



2015 ANNUAL WATER QUALITY SUMMARY REPORT

The Corporation of the Town of Newmarket

This Report provides a summary of the performance of the Newmarket Water Distribution System for 2015. Please note that this report has been created with the best available information at the time of publication, and that every reasonable effort has been made to ensure the accuracy of this report.



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2015 Annual Water Quality Summary Report

The Corporation of the Town of Newmarket

Executive Summary

This report contains information regarding the status of the operations, maintenance, and monitoring of the Newmarket Water Distribution System (WDS) for the period of 1 January 2015– 31 December 2015.

Town of Newmarket Public Works Services, as part of the Development and Infrastructure Services Commission of the Corporation of the Town of Newmarket (“the Town”, “our”) delivers drinking water to its residents’ through the Newmarket WDS. The Town acts as both the Owner and Operating Authority for the Newmarket WDS (DWS 260003188).

Our