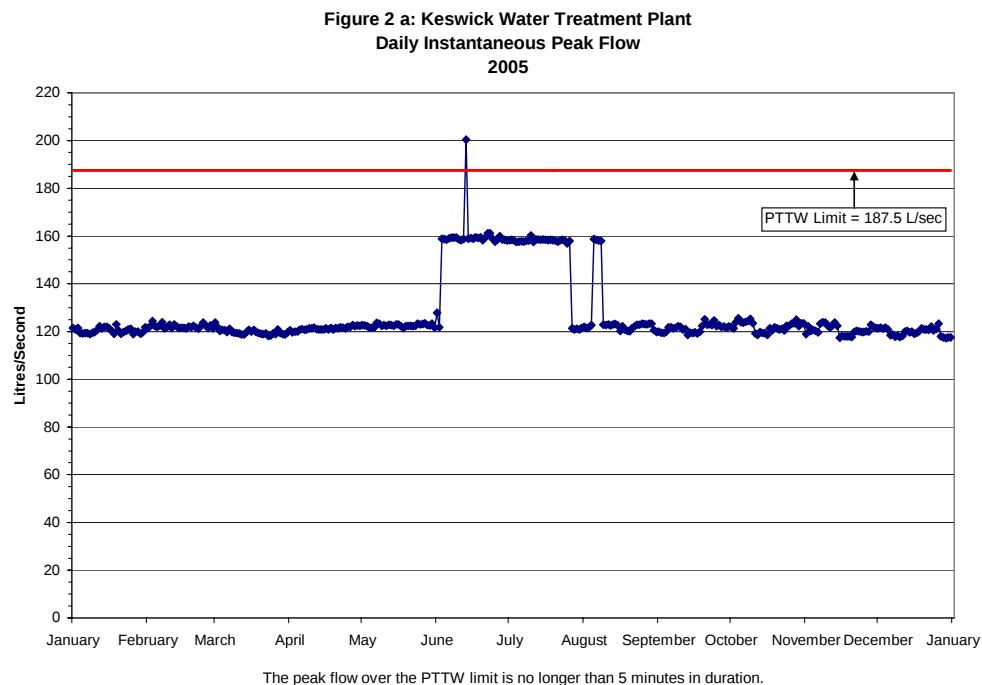
Location	Allowable Daily Withdrawal (Litres)	Actual Maximum Daily Withdrawal (Litres)
Water Treatment Plant	16,200,000	12,315,000 (July 12, 2005)

The average monthly flow rates, maximum daily flow, and allowable daily withdrawal are presented in Figure 1a. The actual dates of the peak monthly demands are summarized in the Appendices.



The withdrawal rates from the Keswick Water Treatment Plant did not exceed the allowable limits during January 1 – December 31, 2005.

The ‘*Daily Instantaneous Peak Flow (litres)*’ for January 1- December 31, 2005 is presented in Figure 2a.



4.6 King City

York Region operates a water supply system to service King City, Township of King, under authority of a Certificate of Approval (C of A) as issued by the Ontario Ministry of the Environment (MOE). The C of A includes reference to the valid Permit To Take Water (PTTW) also issued by the MOE. Details of the C of A and PTTW and other relevant classification information are presented in Table 1. The King City water supply system has undergone those upgrades that are required under the C of A.

TABLE 1: King City Water Supply – Summary of Approvals and Permit

Current Certificate of Approval Number: Issue Date:	21100-69HKRC April 1, 2005
Current Permit to Take Water Number: Issue Date: Expiry Date:	8634-67HR9L December 20, 2004 January 31, 2015
MOE Waterworks Number:	220002299
System Classification:	Water Distribution II (WD II)

4.6.1 Water Taking

The PTTW for the King City Water Supply System allows York Region to withdraw up to 4,582,470 litres per day from production wells 3 and 4.

York Region monitors the water taking through flow meters placed downstream of each production well. Flow is monitored on a continuous basis to ensure that the regulated flows are not exceeded.

4.6.2 Measuring Points

Flow meters are in place downstream of production well 3 and 4. The flow meters record the instantaneous flow rate and the total volume of water that has passed through the meter. The flow meters are calibrated on an annual basis to meet the monitoring conditions of the C of A.

Flow data is retrieved and stored by two methods in York Region. This approach provides York Region with the opportunity to compare and contrast data should one method suddenly fail due to power failures or by other means.

1. York Region staff manually record the flow rates and total flow data on regular operational visits to the well sites. Average flow rates are also calculated using records of total flow and number of operating pump

hours. This 'manual' data was used to generate the maximum daily withdrawal and monthly average flow tables and figures.

2. The flow meters are also connected to the Supervisory Control and Data Acquisition (SCADA) system so that data can be monitored remotely and stored electronically. This data was used to generate the instantaneous peak flow rate figures.

4.6.3 Water Withdrawal

The total volume of water taken from the production wells of the King City Water Supply system for January 1 – December 31, 2005 was 594,738,000 litres. This volume is less than the maximum permitted withdrawal as prescribed in the PTTW.

The maximum allowable daily water taking and the actual maximum recorded daily water taking are presented in Table 2.

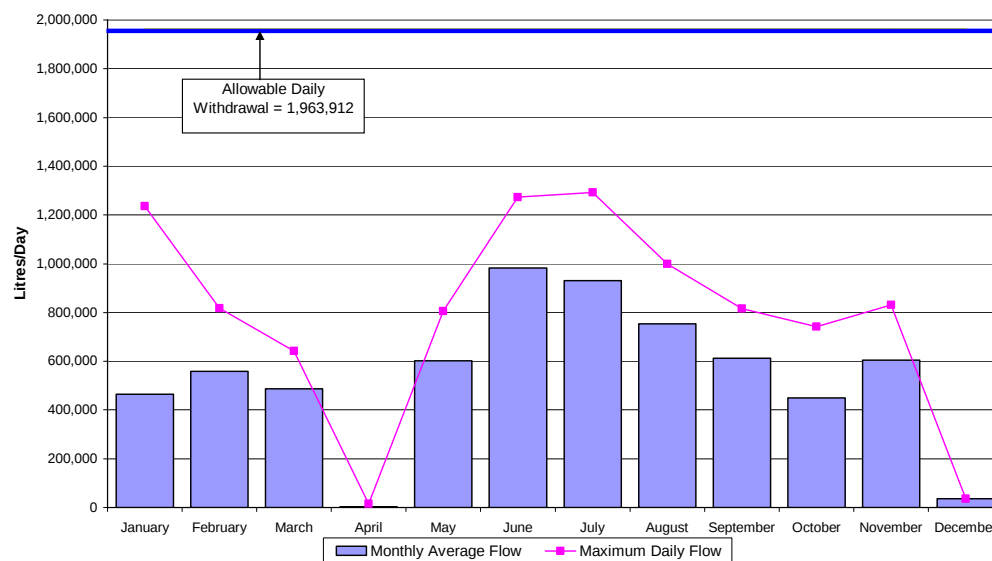
TABLE 2: Allowable and Actual Maximum Daily Withdrawal from the King City Production Wells for January 1 – December 31, 2005

Well Number	Allowable Daily Withdrawal (Litres)	Actual Maximum Daily Withdrawal (Litres)
Well 3	1,963,915	1,292,000 (July 11, 2005)
Well 4	2,618,554	2,419,200 (December 30, 2005)

The monthly average flow rates, maximum daily flow, and the allowable daily withdrawal are presented in Figure 1a and 1b. The actual dates of the peak monthly demands are summarized in the Appendices.

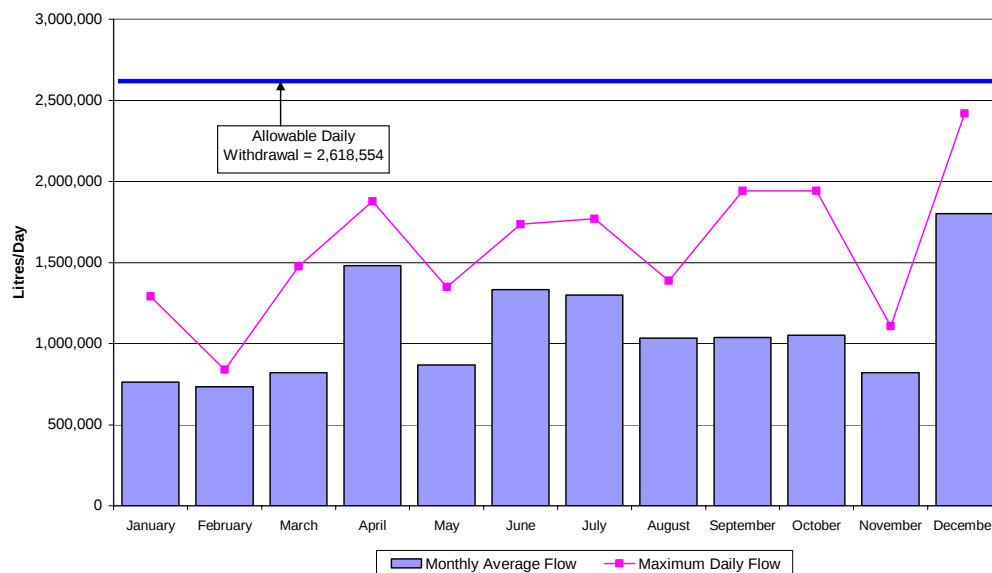
Summary Report for York Region Drinking Water Systems
March 2006

Figure 1a: King City Well No. 3
Monthly Average Flow and Maximum Daily Flow
2005



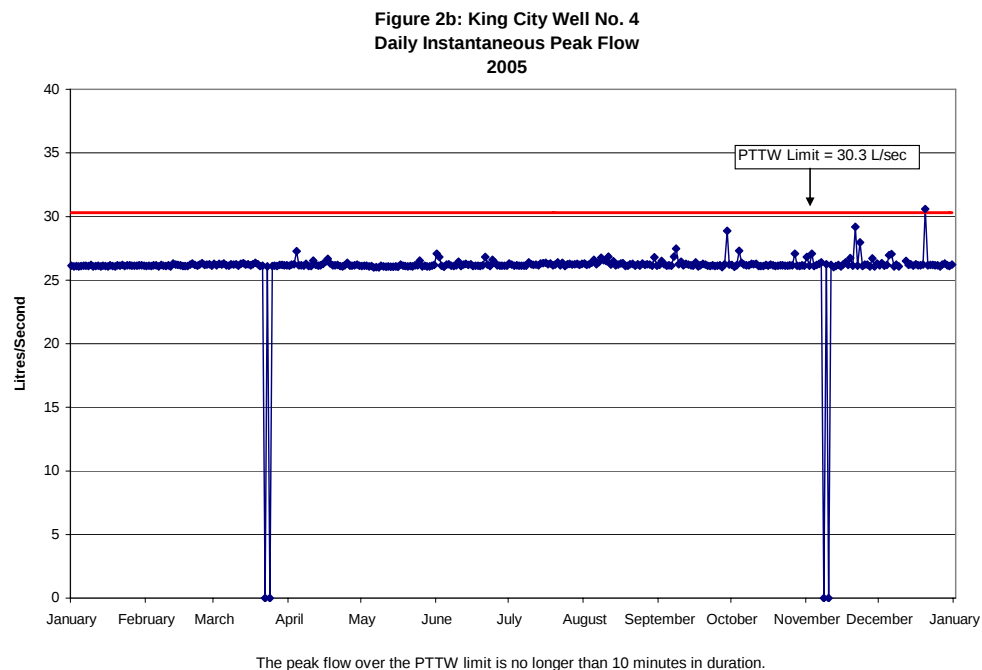
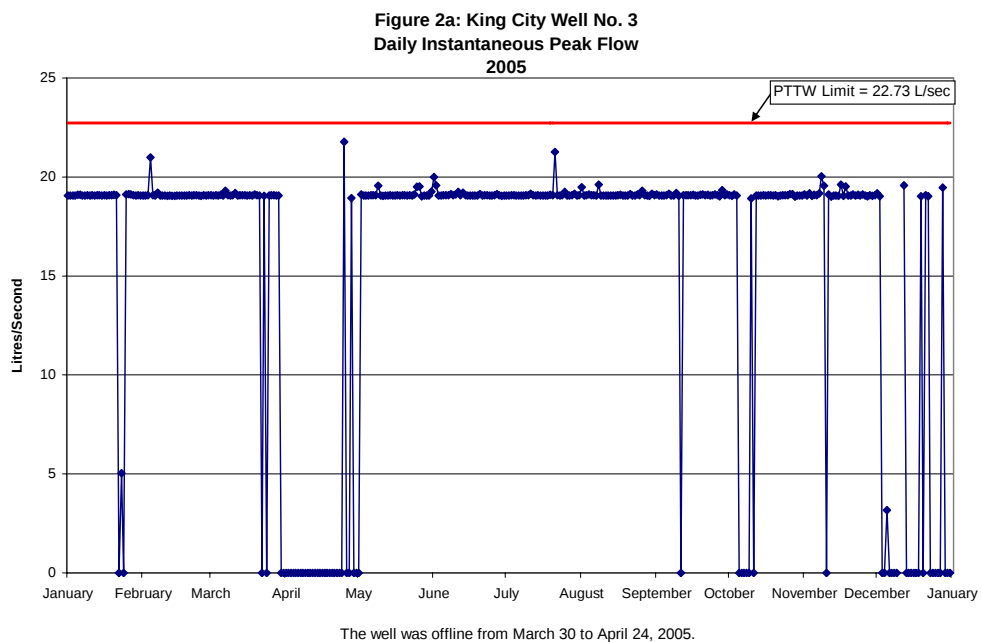
The well was offline for maintenance from March 30 to April 24, 2005.

Figure 1b: King City Well No. 4
Monthly Average Flow and Maximum Daily Flow
2005



The withdrawal rates from the King City production wells did not exceed the allowable limits during January 1 – December 31, 2005.

The ‘*Daily Instantaneous Peak Flow (litres)*’ for January 1- December 31, 2005 are presented in Figures 2a and 2b.



4.7 Kleinburg

York Region operates a water supply system to service Kleinburg, City of Vaughan, under authority of a Certificate of Approval (C of A) as issued by the Ontario Ministry of the Environment (MOE). The C of A includes reference to the valid Permit To Take Water (PTTW) also issued by the MOE. Details of the C of A and PTTW and other relevant classification information are presented in Table 1. The Kleinburg water supply system has undergone those upgrades that are required under the C of A. The PTTW for the Kleinburg water system expired on January 31, 2005 and is under review with the MOE. The MOE has advised York Region to continue operating under the old PTTW (01-P-3063) until the new PTTW has been issued.

TABLE 1: Kleinburg Water Supply – Summary of Approvals and Permit

Current Certificate of Approval Number: Issue Date:	3182-5STRXV November 3, 2003
Current Permit to Take Water Number: Issue Date: Expiry Date:	01-P-3063 July 22, 2002 January 31, 2005 <i>(Renewal Application Currently Being Processed)</i>
MOE Waterworks Number:	220002360
System Classification:	Water Distribution II (WDII)

4.7.1 Water Taking

The PTTW for the Kleinburg Water Supply System allows York Region to withdraw up to 4,233,000 litres per day from production wells 2 and 3. Withdrawal from production well 2 is limited to 90 days per year.

York Region monitors the water taking through flow meters placed downstream of each production well. Flow is monitored on a continuous basis to ensure that the regulated flows are not exceeded.

4.7.2 Measuring Points

Flow meters are in place downstream of production well 2 and 3. The flow meters record the instantaneous flow rate and the total volume of water that has passed through the meter. The flow meters are calibrated on an annual basis to meet the monitoring conditions of the C of A.

Flow data is retrieved and stored by two methods in York Region. This approach provides York Region with the opportunity to compare and contrast data should one method suddenly fail due to power failures or by other means.

1. York Region staff manually record the flow rates and total flow data on regular operational visits to the well sites. Average flow rates are also calculated using records of total flow and number of operating pump hours. This 'manual' data was used to generate the maximum daily withdrawal and monthly average flow tables and figures.
2. The flow meters are also connected to the Supervisory Control and Data Acquisition (SCADA) system so that data can be monitored remotely and stored electronically. This data was used to generate the instantaneous peak flow rate figures.

4.7.3 Water Withdrawal

The total volume of water taken from the production wells of the Kleinburg Water Supply system for January 1 – December 31, 2005 was 571,331,000 litres. This volume is less than the maximum permitted withdrawal as prescribed in the PTTW.

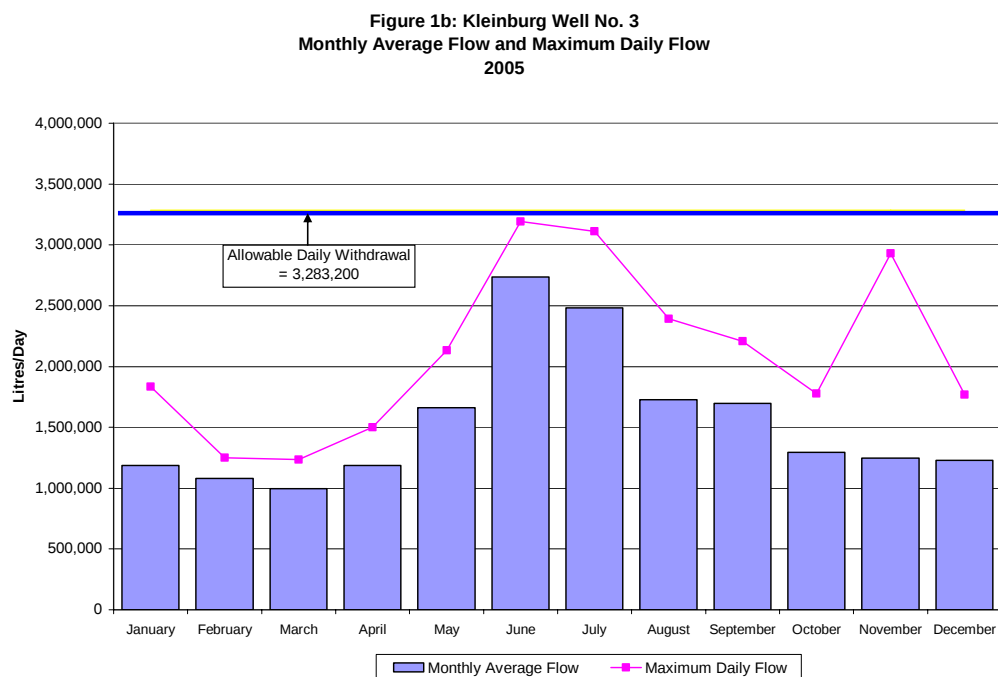
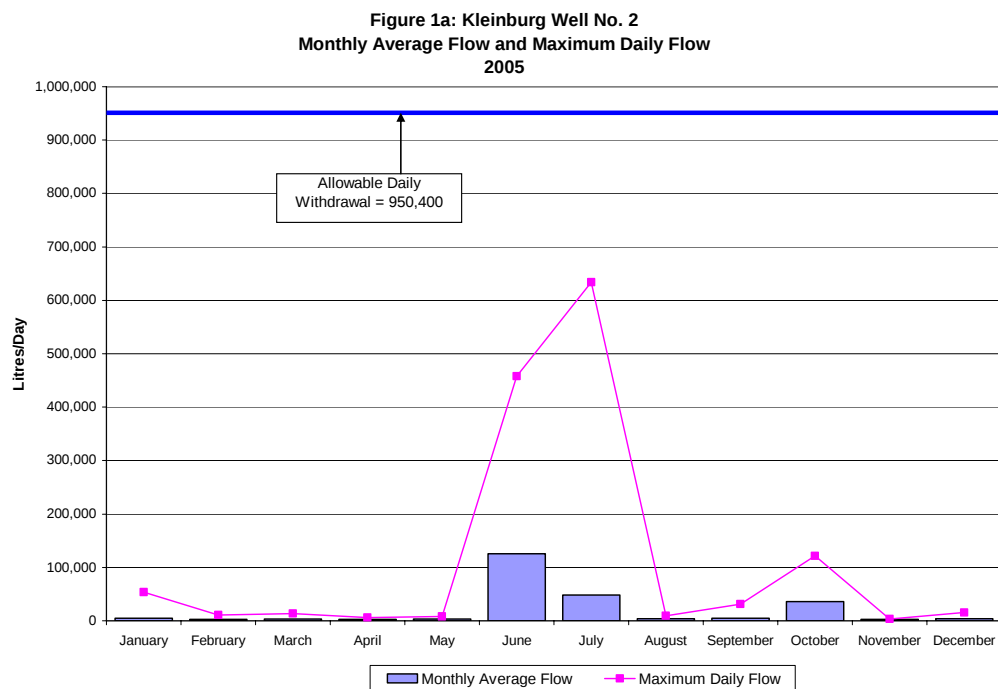
The maximum allowable daily water taking and the actual maximum recorded daily water taking are presented in Table 2.

TABLE 2: Allowable and Actual Maximum Daily Withdrawal from the Kleinburg Production Wells for January 1 – December 31, 2005

Production Well Number	Allowable Daily Withdrawal (Litres)	Actual Maximum Daily Withdrawal (Litres)
Well 2	950,400	633,500 (July 11, 2005)
Well 3	3,283,200	3,578,333 (July 01, 2005)

** Kleinburg well 2 is typically used as a standby well and is primarily operated for collection of samples for required water quality testing.*

The monthly average flow rates, maximum daily flow, and allowable daily withdrawal are presented in Figure 1a and 1b. The actual dates of the peak monthly demands are summarized in the Appendices.



The withdrawal rates from the Kleinburg production wells did not exceed the allowable limits during January 1 – December 31, 2005.

The 'Daily Instantaneous Peak Flow (litres)' for January 1- December 31, 2005 is presented in Figures 2a and 2b.

Figure 2a: Kleinburg Well No. 2
Daily Instantaneous Peak Flow
2005

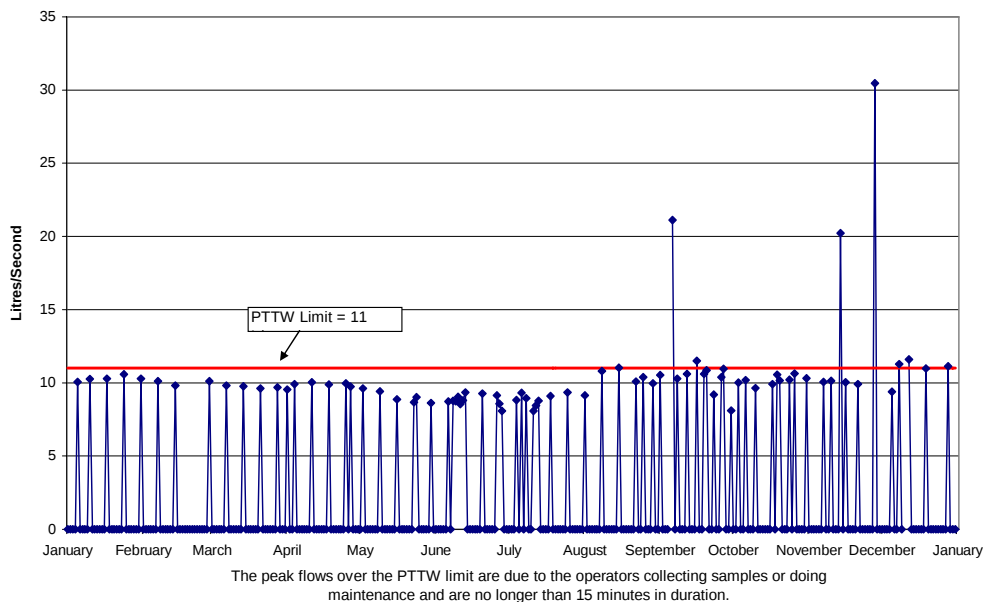
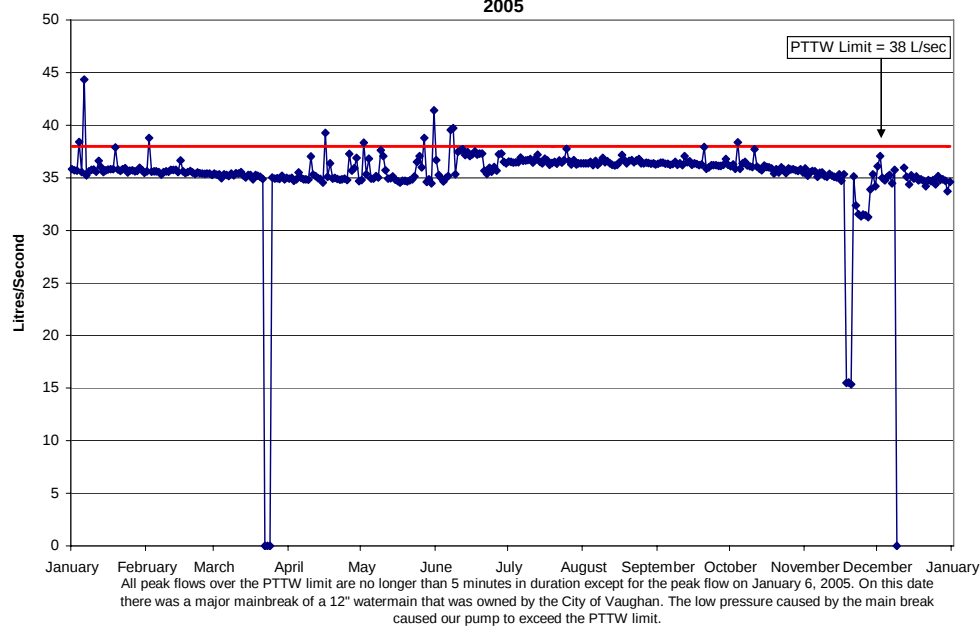


Figure 2b: Kleinburg Well No. 3
Daily Instantaneous Peak Flow
2005



4.8 Mount Albert

York Region operates a water supply system to service Mount Albert, Town of East Gwillimbury, under authority of a Certificate of Approval (C of A) as issued by the Ontario Ministry of the Environment (MOE). The C of A includes reference to the valid Permit To Take Water (PTTW) also issued by the MOE. Details of the C of A and PTTW and other relevant classification information are presented in Table 1. Current facility upgrades that are required for the Mount Albert water supply C of A have been completed.

TABLE 1: Mount Albert Water Supply – Summary of Approvals and Permit

Current Certificate of Approval Number:	2899-6H4RRF
Issue Date:	October 26, 2005
Current Permit to Take Water Number:	94-P-3070
Issue Date:	January 28, 2003
Expiry Date:	March 31, 2006 <i>(Renewal Application Currently Being Processed)</i>
MOE Waterworks Number:	220006543
System Classification:	Water Distribution II (WDII)

4.8.1 Water Taking

The PTTW for the Mount Albert Water Supply System allows York Region to withdraw up to 4,352,000 litres per day (up to a maximum of 16 hours per day) combined from production wells 1 and 2, and 3,273,120 litres each if only one well is running at a time.

York Region monitors the water taking through flow meters placed downstream of each production well. Flow is monitored on a continuous basis to ensure that the regulated flows are not exceeded.

4.8.2 Measuring Points

Flow meters are in place downstream of production well 1 and 2. The flow meters record the instantaneous flow rate and the total volume of water that has passed through the meter. The flow meters are calibrated on an annual basis to meet the monitoring conditions of the C of A.

Flow data is retrieved and stored by two methods in York Region. This approach provides York Region with the opportunity to compare and contrast data should one method suddenly fail due to power failures or by other means.

1. York Region staff manually record the flow rates and total flow data on regular operational visits to the well sites. Average flow rates are also calculated using records of total flow and number of operating pump

hours. This 'manual' data was used to generate the maximum daily withdrawal and monthly average flow tables and figures.

2. The flow meters are also connected to the Supervisory Control and Data Acquisition (SCADA) system so that data can be monitored remotely and stored electronically. This data was used to generate the instantaneous peak flow rate figures.

4.8.3 Water Withdrawal

The total volume of water taken from the production wells of the Mount Albert Water Supply system for the reporting period of January 1 – December 31, 2005 was 354,838,000 litres. This volume is less than the maximum permitted withdrawal as prescribed in the PTTW.

The maximum allowable daily water taking and the actual maximum recorded daily water taking are presented in Table 2.

TABLE 2: Allowable and Actual Maximum Daily Withdrawal from the Mount Albert Production Wells for January 1 – December 31, 2005

Production Well Number	Allowable Daily Withdrawal (Litres)	Actual Maximum Daily Withdrawal (Litres)
Well 1	2,176,000	1,702,000 (June 01, 2005)
Well 2	2,176,000	1,759,500 (July 20, 2005)

The monthly average flow rates, maximum daily flow, and allowable daily withdrawal are presented in Figure 1a and 1b. The actual dates of the peak monthly demands are summarized in the Appendices.

Figure 1a: Mount Albert Well No. 1
Monthly Average Flow and Maximum Daily Flow
2005

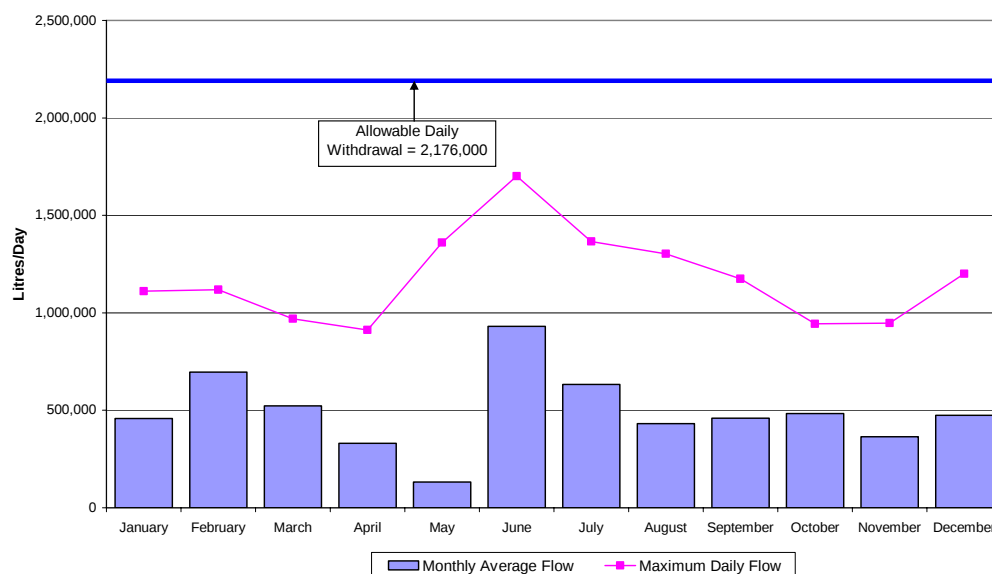
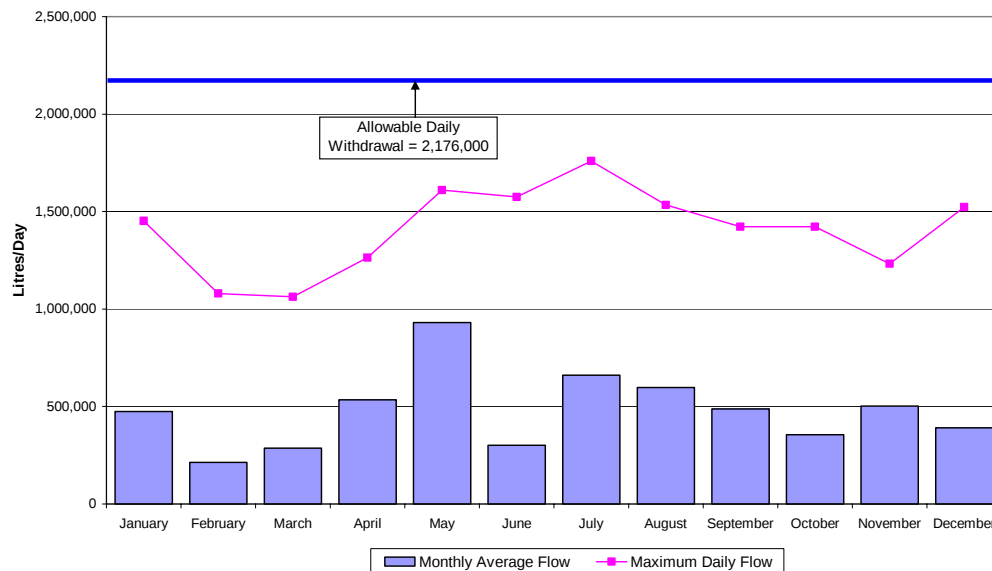


Figure 1b: Mount Albert Well No. 2
Monthly Average Flow and Maximum Daily Flow
2005



The actual volumes of water taken from the Mount Albert production wells during January 1 – December 31, 2005 did not exceed the allowable daily withdrawal volumes.

The 'Daily Instantaneous Peak Flow (litres)' for January 1- December 31, 2005 are presented in Figure 2a and 2b.

Figure 2a: Mount Albert Well No. 1
Daily Instantaneous Peak Flow
2005

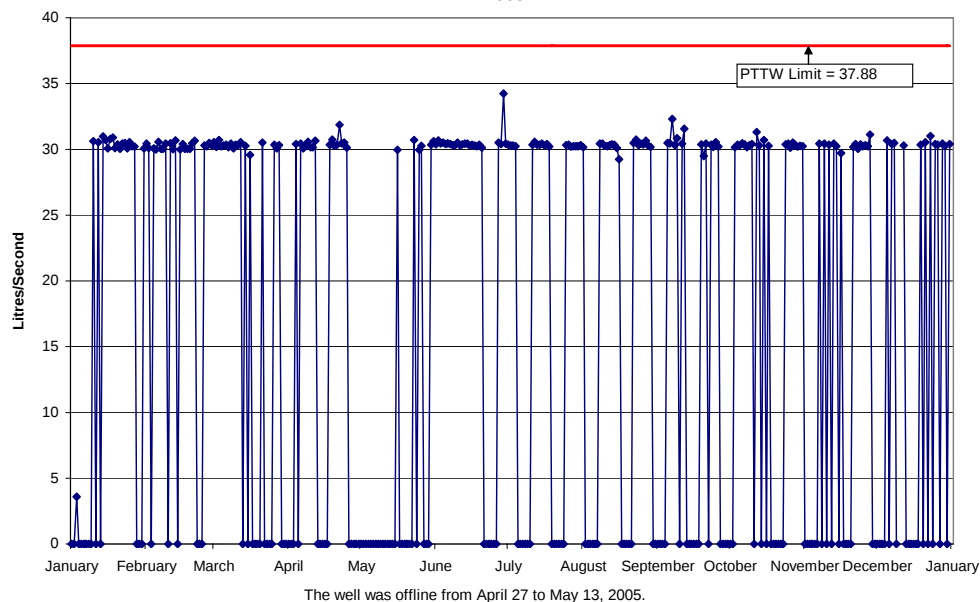
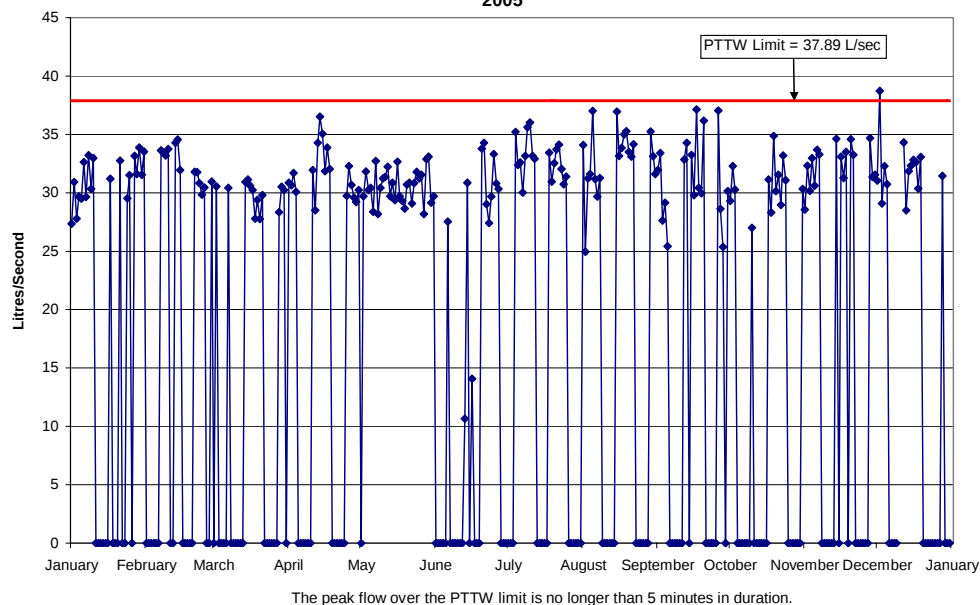


Figure 2b: Mount Albert Well No. 2
Daily Instantaneous Peak Flow
2005



4.9 Newmarket/East Gwillimbury

York Region operates a water supply system to service the communities of Holland Landing, Sharon and Queensville in the Town of East Gwillimbury and the Town of Newmarket under authority of a Certificate of Approval (C of A) as issued by the Ontario Ministry of the Environment (MOE). The C of A includes reference to the valid Permit To Take Water (PTTW) also issued by the MOE. Details of the C of A and PTTW and other relevant classification information are presented in Table 1. The Newmarket/East Gwillimbury water supply system has undergone facility upgrades in order meet the requirements of the C of A.

TABLE 1: Newmarket/East Gwillimbury Water Supply – Summary of Approvals and Permit

Current Certificate of Approval Number:	3509-6ALJGJ
Issue Date:	July 7, 2005
Current Permit to Take Water Number:	6623-68QQ6L
Issue Date:	March 31, 2005
Expiry Date:	March 31, 2015
MOE Waterworks Number:	
Holland Landing:	220004046
Newmarket:	220002413
Queensville:	260001955
System Classification:	Water Distribution III (WD III)

4.9.1 Water Taking

The PTTW for the Newmarket/East Gwillimbury Water Supply System allows York Region to withdraw up to 56,036,736 litres per day from all production wells.

York Region monitors the water taking through flow meters placed downstream of each production well. Flow is monitored on a continuous basis to ensure that the regulated flows are not exceeded.

4.9.2 Measuring Points

Flow meters are in place downstream of each production well. The flow meters record the instantaneous flow rate and the total volume of water that has passed through the meter. The flow meters are calibrated on an annual basis to meet the monitoring conditions of the C of A.

Flow data is retrieved and stored by two methods in York Region. This approach provides York Region with the opportunity to compare and contrast data should one method suddenly fail due to power failures or by other means.

1. York Region staff manually record the flow rates and total flow data on regular operational visits to the well sites. Average flow rates are also calculated using records of total flow and number of operating pump hours. This 'manual' data was used to generate the maximum daily withdrawal and monthly average flow tables and figures.
2. The flow meters are also connected to the Supervisory Control and Data Acquisition (SCADA) system so that data can be monitored remotely and stored electronically. This data was used to generate the instantaneous peak flow rate figures.

4.9.3 Water Withdrawal

The total volume of water taken from the production wells of the Newmarket/East Gwillimbury Water Supply system for January 1 – December 31, 2005 was 10,440,723,000 litres. This volume is less than the maximum permitted withdrawal as prescribed in the PTTW.

The maximum allowable daily water taking and the actual maximum recorded daily water taking are presented in Table 2.

TABLE 2: Allowable and Actual Maximum Daily Withdrawal from the Newmarket/East Gwillimbury Production Wells for the January 1 – December 31, 2005

Well Number	Allowable Daily Withdrawal (Litres)	Actual Maximum Daily Withdrawal (Litres)
Holland Landing Well 1	2,291,184	1,944,667 (January 7, 2005)
Holland Landing Well 2	3,600,432	2,326,500 (June 8, 2005)
Newmarket Well 1	2,291,184	2,054,500 (May 30, 2005)
Newmarket Well 2	4,582,512	4,344,000 (March 21, 2005)
Newmarket Well 13	5,891,760	5,343,000 (December 30, 2005)
Newmarket Well 14	2,291,184	1,538,333 (June 3, 2005)
Newmarket Well 15	3,273,120	1,816,500 (January 1, 2005)
Newmarket Well 16	5,629,824	5,312,000 (June 22, 2005)
Queensville Well 1	6,546,384	6,065,000 (November 28, 2005)
Queensville Well 2	6,546,384	6,012,500 (December 5, 2005)
Queensville Well 3	6,546,384	6,435,000 (April 13, 2005)
Queensville Well 4	6,546,384	6,390,000 (August 5, 2005)

The monthly average flow rates, maximum daily flow, and allowable daily withdrawal are presented in Figure 1a through 1l. The actual dates of the peak monthly demands are summarized in the Appendices.

Figure 1a: Holland Landing Well No. 1
Monthly Average Flow and Maximum Daily Flow
2005

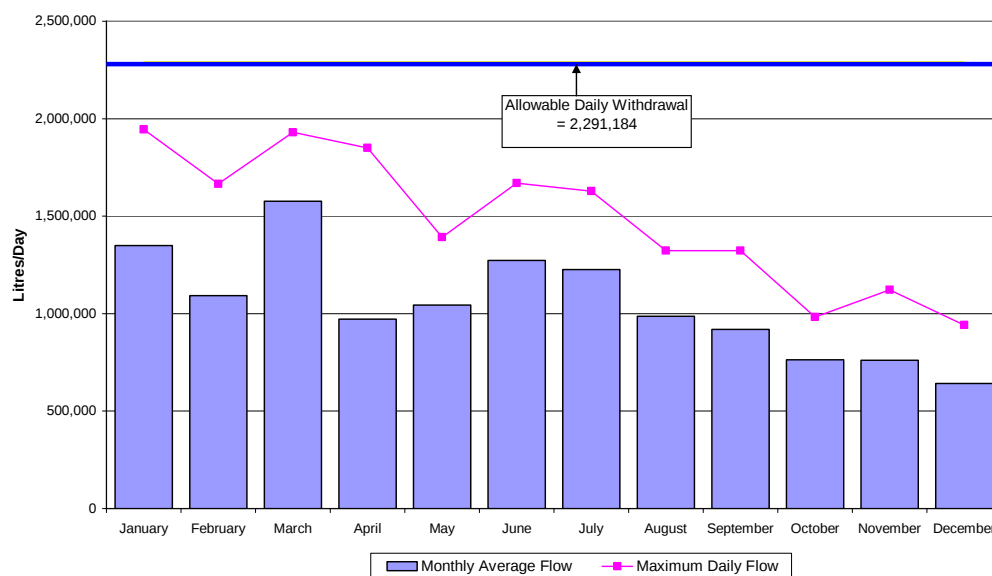
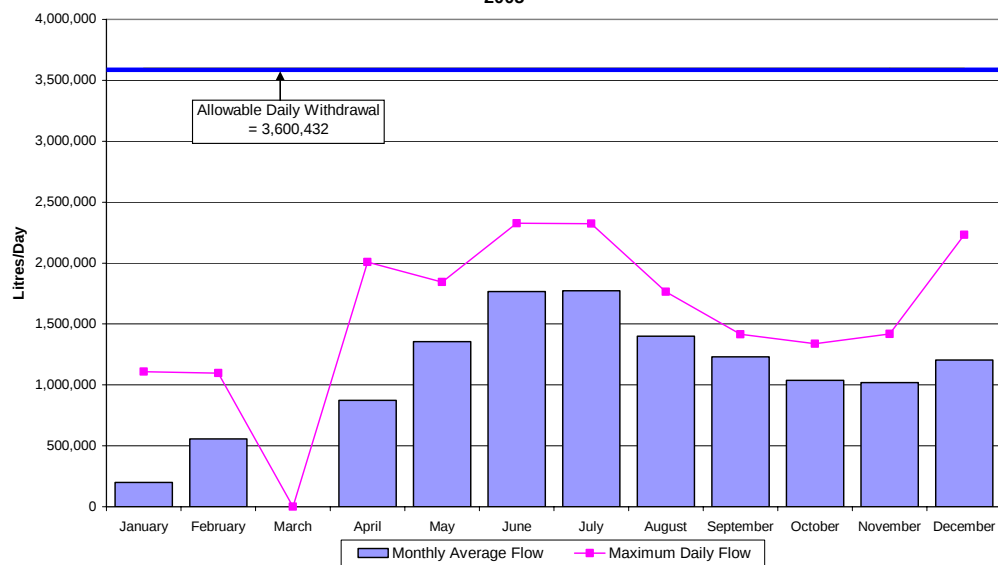


Figure 1b: Holland Landing Well No. 2
Monthly Average Flow and Maximum Daily Flow
2005



The well was offline for maintenance from February 23 to April 7, 2005.

Figure 1c: Newmarket Well No. 1
Monthly Average Flow and Maximum Daily Average
2005

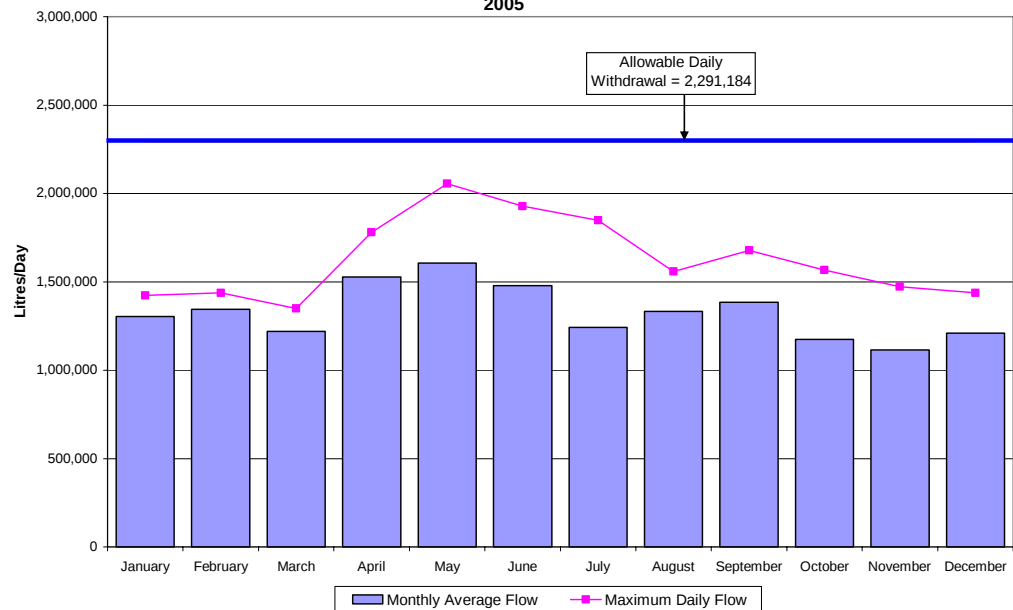
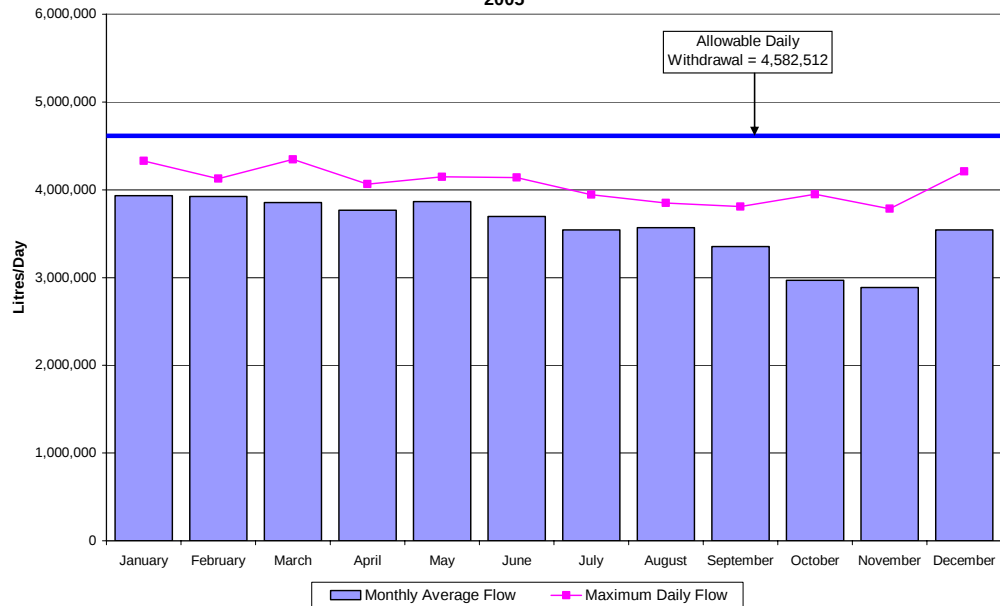
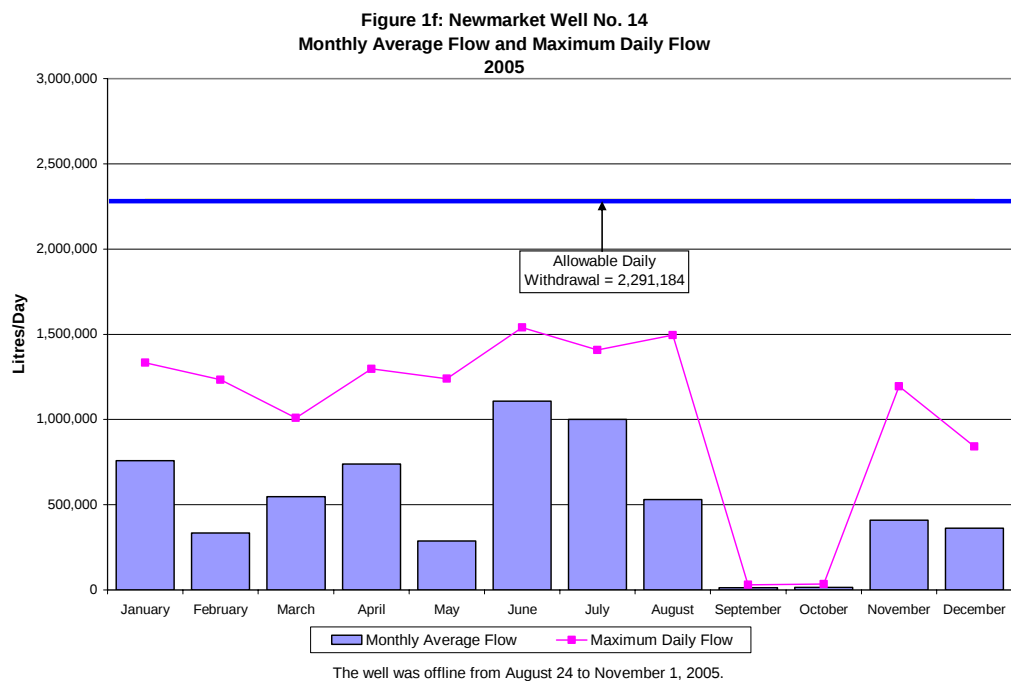
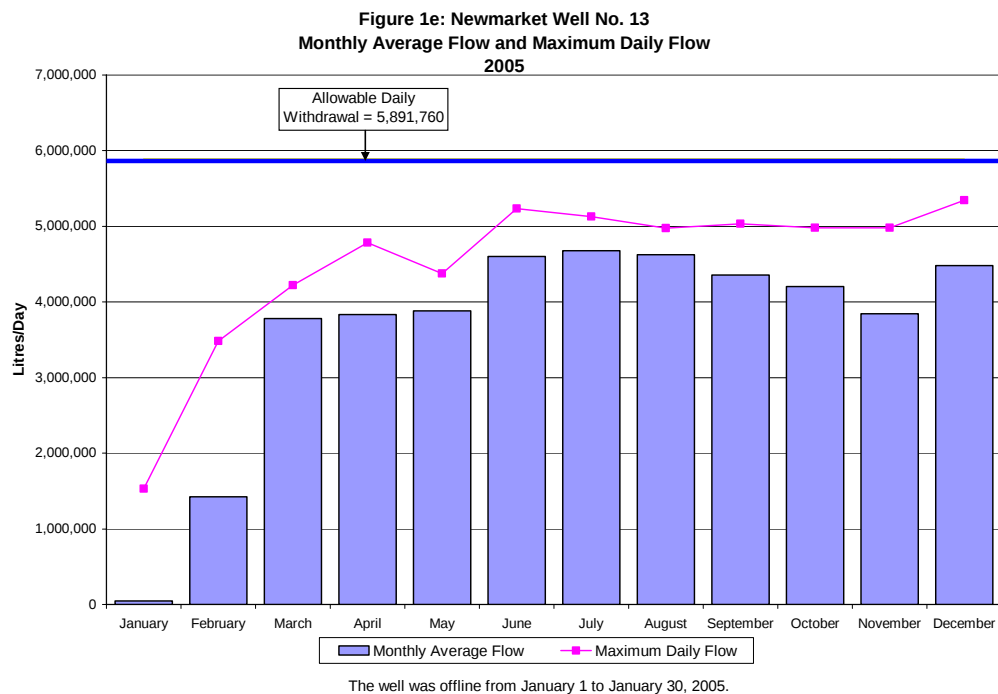


Figure 1d: Newmarket Well No. 2
Monthly Average Flow and Maximum Daily Flow
2005

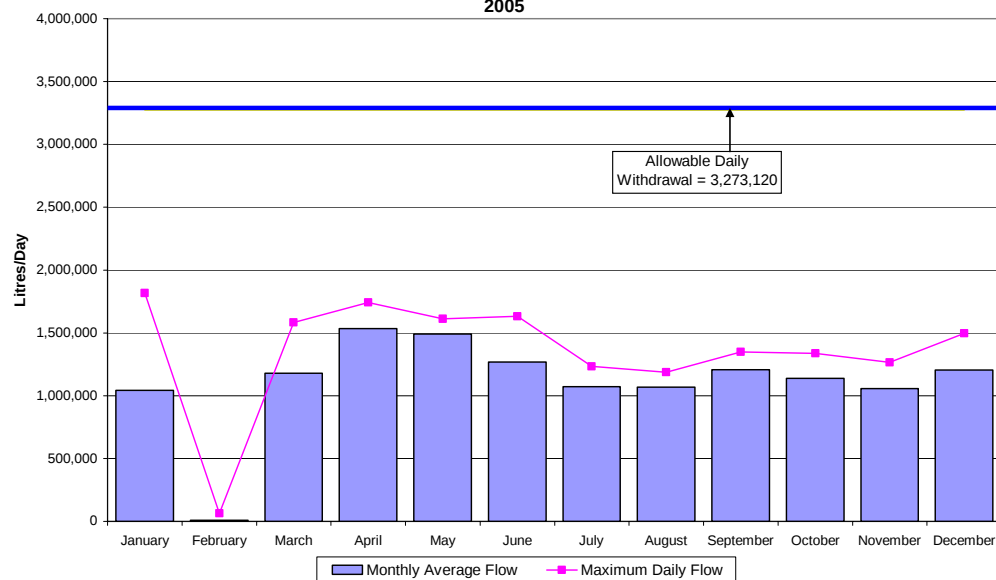


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March 2006



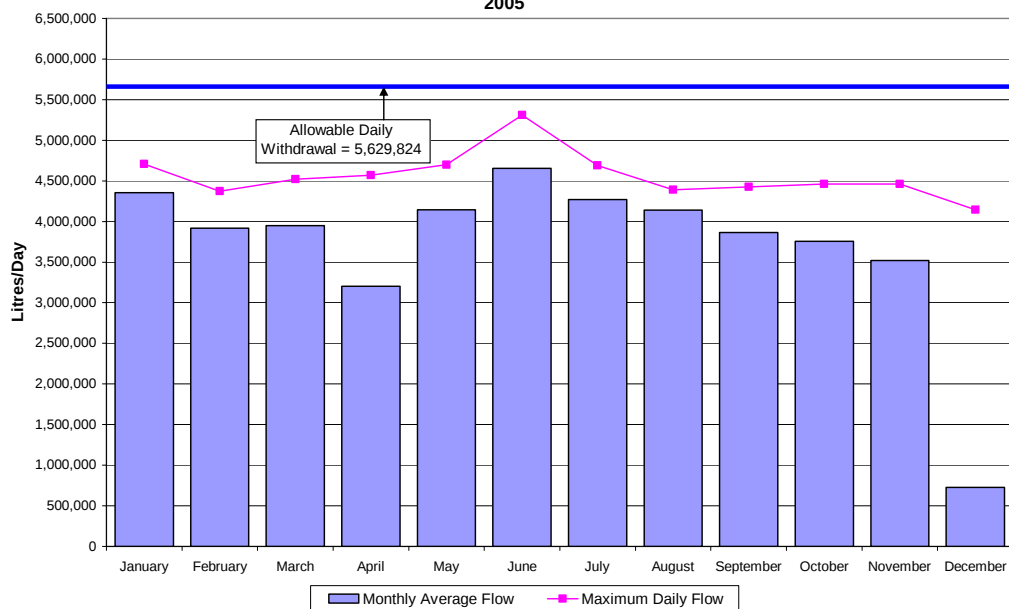
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Figure 1g: Newmarket Well No. 15
Monthly Average Flow and Maximum Daily Flow
2005



The well was offline from January 24 to February 20, 2005.

Figure 1h: Newmarket Well No. 16
Monthly Average Flow and Maximum Daily Flow
2005



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Figure 1i: Queensville Well No. 1
Monthly Average Flow and Maximum Daily Flow
2005

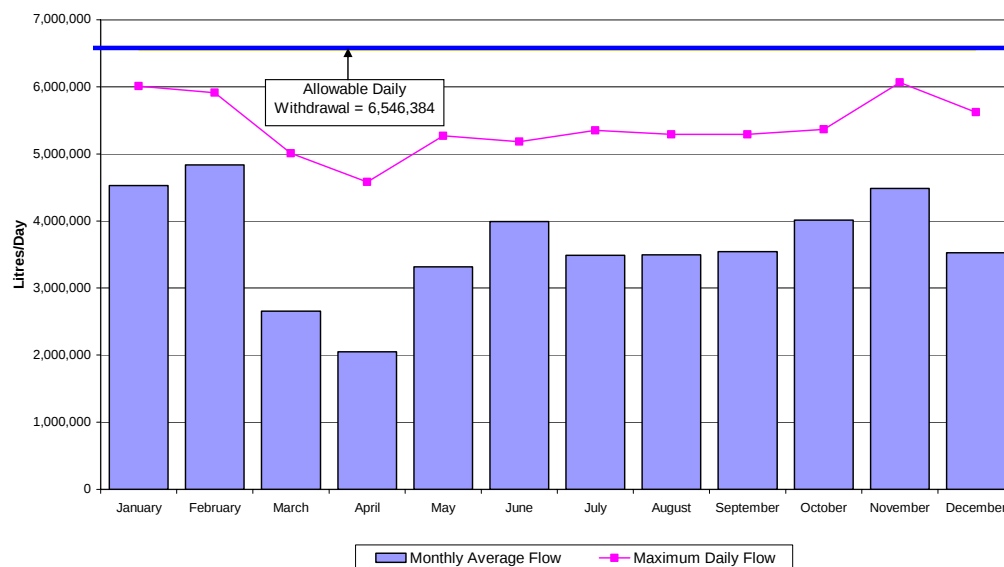
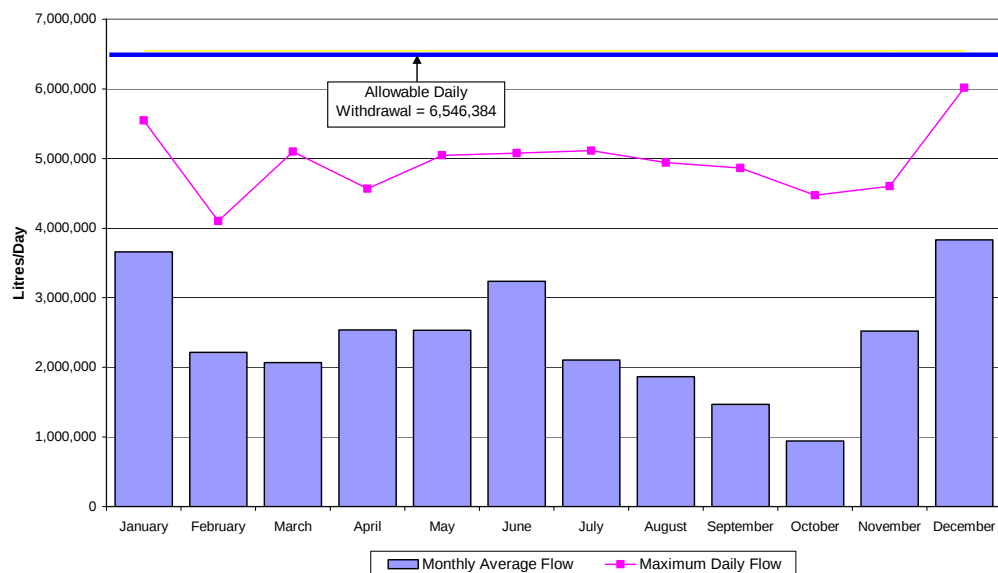


Figure 1j: Queensville Well No. 2
Monthly Average Flow and Maximum Daily Flow
2005



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Figure 1k: Queensville Well No. 3
Monthly Average Flow and Maximum Daily Flow
2005

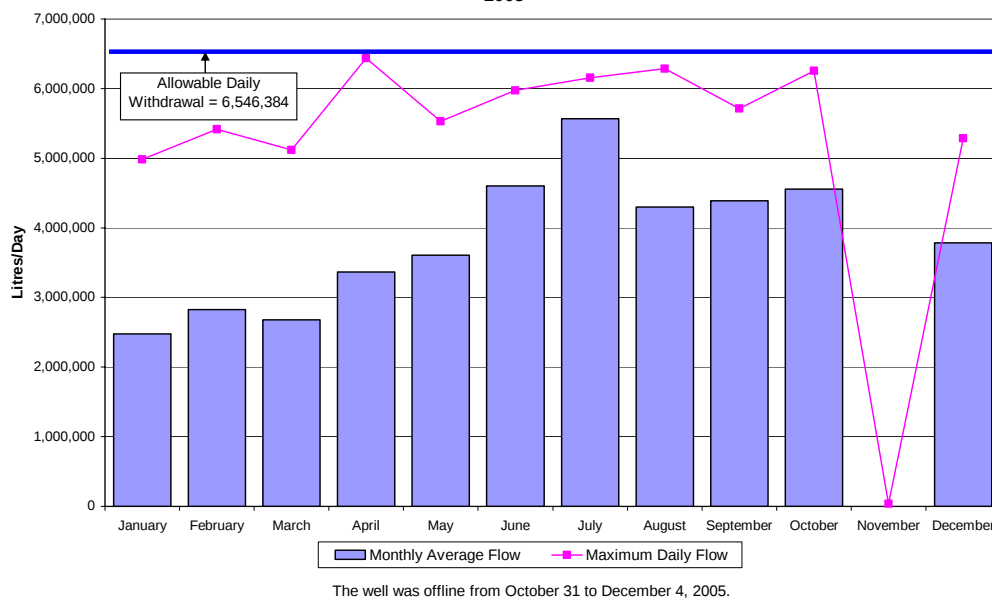
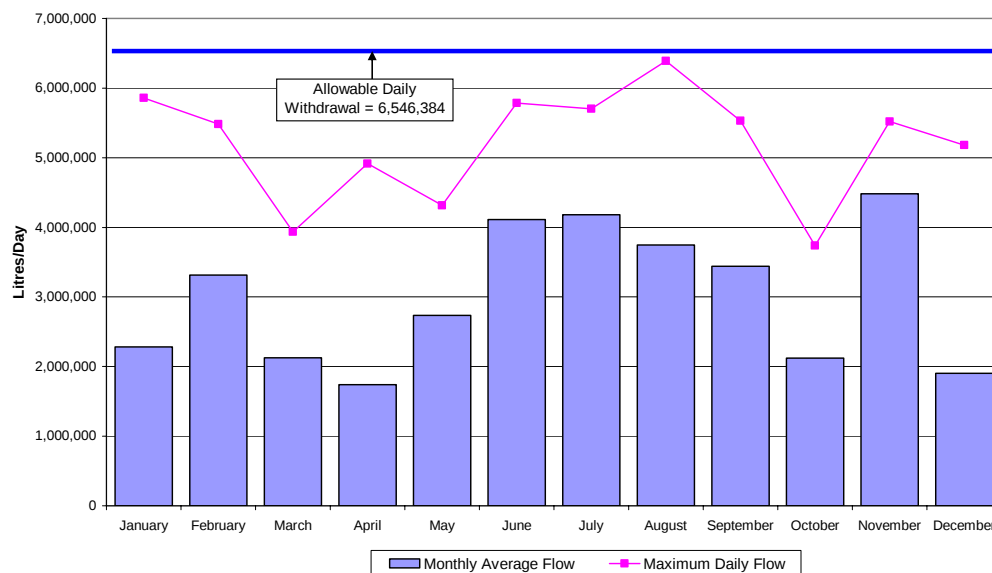


Figure 1l: Queensville Well No. 4
Monthly Average Flow and Maximum Daily Flow
2005



Throughout the period of January 1 – December 31, 2005 the withdrawal rates from the Newmarket/East Gwillimbury production wells did not exceed the allowable limits.

The ‘*Daily Instantaneous Peak Flow (litres)*’ for January 1- December 31, 2005 is presented in Figures 2a through 2l.

Figure 2a: Holland Landing Well No. 1
Daily Instantaneous Peak Flow
2005

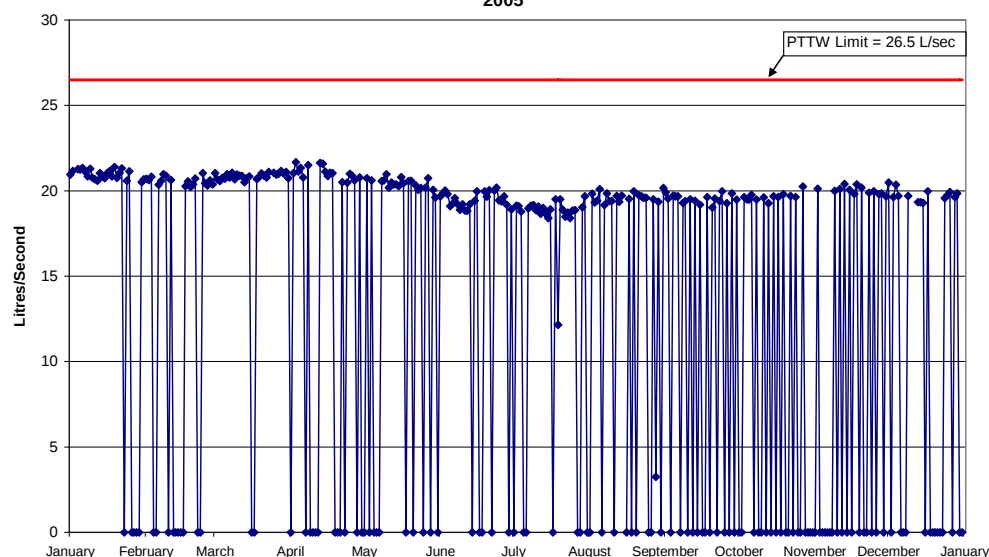
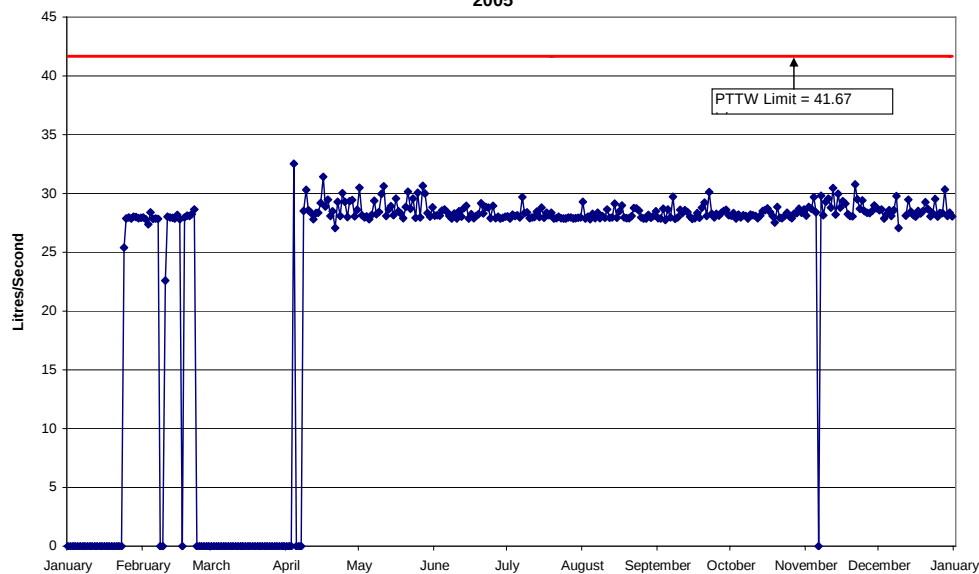


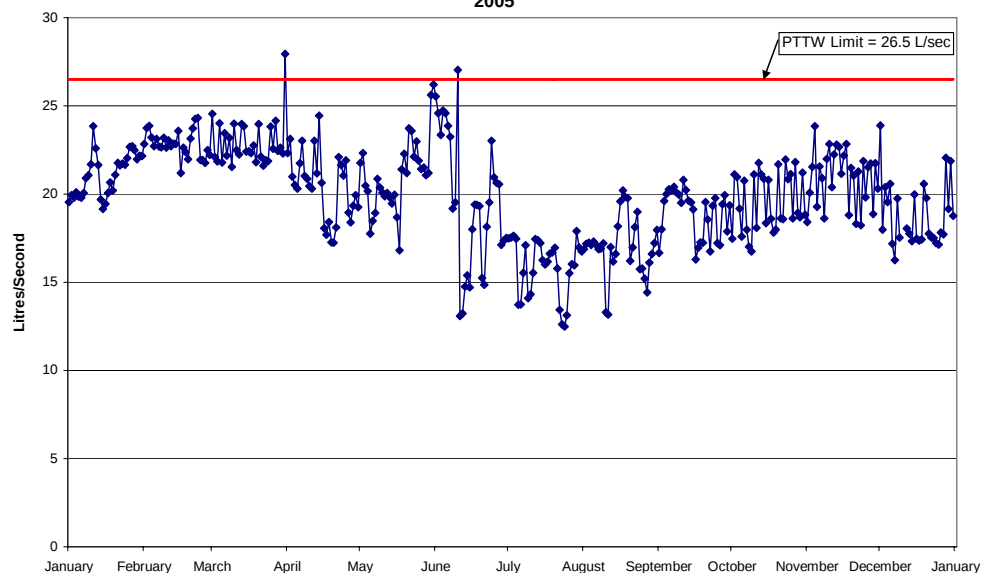
Figure 2b: Holland Landing Well No. 2
Daily Instantaneous Peak Flow
2005



The well was offline from January 1 to January 25, 2005 and from February 23 to April 7, 2005.

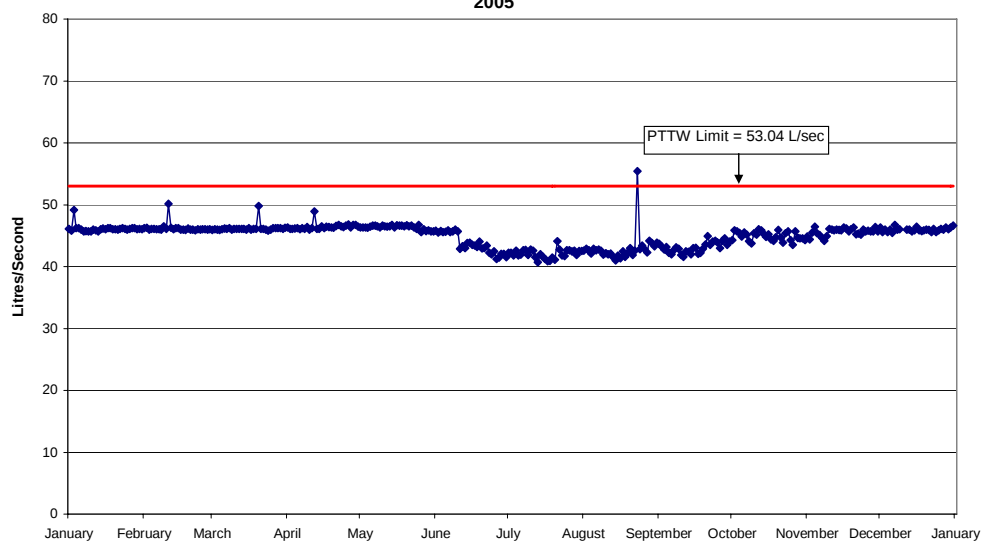
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Figure 2c: Newmarket Well No. 1
Daily Instantaneous Peak Flow
2005



The peak flows over the PTTW limit are no longer than 5 minutes in duration.

Figure 2d: Newmarket Well No. 2
Daily Instantaneous Peak Flow
2005



The peak flow over the PTTW is no longer than 5 minutes in duration.

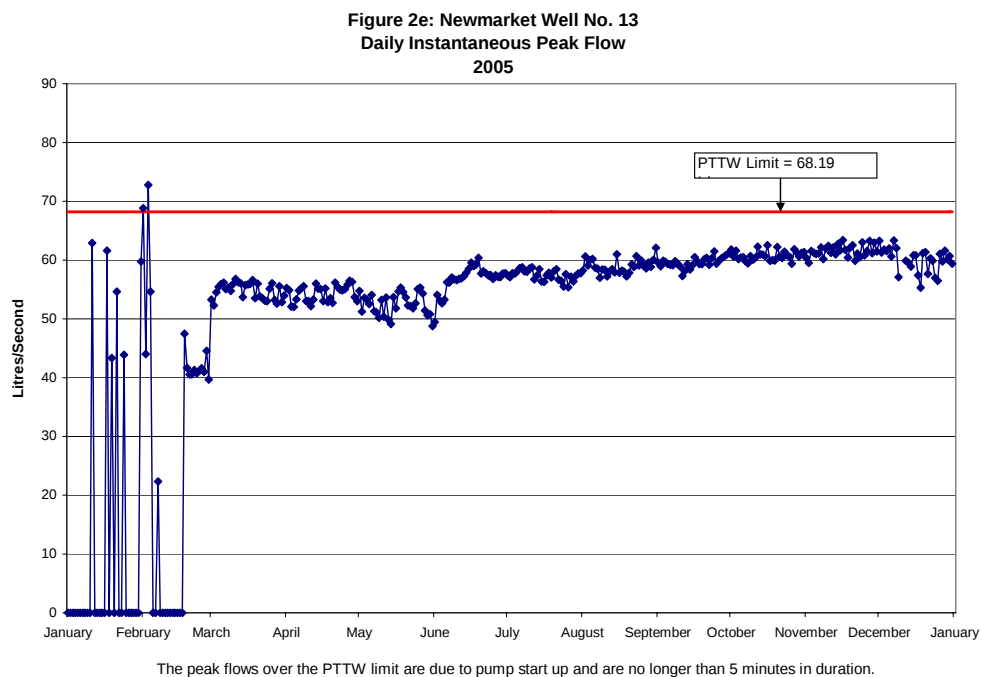


Figure 2c, 2d and 2e: shows some instantaneous peak flow rates above the Permit to Take Water limit. The instantaneous peak flow rates are short duration (on average less than 5 minutes) and represent less than 1% of the total volume of water taken for that day. These peaks are associated with the initial start up of a pump by removing of back pressure, a change in elevation in the water table or maintenance on the distribution system.

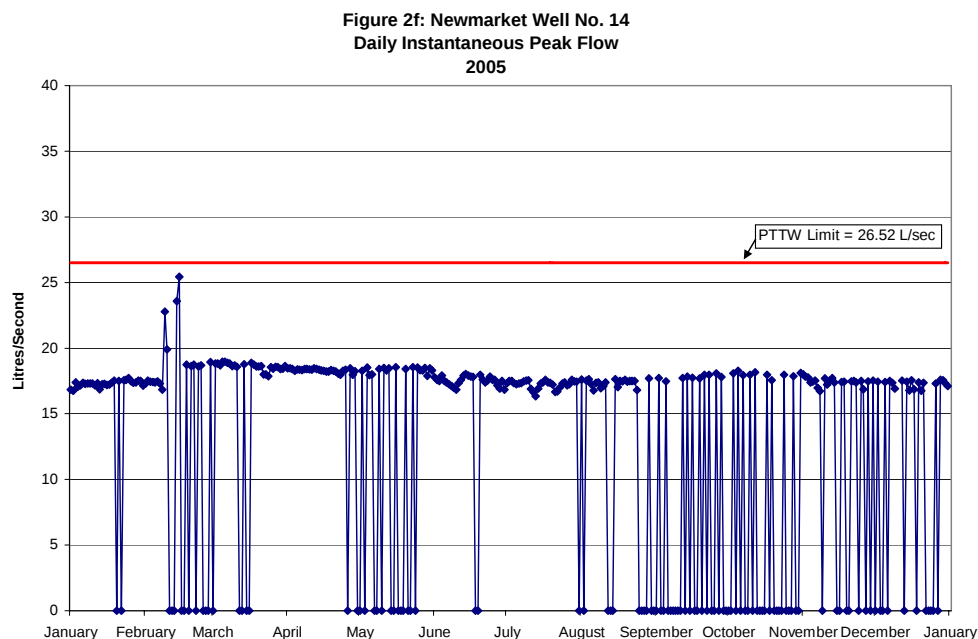


Figure 2g: Newmarket Well No. 15
Daily Instantaneous Peak Flow
2005

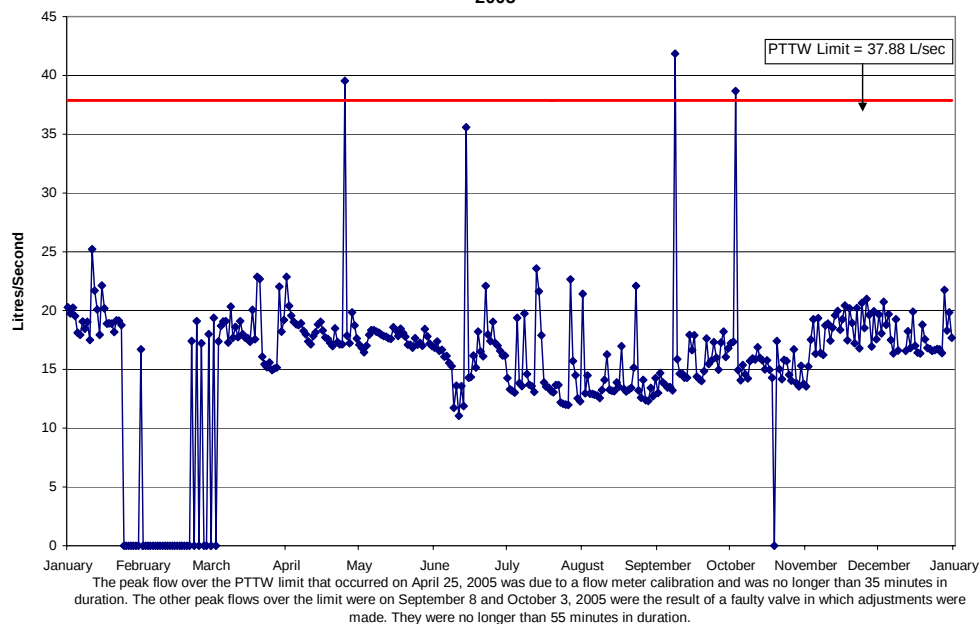


Figure 2h: Newmarket Well No. 16
Daily Instantaneous Peak Flow
2005

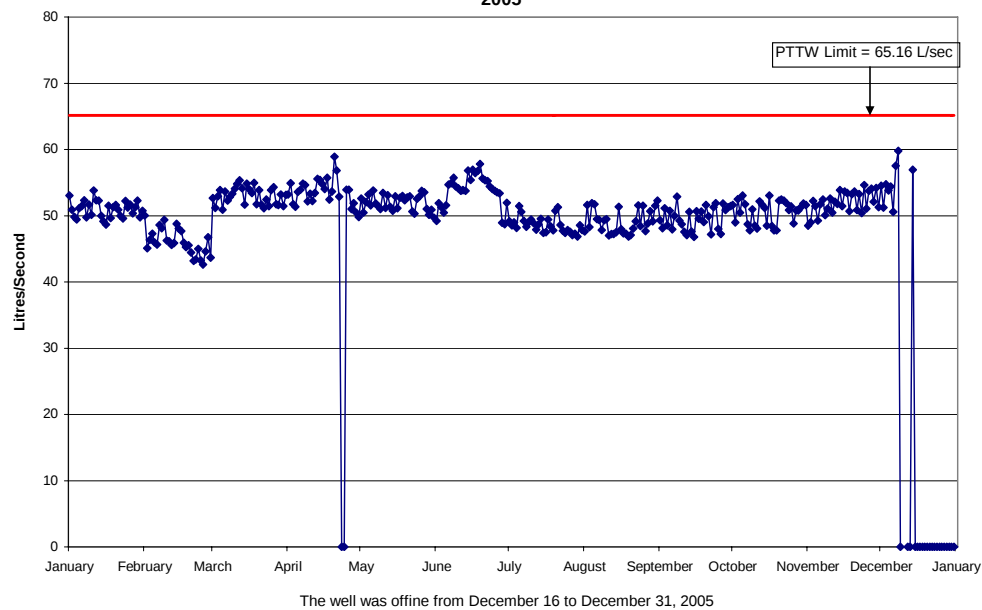


Figure 2i: Queensville Well No. 1
Daily Instantaneous Peak Flow
2005

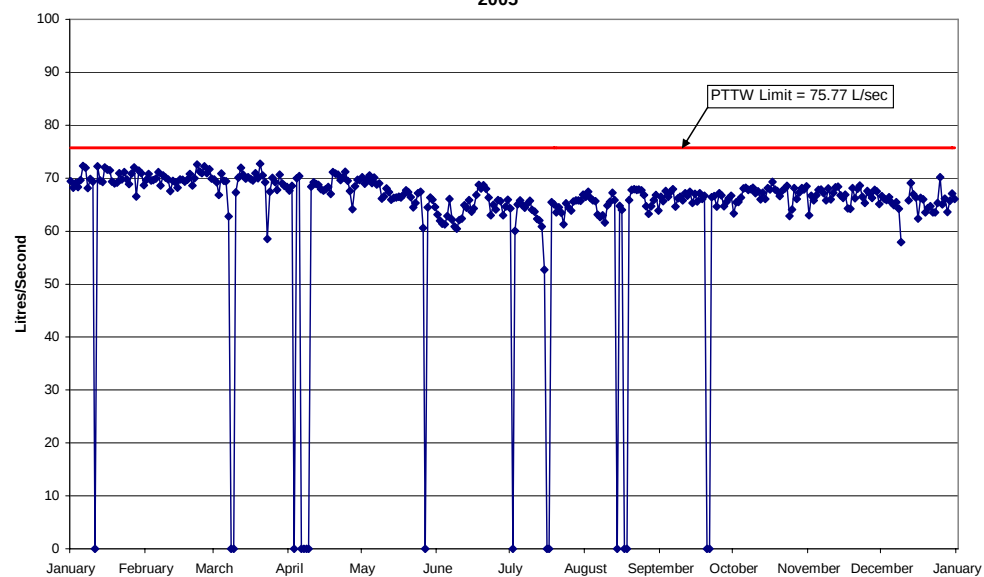


Figure 2j: Queensville Well No. 2
Daily Instantaneous Peak Flow
2005

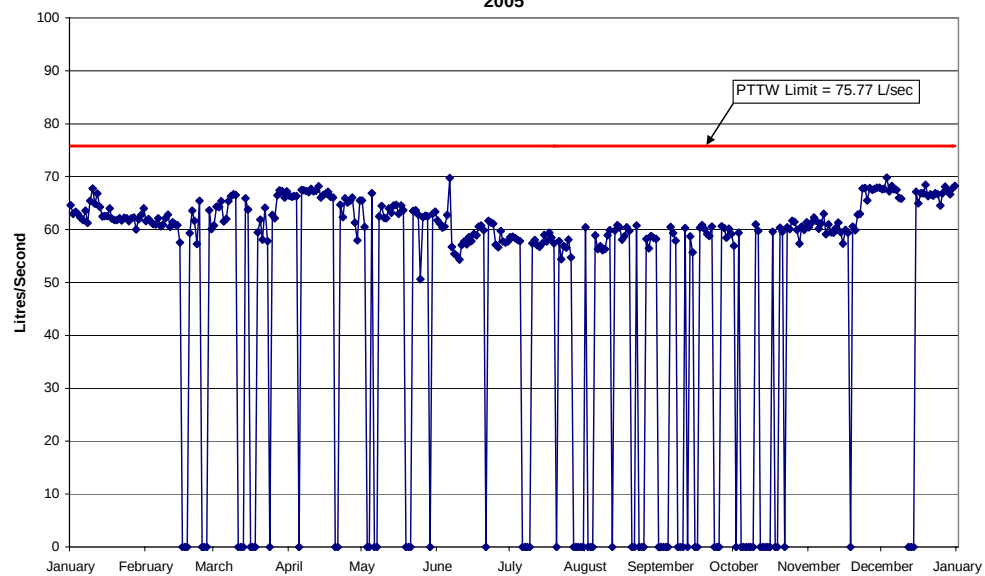


Figure 2k: Queensville Well No. 3
Daily Instantaneous Peak Flow
2005

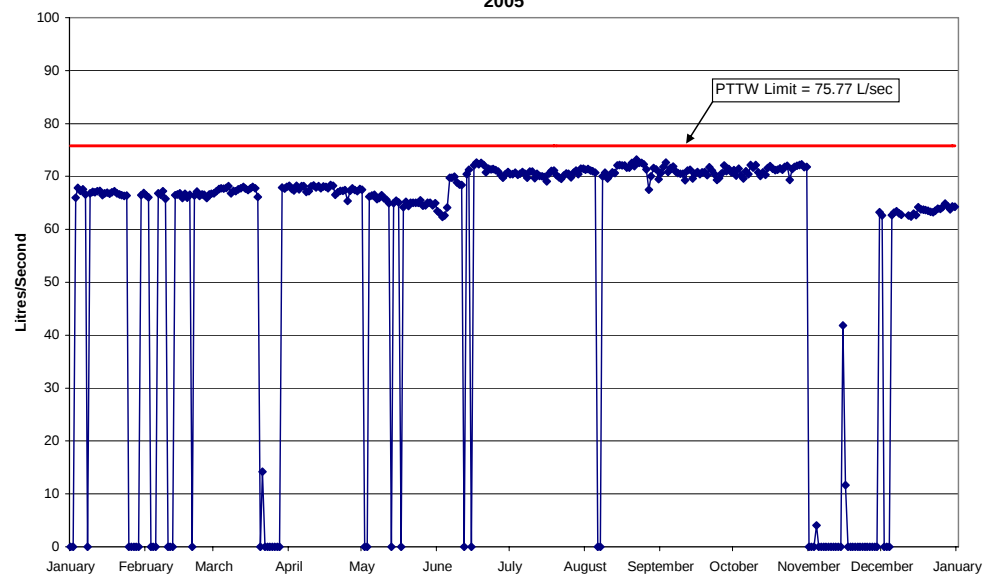
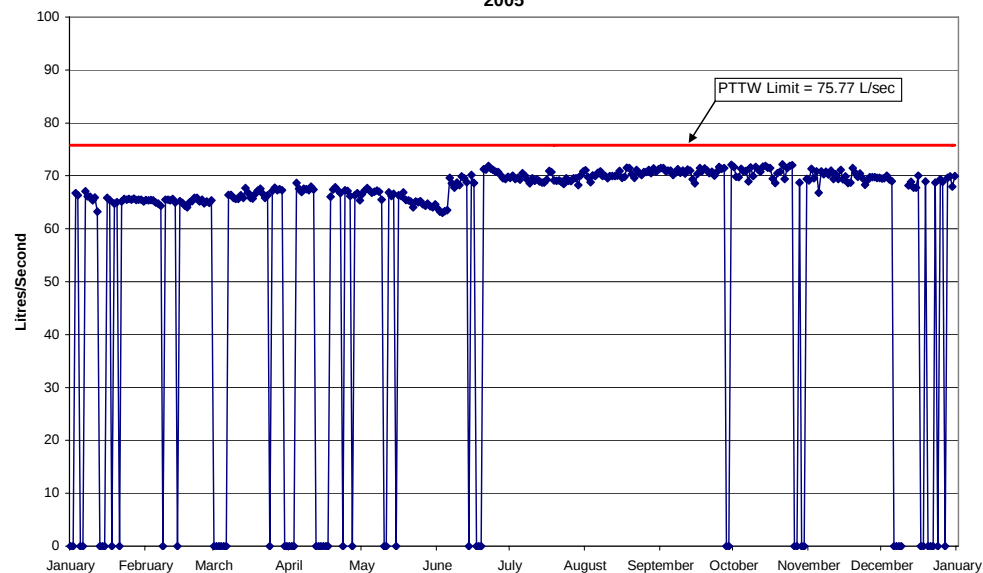


Figure 2l: Queensville Well No. 4
Daily Instantaneous Peak Flow
2005



4.10 Nobleton

York Region operates a water supply system to service Nobleton, Township of King, under authority of a Certificate of Approval (C of A) as issued by the Ontario Ministry of the Environment (MOE). The C of A includes reference to the valid Permit To Take Water (PTTW) also issued by the MOE. Details of the C of A and PTTW and other relevant classification information are presented in Table 1. The Nobleton water supply has undergone those facility upgrades in which the C of A requires.

TABLE 1: Nobleton Water Supply – Summary of Approvals and Permit

Current Certificate of Approval Number: Issue Date:	6988-5RRN8F November 24, 2003
Current Permit to Take Water Number: Issue Date: Expiry Date:	7433-6HWTED November 15, 2005 December 31, 2010
MOE Waterworks Number:	220002306
System Classification:	Water Distribution II (WDII)

4.10.1 Water Taking

The PTTW for the Nobleton Water Supply System allows York Region to withdraw up to 3,927,740 litres per day from production wells 2 and 3.

York Region monitors the water taking through flow meters placed downstream of each production well. Flow is monitored on a continuous basis to ensure that the regulated flows are not exceeded.

4.10.2 Measuring Points

Flow meters are in place downstream of production well 2 and 3. The flow meters record the instantaneous flow rate and the total volume of water that has passed through the meter. The flow meters are calibrated on an annual basis to meet the monitoring conditions of the C of A.

Flow data is retrieved and stored by two methods in York Region. This approach provides York Region with the opportunity to compare and contrast data should one method suddenly fail due to power failures or by other means.

1. York Region staff manually record the flow rates and total flow data on regular operational visits to the well sites. Average flow rates are also calculated using records of total flow and number of operating pump hours. This 'manual' data was used to generate the maximum daily withdrawal and monthly average flow tables and figures.

2. The flow meters are also connected to the Supervisory Control and Data Acquisition (SCADA) system so that data can be monitored remotely and stored electronically. This data was used to generate the instantaneous peak flow rate figures.

4.10.3 Water Withdrawal

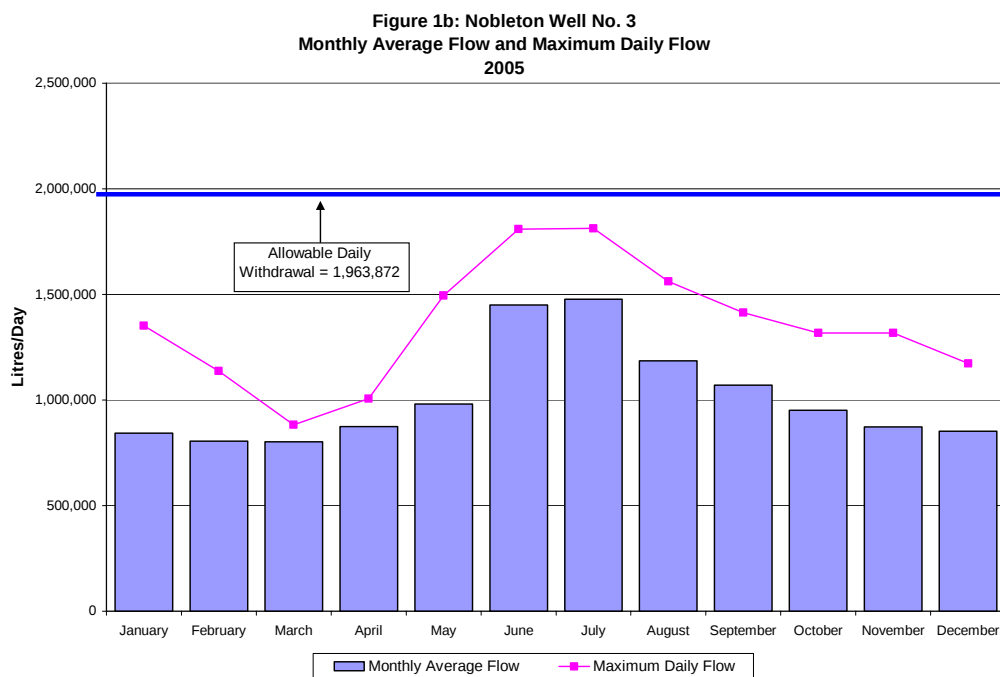
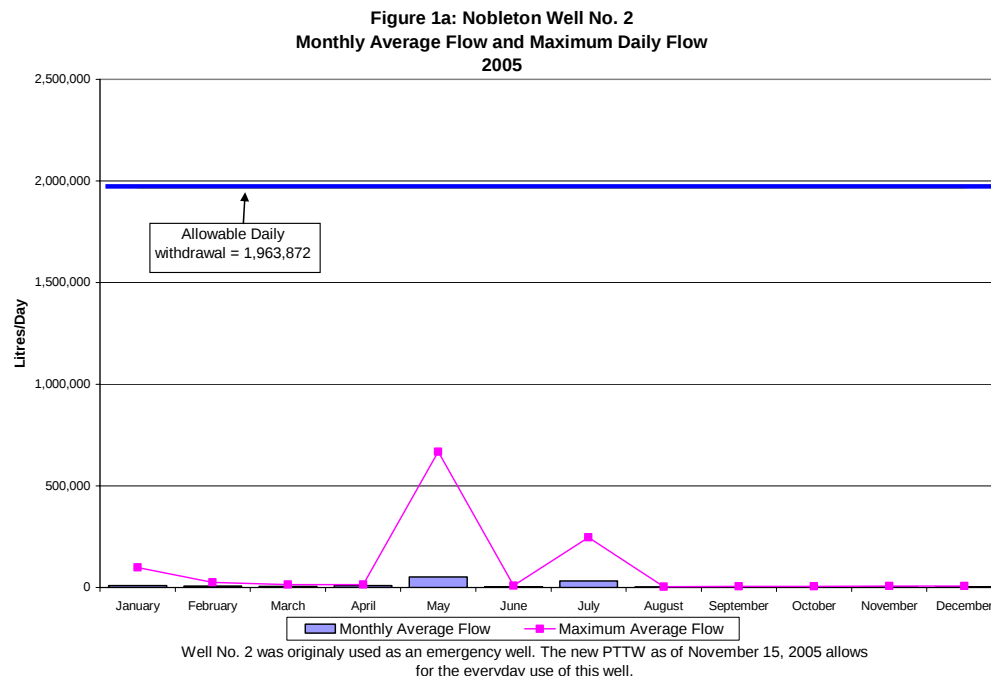
The total volume of water taken from the production wells of the Nobleton Water Supply system in January 1 – December 31, 2005 was 374,615,000 litres. This volume is less than the maximum permitted withdrawal as prescribed in the PTTW.

The maximum allowable daily water taking and the actual maximum recorded daily water taking are presented in Table 2.

TABLE 2: Allowable and Actual Maximum Daily Withdrawal from the Nobleton Production Wells for 2005

Production Well Number	Allowable Daily Withdrawal (Litres)	Actual Maximum Daily Withdrawal (Litres)
Well 2	1,963,872	668,500 (May 23, 2005)
Well 3	1,963,872	1,812,000 (July 13, 2005)

The monthly average flow rates, maximum daily flow, and allowable daily withdrawal are presented in Figure 1a and 1b. The actual dates of the peak monthly demands are summarized in the Appendices.



The withdrawal rates from the Nobleton production wells did not exceed the allowable limits during January 1 – December 31, 2005.

The 'Daily Instantaneous Peak Flow (litres)' for January 1- December 31, 2005 is presented found in Figures 2a and 2b.

Figure 2a: Nobleton Well No. 2
Daily Instantaneous Peak Flow
2005

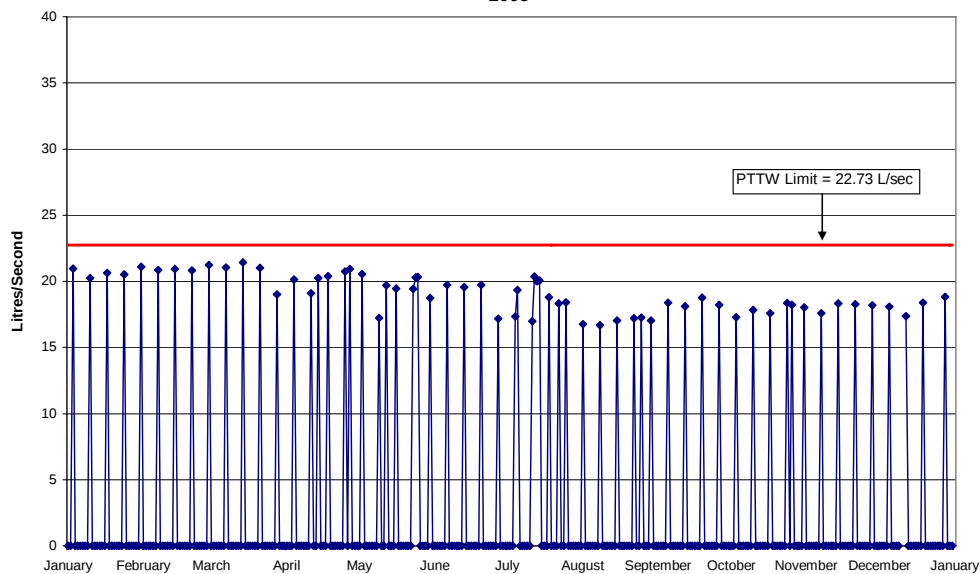
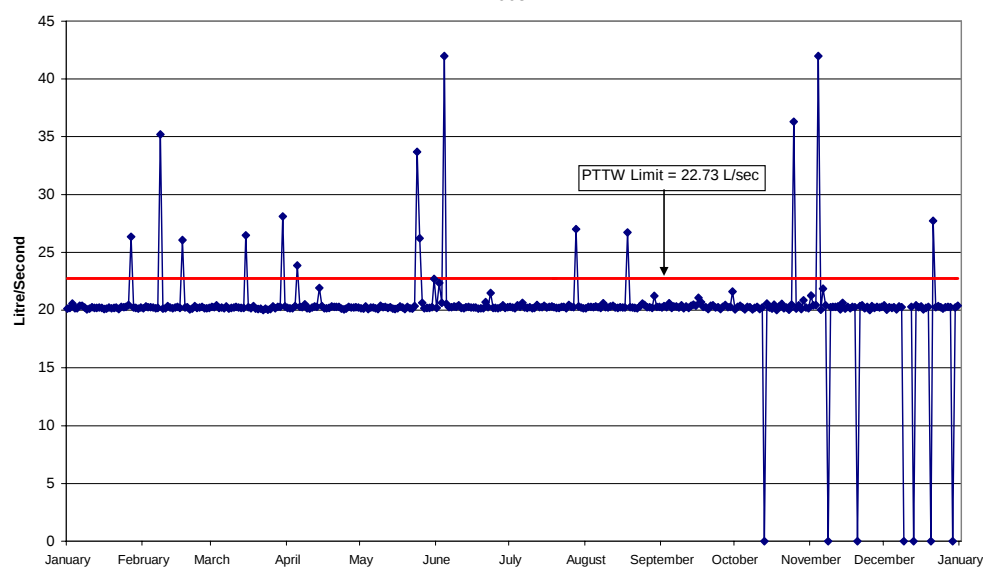


Figure 2b: Nobleton Well No. 3
Daily Instantaneous Peak Flow
2005



The peak flows over the PTTW limit are due to pump start and are no longer than 10 minutes in duration except for Jan 1, Feb 7, and Mar 15, 2005 which are no longer than 40 minutes and are due to the operators running the diesel generator for testing purposes.

4.11 Schomberg

York Region operates a water supply system to service Schomberg, Township of King, under authority of a Certificate of Approval (C of A) as issued by the Ontario Ministry of the Environment (MOE). The C of A includes reference to the valid Permit To Take Water (PTTW) also issued by the MOE. Details of the C of A and PTTW and other relevant classification information are presented in Table 1. The Schomberg water supply has undergone those facility upgrades that are required under the C of A.

TABLE 1: Schomberg Water Supply – Summary of Approvals and Permit

Current Certificate of Approval Number:	7111-5RUN2P
Issue Date:	November 24, 2003
Current Permit to Take Water Number:	3451-66BNPB
Issue Date:	November 9, 2004
Expiry Date:	November 30, 2014
MOE Waterworks Number:	220004901
System Classification:	Water Distribution II (WDII)

4.11.1 Water Taking

The PTTW for the Schomberg Water Supply System allows York Region to withdraw up to 3,926,560 litres per day from production wells 2 and 3.

York Region monitors the water taking through flow meters placed downstream of each production well. Flow is monitored on a continuous basis to ensure that the regulated flows are not exceeded.

4.11.2 Measuring Points

Flow meters are in place downstream of production well 2 and 3. The flow meters record the instantaneous flow rate and the total volume of water that has passed through the meter. The flow meters are calibrated on an annual basis to meet the monitoring conditions of the C of A.

Flow data is retrieved and stored by two methods in York Region. This approach provides York Region with the opportunity to compare and contrast data should one method suddenly fail due to power failures or by other means.

1. York Region staff manually record the flow rates and total flow data on regular operational visits to the well sites. Average flow rates are also calculated using records of total flow and number of operating pump hours. This 'manual' data was used to generate the maximum daily withdrawal and monthly average flow tables and figures.

2. The flow meters are also connected to the Supervisory Control and Data Acquisition (SCADA) system so that data can be monitored remotely and stored electronically. This data was used to generate the instantaneous peak flow rate figures.

4.11.3 Water Withdrawal

The total volume of water taken from the production wells of the Schomberg Water Supply system for January 1 – December 31, 2005 was 261,942,000 litres. This volume is less than the maximum permitted withdrawal as prescribed in the PTTW.

The maximum allowable daily water taking and the actual maximum recorded daily water taking are presented in Table 2.

TABLE 2: Allowable and Actual Maximum Daily Withdrawal from the Schomberg Production Wells for January 1 – December 31, 2005

Production Well Number	Allowable Daily Withdrawal (Litres)	Actual Maximum Daily Withdrawal (Litres)
Well 2	1,636,560	1,385,000 (October 31, 2005)
Well 3	2,290,000	1,474,000 (June 6, 2005)

The monthly average flow rates, maximum daily flow, and the allowable daily withdrawal are presented in Figure 1a and 1b. The actual dates of the peak monthly demands are summarized in the Appendices.

Figure 1a: Schomberg Well No. 2
Monthly Average Flow and Maximum Daily Flow
2005

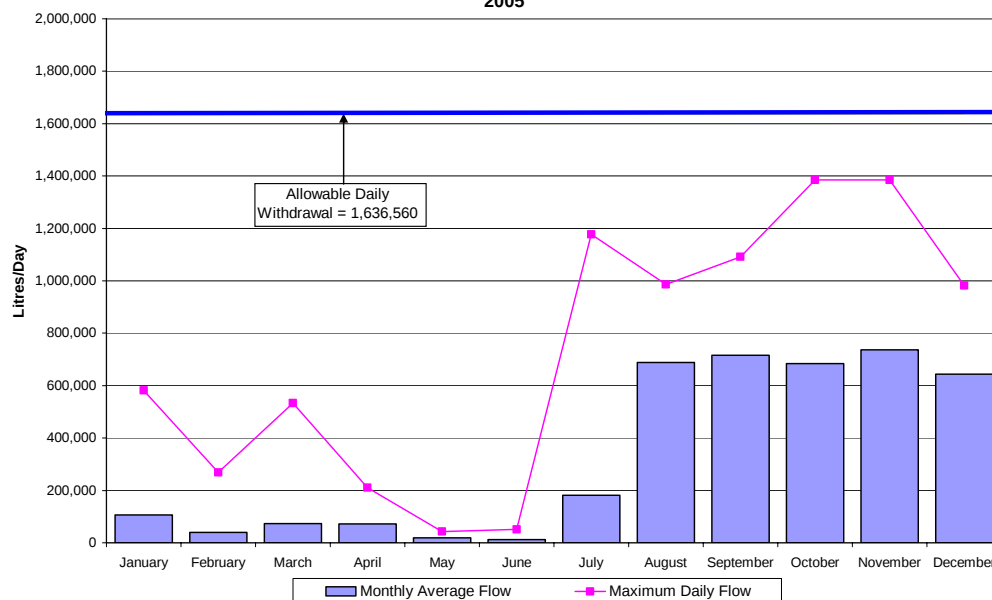
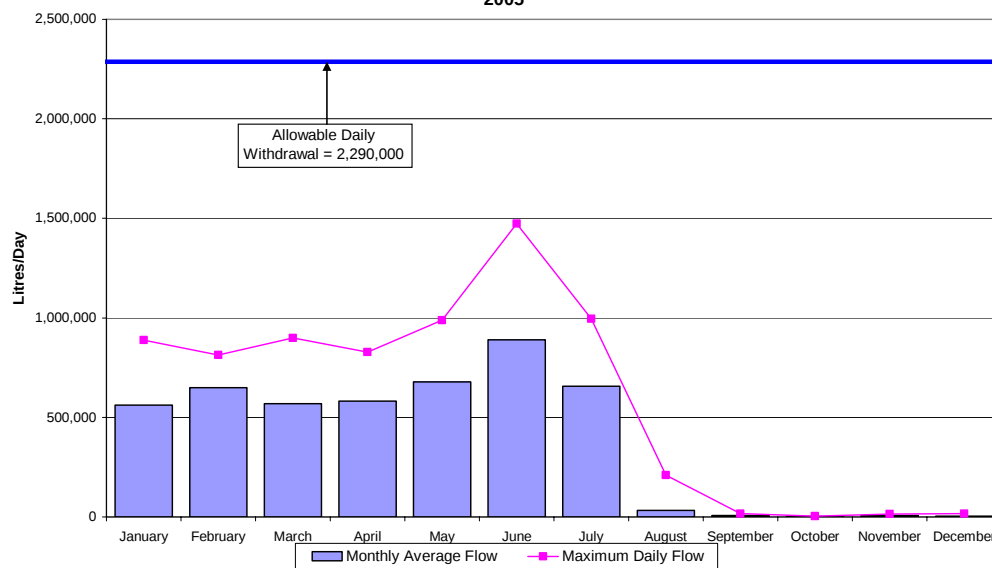


Figure 1b: Schomberg Well No. 3
Monthly Average Flow and Average Daily Flow
2005

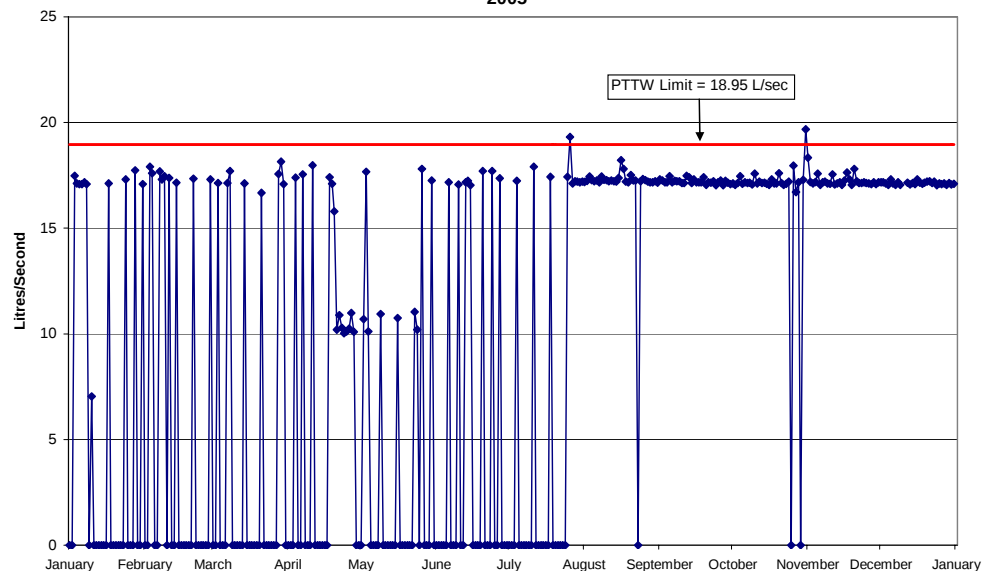


Well No. 3 has reduced flow from August to December. Upgrades to the booster pumps are underway. Well No. 2 has picked up the demand for the Schomberg wells during this period.

The actual volumes of water taken from the Schomberg production wells in the period of January 1 – December 31, 2005 did not exceed the allowable daily withdrawal volumes.

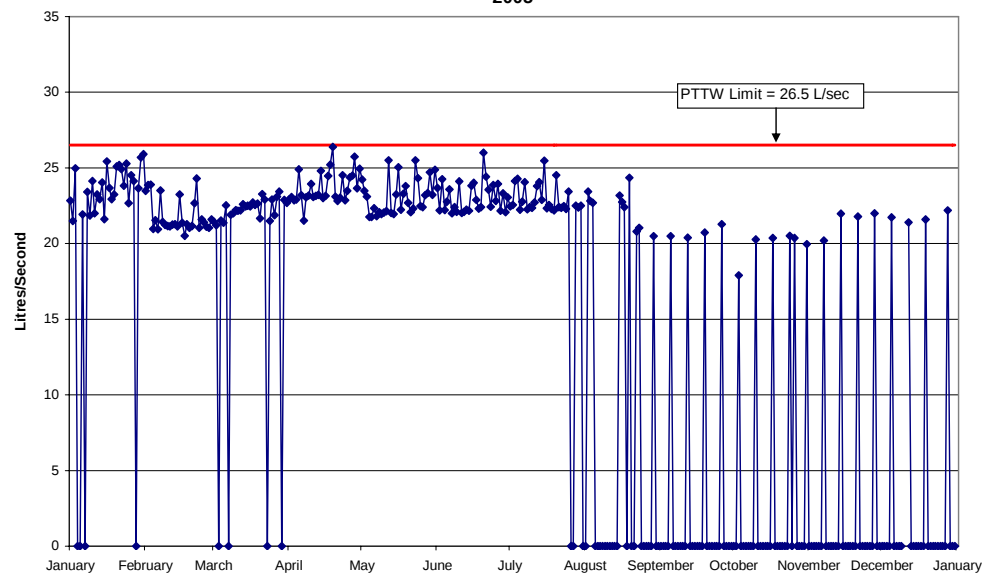
The 'Daily Instantaneous Peak Flow (litres)' for January 1- December 31, 2005 is found in the following graphs.

Figure 2a: Schomberg Well No. 2
Daily Instantaneous Peak Flow
2005



The peak flows over the PTTW limit are no longer than 5 minutes in duration.

Figure 2b: Schomberg Well No. 3
Daily Instantaneous Peak Flow
2005



Well No. 3 has reduced flow from August to December. Upgrades to the booster pumps are underway. Well No. 2 has picked up the demand for the Schomberg wells during this period.

4.12 Stouffville

York Region operates a water supply system to service Stouffville, Town of Whitchurch-Stouffville, under authority of a Certificate of Approval (C of A) as issued by the Ontario Ministry of the Environment (MOE). The C of A includes reference to the valid Permit To Take Water (PTTW) also issued by the MOE. Details of the C of A and PTTW and other relevant classification information are presented in Table 1. The Stouffville water supply system has undergone those facility upgrades that are required under the C of A.

TABLE 1: Stouffville Water Supply – Summary of Approvals and Permit

Current Certificate of Approval Number: Issue Date:	7346-6GTQQK October 26, 2005
Current Permit to Take Water Number: Issue Date: Expiry Date:	6008-6BPNT April 8, 2004 June 30, 2007
MOE Waterworks Number:	220002333
System Classification:	Water Distribution III (WD III)

4.12.1 Water Taking

The PTTW for the Stouffville Water Supply System allows York Region to withdraw up to 14,238,720 litres per day from all production wells.

York Region monitors the water taking through flow meters placed downstream of each production well. Flow is monitored on a continuous basis to ensure that the regulated flows are not exceeded.

4.12.2 Measuring Points

Flow meters are in place downstream of each production well. The flow meters record the instantaneous flow rate and the total volume of water that has passed through the meter. The flow meters are calibrated on an annual basis to meet the monitoring conditions of the C of A.

Flow data is retrieved and stored by two methods in York Region. This approach provides York Region with the opportunity to compare and contrast data should one method suddenly fail due to power failures or by other means.

1. York Region staff manually record the flow rates and total flow data on regular operational visits to the well sites. Average flow rates are also calculated using records of total flow and number of operating pump hours. This 'manual' data was used to generate the maximum daily withdrawal and monthly average flow tables and figures.

2. The flow meters are also connected to the Supervisory Control and Data Acquisition (SCADA) system so that data can be monitored remotely and stored electronically. This data was used to generate the instantaneous peak flow rate figures.

4.12.3 Water Withdrawal

The total volume of water taken from the production wells of the Stouffville Water Supply system from January 1 – December 31, 2005 was 1,525,906,000 litres. This volume is less than the maximum permitted withdrawal as prescribed in the PTTW.

The maximum allowable daily water taking and the actual maximum recorded daily water taking are presented in Table 2.

TABLE 2: Allowable and Actual Maximum Daily Withdrawal from the Stouffville Production Wells for January 1 – December 31, 2005

Well Number	Allowable Daily Withdrawal (Litres)	Actual Maximum Daily Withdrawal (Litres)
Well 1	2,946,240	2,361,333 (October 1, 2005)
Well 2	2,946,240	1,826,000 (June 6, 2005)
Well 3	2,946,240	2,255,667 (June 10, 2005)
Well 5	2,289,600	1,994,000 (June 6, 2005)
Well 6	3,110,400	1,537,000 (June 6, 2005)

The monthly average flow rates, maximum daily flow, and allowable daily withdrawal are presented in Figure 1a, 1b, 1c, 1d, and 1e. The actual dates of the peak monthly demands are summarized in the Appendices.

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Figure 1a: Stouffville Well No. 1
Monthly Average Flow and Maximum Daily Flow
2005

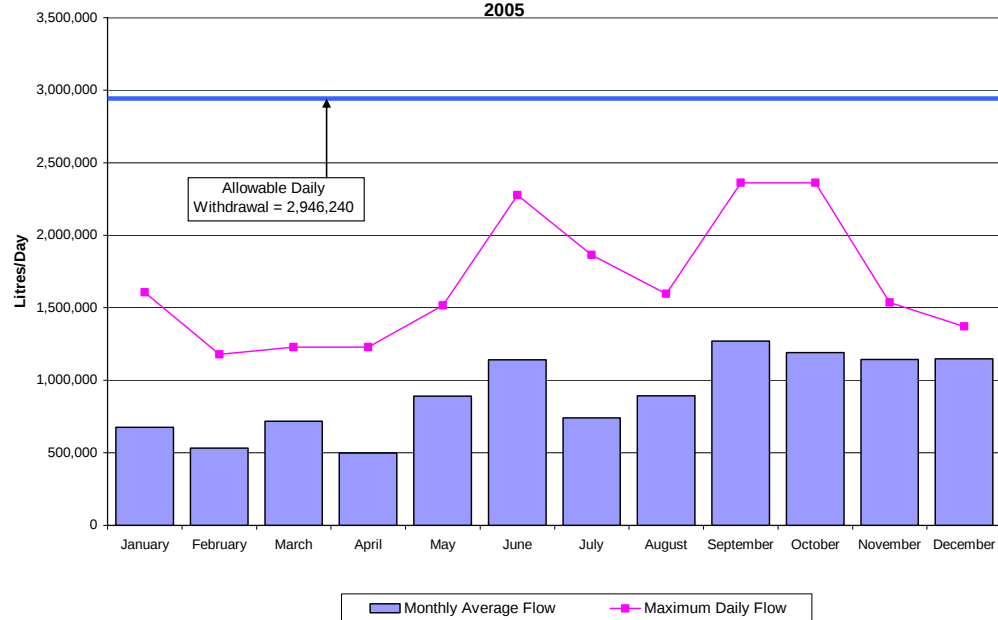


Figure 1b: Stouffville Well No. 2
Monthly Average Flow and Maximum Daily Flow
2005

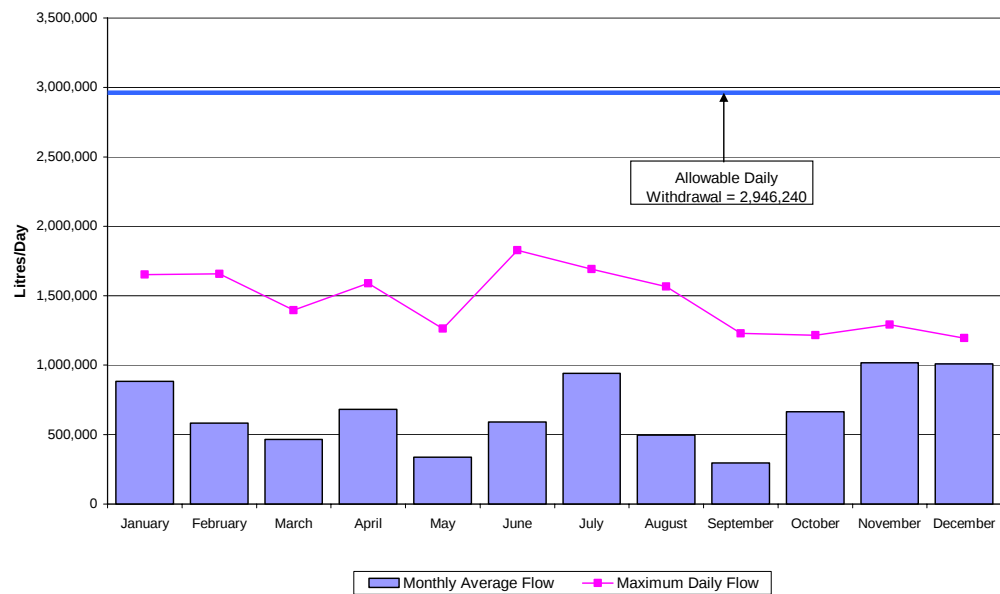


Figure 1c: Stouffville Well No. 3
Monthly Average Flow and Maximum Daily Flow
2005

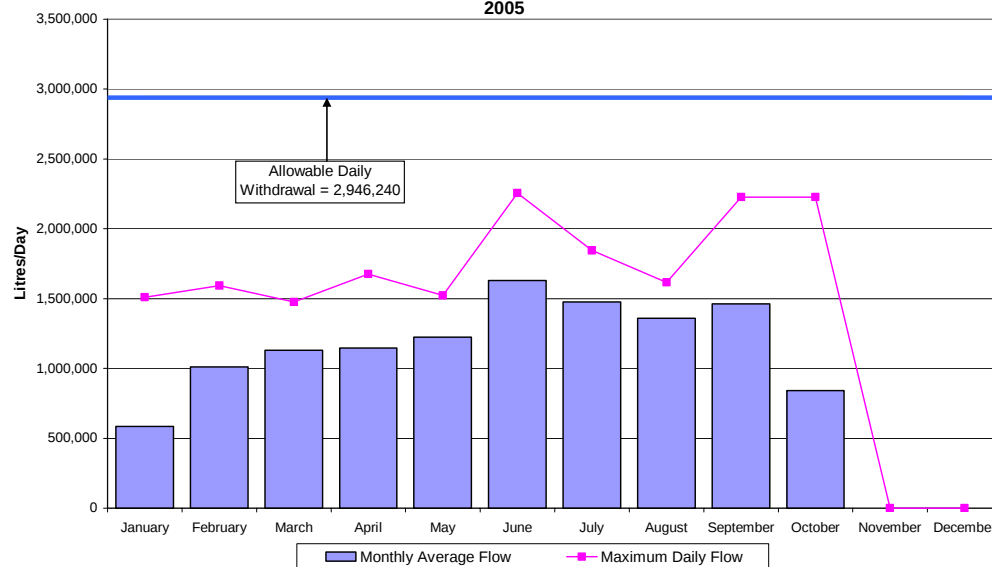


Figure 1d: Stouffville Well No. 5
Monthly Average Flow and Maximum Daily Flow
2005

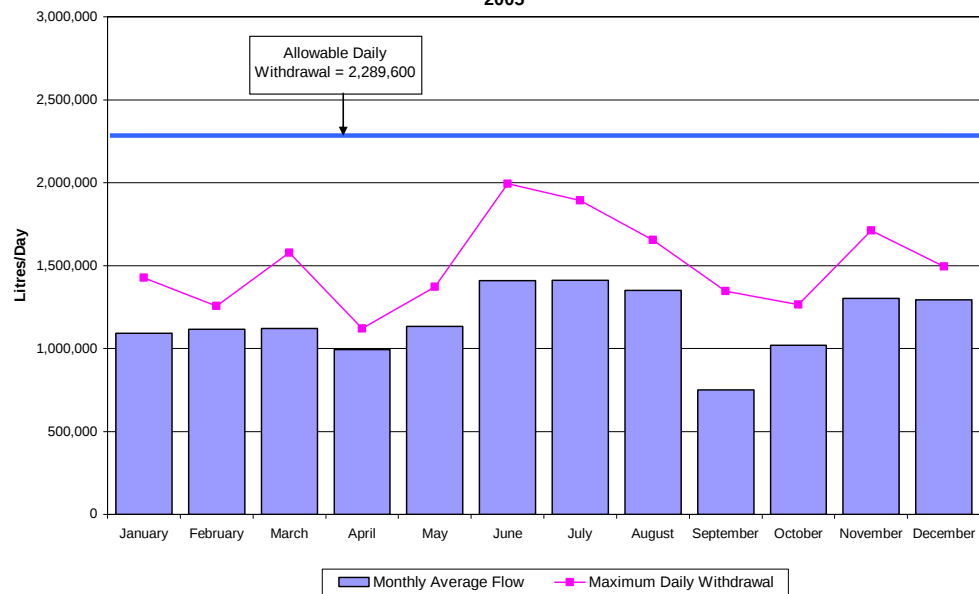
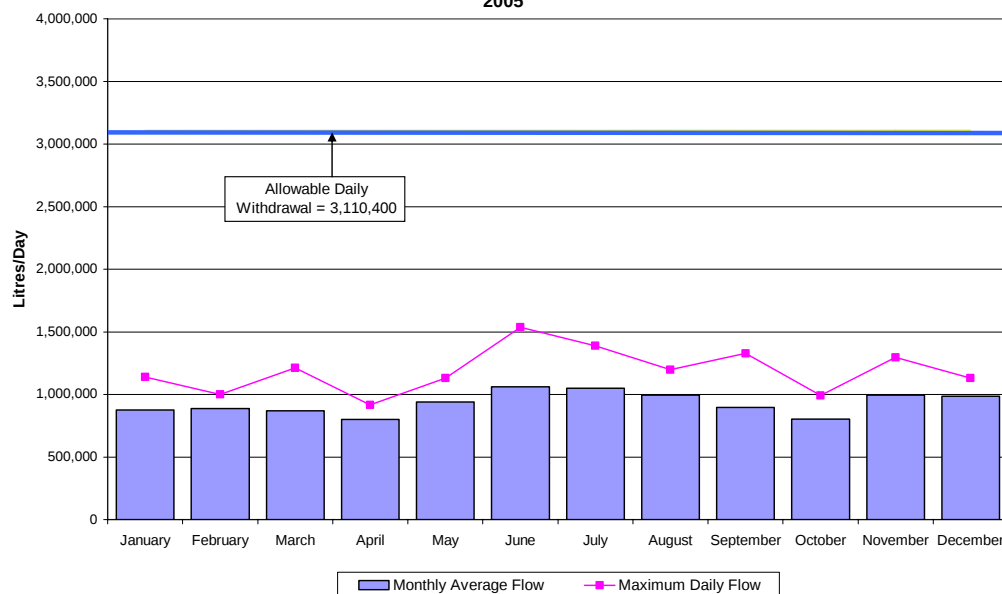


Figure 1e: Stouffville Well No. 6
Monthly Average Flow and Maximum Daily Flow
2005



The actual volumes of water taken from the Stouffville production wells for January 1 – December 31, 2005 did not exceed the allowable daily withdrawal volumes.

The ‘*Daily Instantaneous Peak Flow (litres)*’ for January 1- December 31, 2005 is presented in Figures 2a through 2e.

Figure 2a: Stouffville Well No. 1
Daily Instantaneous Peak Flow
2005

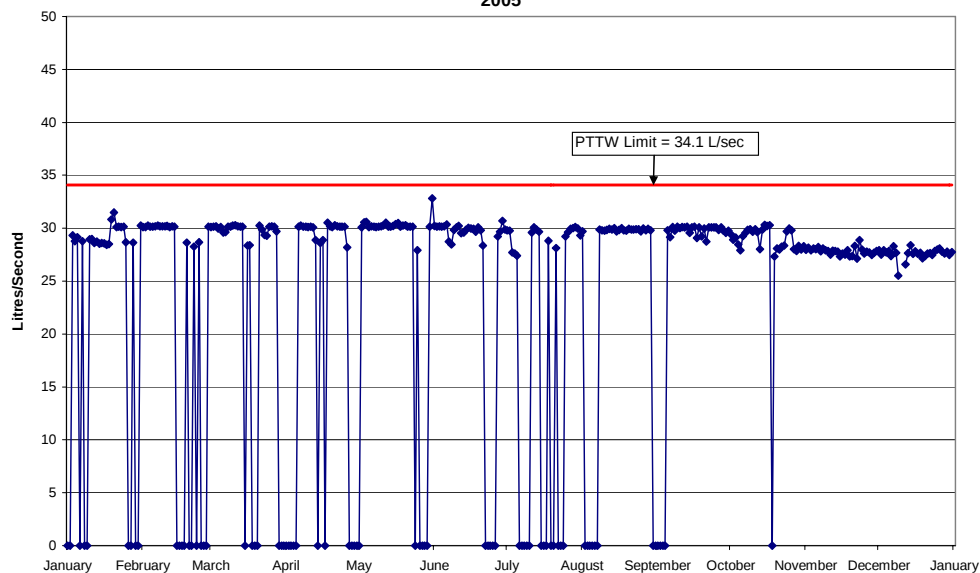


Figure 2b: Stouffville Well No. 2
Daily Instantaneous Peak Flow
2005

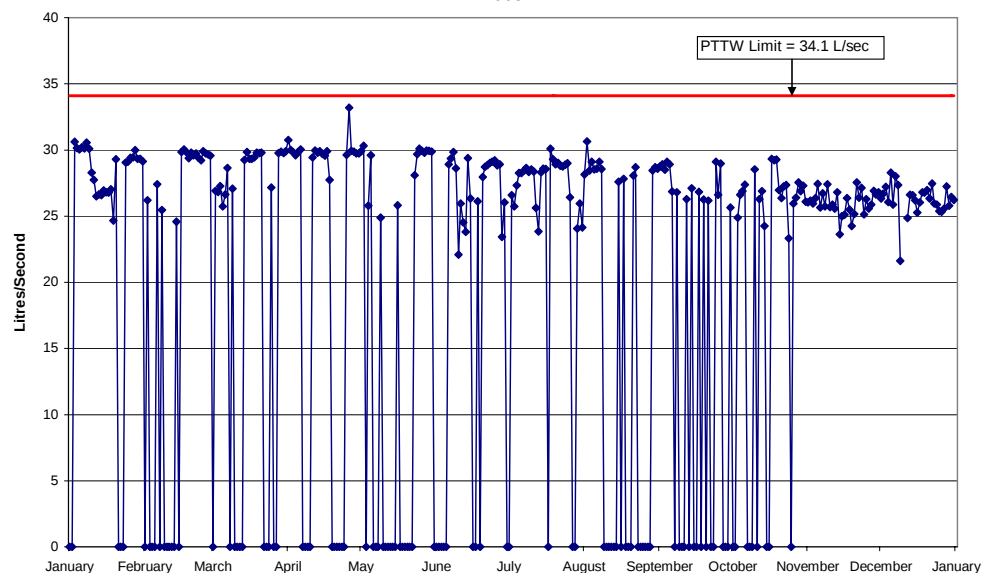
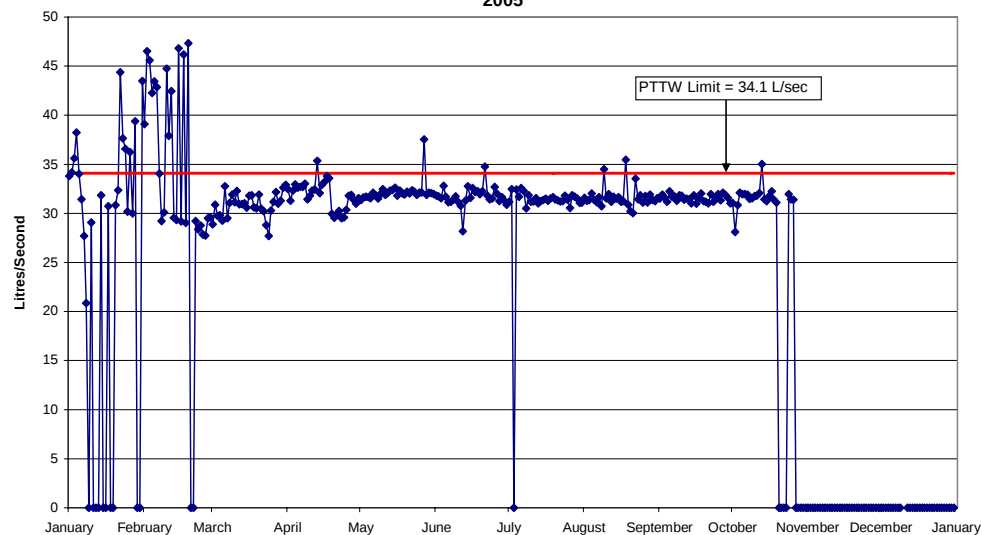


Figure 2c: Stouffville Well No. 3
Daily Instantaneous Peak Flow
2005



The peak flows over the PTTW limit are no longer than 10 minutes in duration and are due to pump start up except for August 18, 2005 where the flow exceeded the limit for 37 minutes due to the operators running the diesel generator. The well was offline from October 26 to December 31, 2005.

Figure 2d: Stouffville Well No. 5
Daily Instantaneous Peak Flow
2005

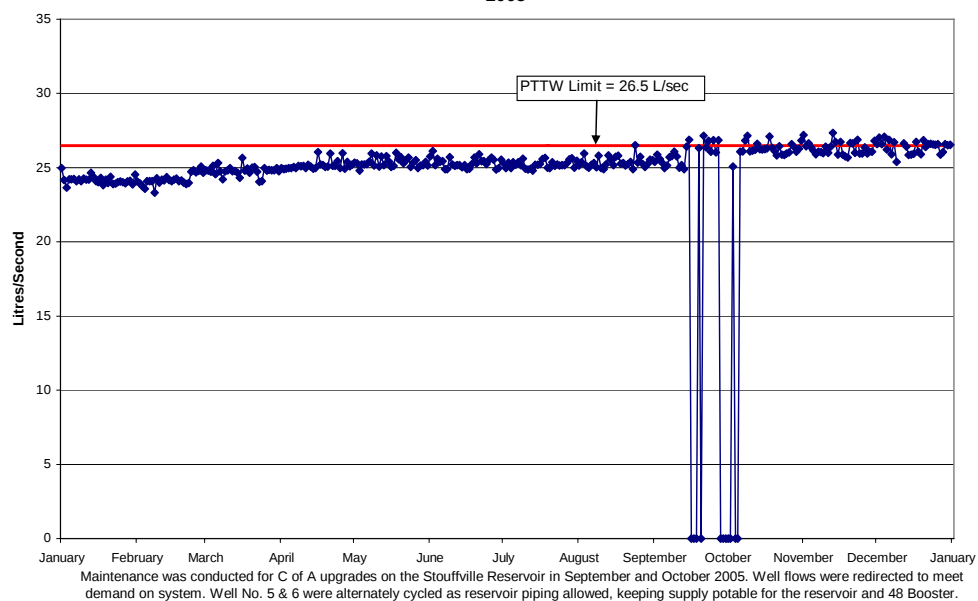
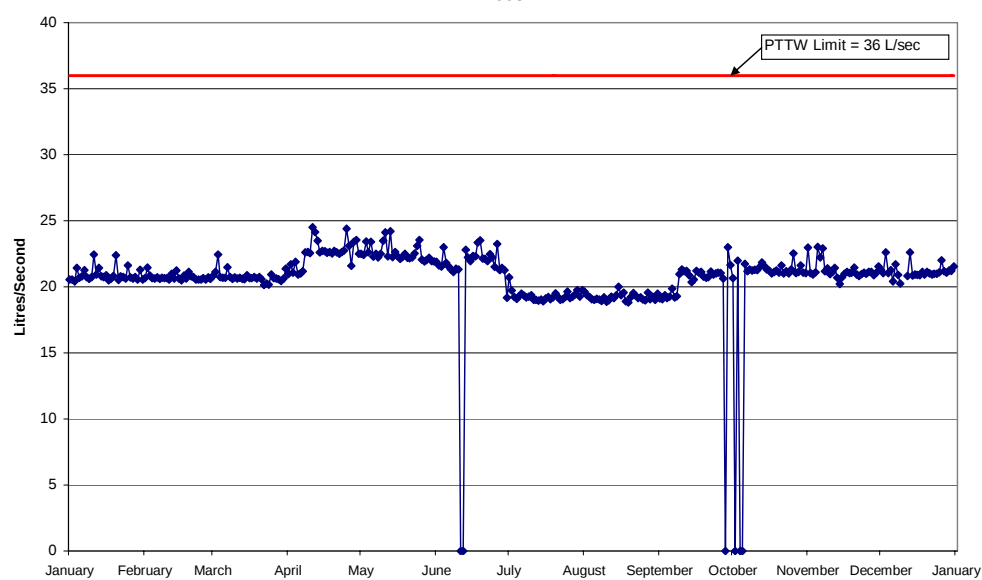


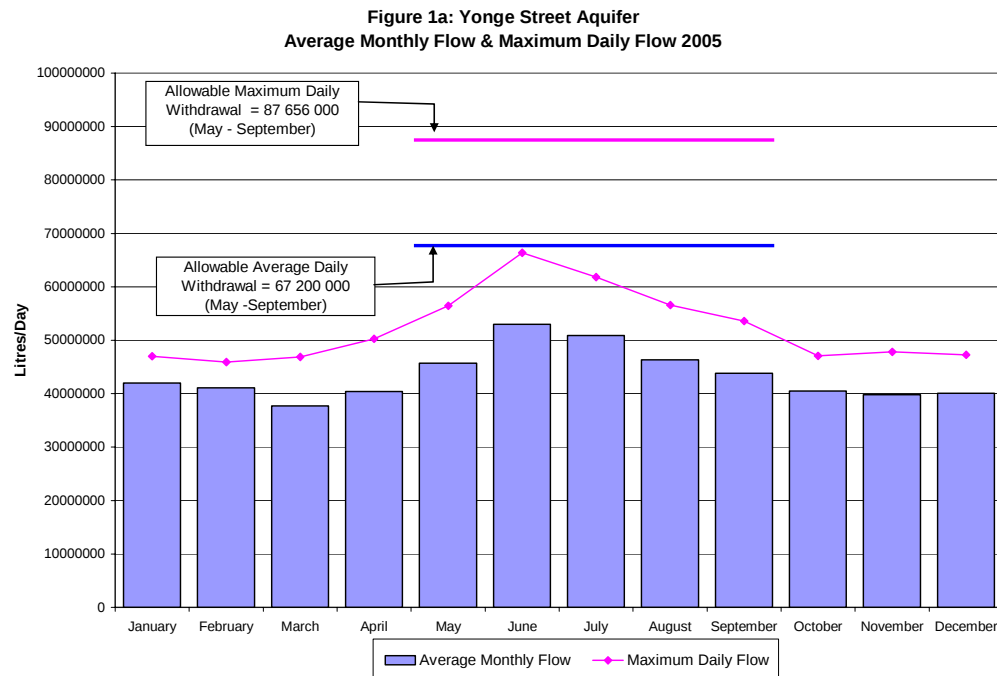
Figure 2e: Stouffville Well No. 6
Daily Instantaneous Peak Flow
2005



4.13 Yonge Street Aquifer

The Yonge Street Aquifer is the name given to the source aquifer that supplies groundwater to the communities of Aurora, Newmarket, Holland Landing, Queensville and Sharon. There are 20 wells in total that obtain water from the Yonge Street Aquifer, which are captured under one Permit to Take Water 6623-68QQ6L.

Detailed information about the individual wells has been provided in separate sections and appears in this report under the 'Aurora' or 'Newmarket' headings. However, for the purposes of understanding the accumulative impact of our water taking on the Yonge Street Aquifer, Figure 1a has been provided below.



The Permit To Take Water for Yonge Street Aquifer (YSA) is the only permit for York Region wells that has a specific condition for the annual average for daily water taking. The Permit states that on an annual basis, the average daily taking for all the wells in the YSA cannot exceed 42,000 m³. In 2005, the annual average was 43,455m³/day, which is 3% higher than the allowable limit. All other limits imposed by the YSA PTTW were met and the total volume taken for 2005 was not significantly higher than 2004.

Well demand was previously identified as an issue in the Master Plan for water supply and construction activities are underway to connect these communities to the Region of Peel lake based supply. This connection is expected to be

completed by the Spring of 2007. Staff are reviewing opportunities to advance the construction schedule. It is unlikely that the YSA wells can achieve an annual average of 42,000 m³/day until the Peel connection is complete.

The annual average of 42,000 m³ per day was derived from elementary modelling work in 1993. Since then, our understanding of this aquifer has advanced by the development of the Regional groundwater flow model and our monitoring activities. Discussions with the Ministry of Environment have already commenced to determine the practicality of the annual average limit and the feasibility of amending the permit. Work to date suggests that water levels in the YSA have stabilized over the last five years. In addition, modelling efforts have shown that a higher annual average in the YSA is sustainable.

4.14 York Water System

York Region operates a water supply system to service the Town of Markham, the Town of Richmond Hill, the City of Vaughan, and parts of the Town of Aurora and Newmarket. The York Water System is classified as a 'Large Municipal System receiving water from a Large Municipal System'. It distributes water supplied from the City of Toronto to the area municipalities. As such, it does not have a requirement for a Permit to Take Water.

There are several Certificate of Approval (C of A) as issued by the Ontario Ministry of the Environment (MOE) in the York Water System. Details of the C of A and other relevant classification information are presented in Table 1.

TABLE 1: York Water System – Summary of Approvals and Permit

Current Certificate of Approval:	
Jefferson Pumping Station:	3167-66JMRV
Issue Date:	November 18, 2004
Markham Pumping Station:	0714-5RYNS3
Issue Date:	October 10, 2003
Richmond Hill Pumping Station	7-1138-97-006
Issue Date:	September 2, 1998
North Richmond Hill Pumping Station:	3889-5K4SKT
Issue Date:	March 10, 2003
O.Reg. 170/03 Exemption:	2982-5ZZHKJ
Issue Date:	June 22, 2004
MOE Waterworks Number:	260001929
System Classification:	Water Distribution IV (WDIV)

4.14.1 Water Taking

York Region monitors the water taking through flow meters. Flows are monitored on a continuous basis to ensure that the regulated flows are not exceeded.

The agreement with the City of Toronto and York Region (Toronto/York Water Supply Agreement) allows for a daily maximum of 460 megalitres per day in 2005.

4.14.2 Measuring Points

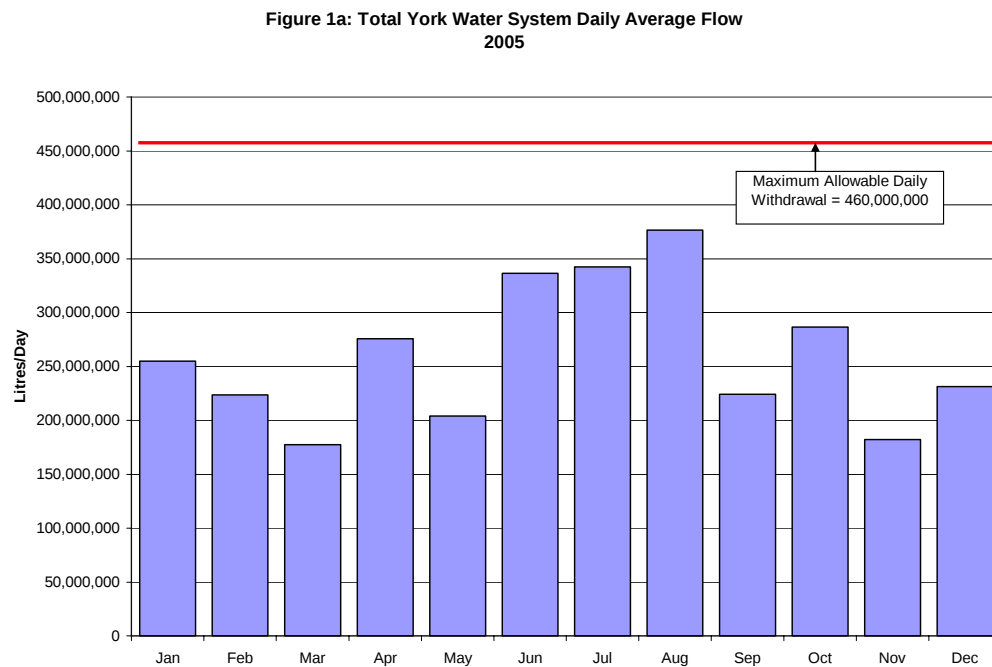
York Region staff manually record the flow rates and total flow data on regular operational visits to the plant.

The flow meters are calibrated on an annual basis to meet the monitoring conditions of the C of A.

4.14.3 Water Withdrawal

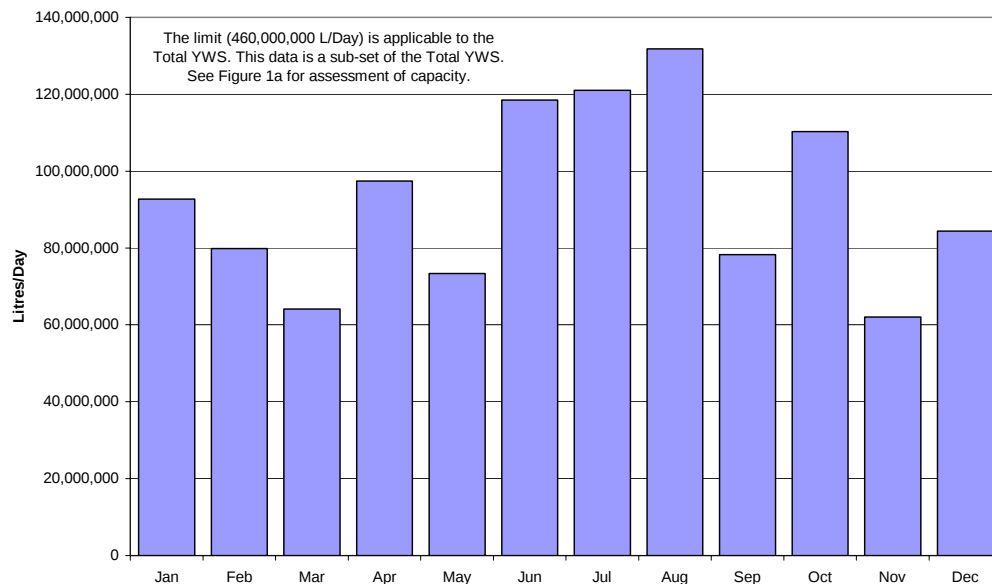
The total volume of water transmitted by the YWS for the reporting period of January 1 – December 31, 2005 was 93,189,757,000 litres. This volume is less than the maximum permitted withdrawal as prescribed in the operating agreement with the City of Toronto.

The total York Water System (YWS) monthly flow rates are presented in Figure 1a.

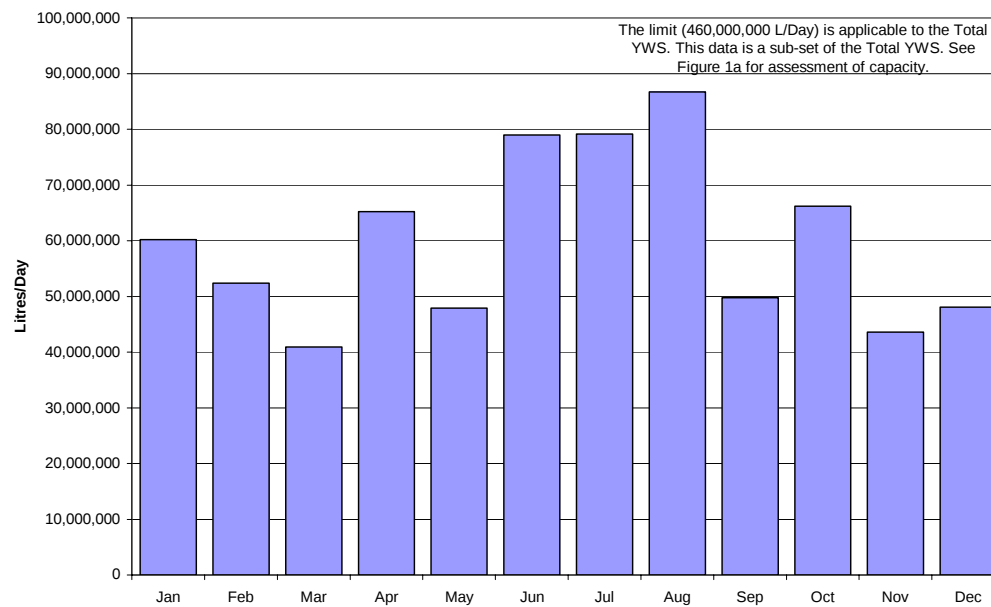


The monthly flow rates for each municipality served by the YWS are presented in Figures 1b through e.

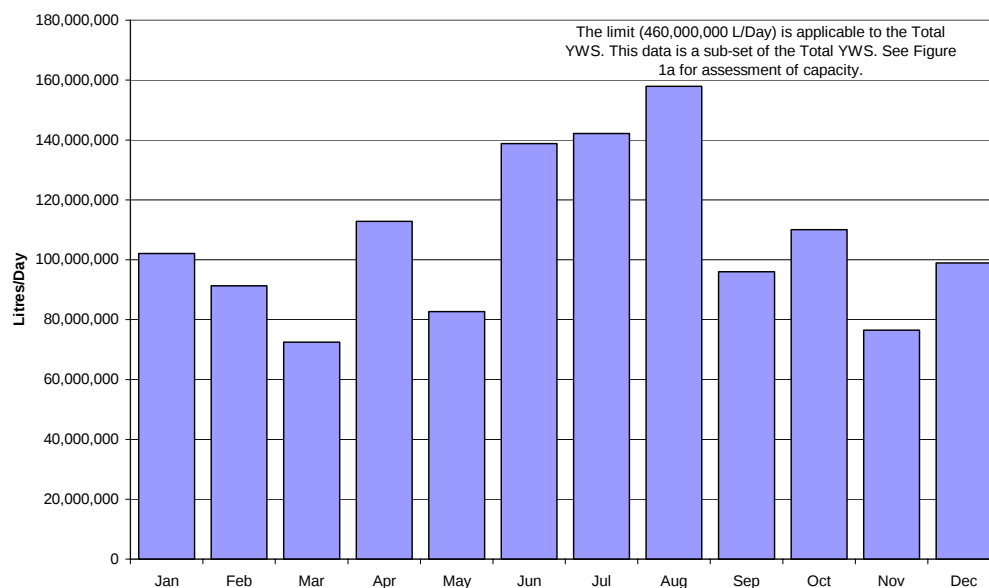
**Figure 1b: Markham Monthly Average Flow
2005**



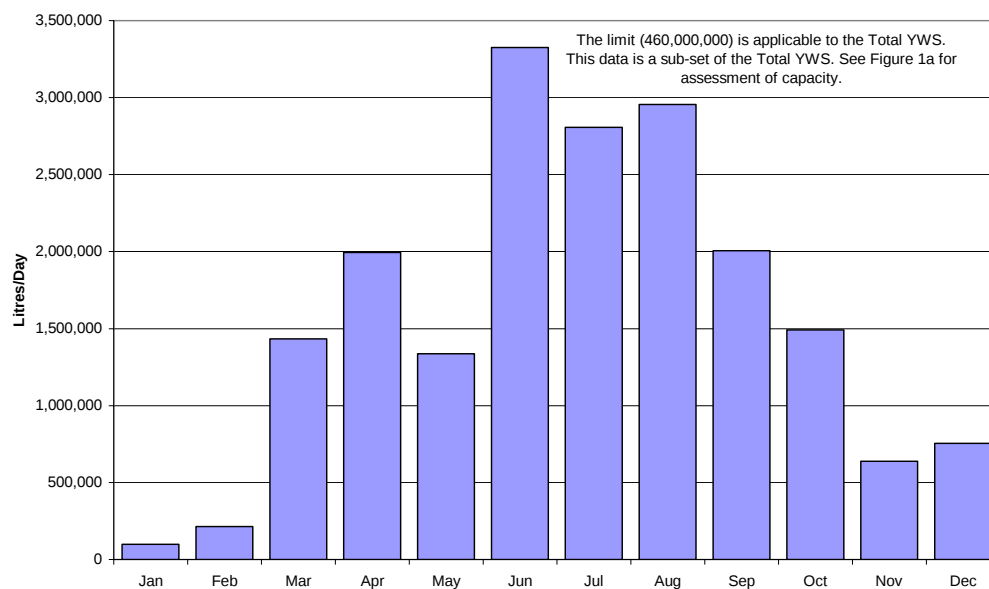
**Figure 1c: Richmond Hill Monthly Average Flow
2005**



**Figure 1d: Vaughan Monthly Average Flow
2005**



**Figure 1e: Aurora Monthly Average Flow
2005**



The withdrawal rates for the YWS from the City of Toronto did not exceed the allowable daily limits in during the reporting period of January 1 – December 31, 2005.

The '*Daily Instantaneous Peak Flow (litres)*' for January 1- December 31, 2005 is unavailable for the York Water System during the reporting period. SCADA data is not available for the YWS system due to communication difficulties Between SCADA and the multi directional flow meters supplying the YWS.

Appendices

Ansnoerveldt Maximum Daily Withdrawal:

Production Well Number	Allowable Daily Withdrawal (Litres)	Actual Maximum Daily Withdrawal (Litres)	Actual Maximum Daily Withdrawal Date
Well 1	100,800	14,500	January 24
		18,600	February 07
		17,500	March 07
		18,000	April 20
		22,000	May 30
		28,000	June 06
		21,500	July 13
		20,000	August 08
		21,500	September 26
		20,500	October 03
		17,000	November 16
		18,500	December 19
Well 2	184,320	64,500	January 12
		51,500	February 02
		68,000	March 18
		69,000	April 11
		67,500	May 09
		123,000	June 01
		63,500	July 06
		49,500	August 22
		49,000	September 26
		42,500	October 03
		38,000	November 16
		41,000	December 19

Aurora Maximum Daily Withdrawals:

Production Well Number	Allowable Daily Withdrawal (Litres)	Actual Maximum Daily Withdrawal (Litres)	Actual Maximum Daily Withdrawal Date
Well 1	3,273,120	2,918,000	January 12
		2,821,000	February 09
		93,667	March 11
		21,667	April 08
		169,000	May 23
		2,303,000	June 03
		2,760,000	July 08
		1,403,000	August 08
		546,000	September 09
		34,000	October 03
		15,000	November 01
		2,202,000	December 14
Well 2	5,891,760	4,795,000	January 05
		4,550,000	February 02
		4,289,667	March 04
		3,726,667	April 01
		4,283,333	May 27
		3,840,000	June 06
		4,100,000	July 22
		3,825,000	August 08
		3,940,000	September 12
		3,896,667	October 28
		4,180,000	November 02
		4,463,333	December 23
Well 3	5,237,136	5,235,000	January 05
		5,070,000	February 02
		3,370,000	March 07
		3,735,000	April 27
		4,145,000	May 02
		4,965,000	June 22
		4,615,000	July 11
		3,350,000	August 08
		2,226,667	September 09
		3,220,000	October 19
		4,730,000	November 28
		4,960,000	December 28

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Well 4	7,855,632	0	-
		0	-
		6,627,000	March 11
		7,260,000	April 27
		6,420,333	May 01
		5,920,000	June 15
		5,505,000	July 18
		5,620,000	August 22
		5,730,000	September 19
		5,823,333	October 21
		5,310,000	November 11
		5,775,000	December 28
Well 5	5,891,760	4,058,500	January 01
		3,932,000	February 18
		4,285,500	March 09
		3,904,667	April 08
		3,815,000	May 25
		4,999,500	June 29
		5,002,667	July 01
		4,865,000	August 24
		5,034,000	September 19
		4,712,000	October 17
		4,402,000	November 02
		4,037,333	December 09
Well 6	3,469,536	2,485,000	January 17
		2,220,667	February 25
		2,457,667	March 11
		2,589,500	April 25
		2,725,500	May 23
		2,306,000	June 27
		2,415,333	July 08
		2,583,333	August 26
		2,431,000	September 14
		2,097,500	October 19
		1,416,000	November 09
		0	-

Ballantrae Maximum Daily Withdrawals:

Production Well Number	Allowable Daily Withdrawal (Litres)	Actual Maximum Daily Withdrawal (Litres)	Actual Maximum Daily Withdrawal Date
Well 1 and 2	2,617,920 from Oct 1 to May 31	972,000	January 21
		907,000	February 16
		923,000	March 28
		1,006,500	April 13
	4,380,480 from June 1 to Sept 30	2,015,500	May 25
		2,775,000	June 06
		2,331,666	July 01
		1,970,000	August 08
		1,469,000	September 12
		1,374,000	October 24
		996,000	November 01
		1,970,000	December 12

Georgina Maximum Daily Withdrawals:

Production Well Number	Allowable Daily Withdrawal (Litres)	Actual Maximum Daily Withdrawal (Litres)	Actual Maximum Daily Withdrawal Date
Water Treatment Plant	50,000,000	2,015,000	January 22
		2,300,000	February 13
		1,872,000	March 08
		2,023,000	April 14
		2,343,000	May 31
		2,707,000	June 07
		3,328,000	July 19
		3,075,000	August 24
		2,592,000	September 22
		2,685,000	October 17
		2,665,000	November 02
		2,285,667	December 16

Keswick Maximum Daily Withdrawals:

Production Well Number	Allowable Daily Withdrawal (Litres)	Actual Maximum Daily Withdrawal (Litres)	Actual Maximum Daily Withdrawal Date
Water Treatment Plant	16,200,000	6,989,000	January 09
		6,985,000	February 20
		7,103,000	March 09
		6,810,000	April 29
		8,220,000	May 30
		11,921,000	June 07
		12,315,000	July 12
		9,555,000	August 08
		8,730,000	September 06
		7,604,500	October 24
		7,027,000	November 06
		6,757,000	December 30

King City Maximum Daily Withdrawals:

Production Well Number	Allowable Daily Withdrawal (Litres)	Actual Maximum Daily Withdrawal (Litres)	Actual Maximum Daily Withdrawal Date
Well 3	1,963,915	1,236,000	January 20
		818,000	February 14
		642,000	March 11
		14,857	April 25
		806,000	May 30
		1,274,000	June 24
		1,292,000	July 11
		999,000	August 08
		816,000	September 05
		742,000	October 01
		830,500	November 30
		35,371	December 01
Well 4	2,618,554	1,290,000	January 24
		838,500	February 23
		1,476,500	March 30
		1,877,500	April 18
		1,349,333	May 01
		1,736,000	June 24
		1,768,500	July 11
		1,386,000	August 08
		1,941,333	September 09
		1,942,000	October 05
		1,108,500	November 30
		2,419,200	December 30

Kleinburg Maximum Daily Withdrawals:

Production Well Number	Allowable Daily Withdrawal (Litres)	Actual Maximum Daily Withdrawal (Litres)	Actual Maximum Daily Withdrawal Date
Well 2	950,400	54,000	January 03
		10,667	February 04
		13,500	March 28
		6,333	April 01
		8,429	May 23
		458,000	June 10
		633,500	July 11
		9,571	August 29
		31,500	September 19
		121,857	October 17
		3,571	November 14
		15,429	December 05
Well 3	3,283,200	1,834,000	January 05
		1,248,500	February 02
		1,235,000	March 04
		1,499,500	April 25
		2,134,000	May 25
		3,191,700 ¹	June 12
		3,112,600 ²	July 01
		2,391,000	August 08
		2,207,500	September 14
		1,779,000	October 03
		2,928,000	November 23
		1,768,000	December 12

1 – Verified manual data with SCADA Data as manual records covered a period greater than 24 hrs. SCADA data recorded an actual maximum daily withdrawal of 3,191,700 litres on June 12, 2005

2 - Verified manual data with SCADA Data as manual records covered a period greater than 24 hrs. SCADA data recorded an actual maximum daily withdrawal of 3,112,600 litres on July 1, 2005.

Mount Albert Maximum Daily Withdrawals:

Production Well Number	Allowable Daily Withdrawal (Litres)	Actual Maximum Daily Withdrawal (Litres)	Actual Maximum Daily Withdrawal Date
Well 1	2,176,000	1,111,500	January 17
		1,119,000	February 02
		970,500	March 23
		912,000	April 06
		1,361,500	May 30
		1,702,000	June 01
		1,367,000	July 01
		1,303,000	August 08
		1,174,500	September 05
		943,500	October 10
		947,333	November 11
		1,201,000	December 07
Well 2	2,176,000	1,452,000	January 01
		1,080,000	February 09
		1,062,500	March 28
		1,264,000	April 11
		1,611,000	May 09
		1,574,500	June 22
		1,759,500	July 20
		1,534,333	August 05
		1,423,000	September 30
		1,423,000	October 01
		1,232,333	November 18
		1,523,500	December 14

Newmarket/East Gwillimbury Maximum Daily Withdrawals:

Production Well Number	Allowable Daily Withdrawal (Litres)	Actual Maximum Daily Withdrawal (Litres)	Actual Maximum Daily Withdrawal Date
Holland Landing Well 1	2,291,184	1,944,667	January 07
		1,666,500	February 23
		1,929,667	March 18
		1,849,500	April 04
		1,392,500	May 25
		1,670,333	June 03
		1,629,500	July 11
		1,323,500	August 31
		1,323,500	September 01
		983,000	October 14
		1,123,000	November 16
		941,333	December 23
Holland Landing Well 2	3,600,432	1,108,000	January 28
		1,095,667	February 04
		0	-
		2,006,000	April 08
		1,844,333	May 27
		2,326,500	June 08
		2,322,000	July 11
		1,764,500	August 17
		1,413,500	September 14
		1,338,333	October 14
		1,419,000	November 16
		2,230,500	December 19
Newmarket Well 1	2,291,184	1,423,500	January 05
		1,437,500	February 21
		1,349,500	March 07
		1,779,333	April 08
		2,054,500	May 30
		1,928,667	June 03
		1,847,500	July 18
		1,557,500	August 17
		1,676,667	September 09
		1,567,500	October 24
		1,472,500	November 01
		1,436,667	December 23

Newmarket Well 2	4,582,512	4,330,500	January 05
		4,126,000	February 25
		4,344,000	March 21
		4,063,000	April 08
		4,149,000	May 20
		4,140,500	June 01
		3,943,500	July 25
		3,850,000	August 29
		3,807,667	September 02
		3,951,000	October 24
		3,784,500	November 01
		4,209,000	December 23
Newmarket Well 13	5,891,760	1,529,000	January 31
		3,483,000	February 28
		4,222,000	March 25
		4,784,000	April 22
		4,375,333	January 20
		5,233,000	June 22
		5,130,500	July 25
		4,976,333	August 19
		5,033,000	September 05
		4,978,000	October 31
		4,978,000	November 01
		5,343,000	December 30
Newmarket Well 14	2,291,184	1,332,000	January 01
		1,232,000	February 01
		1,009,000	March 21
		1,297,500	April 27
		1,239,000	May 30
		1,538,333	June 03
		1,407,500	July 11
		1,494,000	August 08
		29,500	September 12
		34,750	October 24
		1,194,667	November 04
		842,000	December 30

Newmarket Well 15	3,273,120	1,816,500	January 01
		64,000	February 21
		1,583,500	March 30
		1,741,667	April 01
		1,610,500	May 23
		1,631,500	June 22
		1,234,000	July 13
		1,186,667	August 19
		1,347,500	September 28
		1,337,000	October 03
		1,264,500	November 16
		1,494,667	December 23
Newmarket Well 16	5,629,824	4,708,000	January 01
		4,372,000	February 09
		4,520,667	March 04
		4,569,000	April 11
		4,700,667	May 20
		5,312,000	June 22
		4,689,000	July 25
		4,393,000	August 19
		4,428,500	September 05
		4,462,000	October 31
		4,462,000	November 01
		4,143,500	December 05
Queensville Well 1	6,546,384	6,007,500	January 24
		5,913,000	February 16
		5,007,000	March 01
		4,582,500	April 27
		5,269,500	May 09
		5,185,000	June 29
		5,348,000	July 06
		5,289,000	August 31
		5,289,000	September 01
		5,366,000	October 10
		6,065,000	November 28
		5,621,667	December 09

Queensville Well 2	6,546,384	5,546,500	January 01
		4,101,000	February 01
		5,096,000	March 02
		4,566,667	April 01
		5,044,667	May 13
		5,074,500	June 08
		5,115,333	July 15
		4,941,000	August 15
		4,861,000	September 19
		4,473,000	October 24
		4,604,500	November 09
		6,012,500	December 05
Queensville Well 3	6,546,384	4,983,500	January 10
		5,417,000	February 16
		5,116,000	March 16
		6,435,000	April 13
		5,528,000	May 25
		5,971,500	June 29
		6,156,000	July 13
		6,287,000	August 03
		5,710,500	September 14
		6,252,500	October 10
		36,500	November 01
		5,287,500	December 07
Queensville Well 4	6,546,384	5,860,000	January 26
		5,485,000	February 23
		3,936,667	March 18
		4,915,000	April 20
		4,315,000	May 16
		5,785,000	June 20
		5,700,000	July 20
		6,390,000	August 05
		5,530,000	September 07
		3,735,000	October 31
		5,520,000	November 23
		5,180,000	December 12

Nobleton Maximum Daily Withdrawals:

Production Well Number	Allowable Daily Withdrawal (Litres)	Actual Maximum Daily Withdrawal (Litres)	Actual Maximum Daily Withdrawal Date
Well 2	1,963,872	98,000	January 10
		25,333	February 18
		13,429	March 28
		15,000	April 11
		668,500	May 23
		8,333	June 17
		246,000	July 11
		3,143	August 15
		5,000	September 05
		4,571	October 24
		7,667	November 11
		7,429	December 05
Well 3	1,963,872	1,351,667	January 21
		1,138,000	February 02
		882,333	March 04
		1,007,667	April 29
		1,494,500	May 30
		1,808,500	June 06
		1,812,000	July 13
		1,562,000	August 15
		1,414,000	September 05
		1,317,500	October 31
		1,317,500	November 01
		1,174,000	December 26

Schomberg Maximum Daily Withdrawals:

Production Well Number	Allowable Daily Withdrawal (Litres)	Actual Maximum Daily Withdrawal (Litres)	Actual Maximum Daily Withdrawal Date
Well 2	1,636,560	582,000	January 03
		269,000	February 02
		533,000	March 07
		211,000	April 18
		43,429	May 23
		51,200	June 15
		1,177,000	July 25
		986,500	August 15
		1,091,500	September 21
		1,385,000	October 31
		1,385,000	November 01
		982,500	December 05
Well 3	2,290,000	888,000	January 01
		813,000	February 18
		899,000	March 09
		828,000	April 01
		988,500	May 18
		1,474,000	June 06
		995,000	July 11
		210,000	August 22
		16,000	September 05
		3,714	October 24
		14,429	November 07
		15,571	December 05

Stouffville Maximum Daily Withdrawals:

Production Well Number	Allowable Daily Withdrawal (Litres)	Actual Maximum Daily Withdrawal (Litres)	Actual Maximum Daily Withdrawal Date
Well 1	2,946,240	1,606,500	January 19
		1,178,000	February 28
		1,228,000	March 02
		1,229,000	April 20
		1,516,000	May 30
		2,276,333	June 10
		1,864,333	July 01
		1,596,000	August 08
		2,361,333	September 30
		2,361,333	October 01
		1,535,000	November 11
		1,371,667	December 09
Well 2	2,946,240	1,651,000	January 28
		1,657,333	February 18
		1,395,000	March 28
		1,588,500	April 27
		1,262,667	May 27
		1,826,000	June 06
		1,690,667	July 08
		1,566,000	August 03
		1,229,000	September 02
		1,215,500	October 19
		1,292,333	November 11
		1,193,667	December 09
Well 3	2,946,240	1,508,500	January 01
		1,592,500	February 14
		1,475,500	March 28
		1,676,000	April 27
		1,521,500	May 30
		2,255,667	June 10
		1,845,500	July 11
		1,615,000	August 05
		2,226,000	September 30
		2,226,000	October 01
		0	-
		0	-

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Well 5	2,289,600	1,427,500	January 19
		1,257,000	February 23
		1,577,500	March 28
		1,120,667	April 29
		1,372,500	May 30
		1,994,000	June 06
		1,892,333	July 08
		1,653,500	August 08
		1,345,500	September 01
		1,265,333	October 28
		1,711,667	November 11
		1,493,667	December 09
Well 6	3,110,400	1,138,000	January 19
		1,000,000	February 18
		1,211,000	March 28
		917,333	April 29
		1,129,000	May 30
		1,537,000	June 06
		1,389,333	July 08
		1,196,000	August 17
		1,327,000	September 19
		992,000	October 19
		1,297,000	November 11
		1,131,333	December 09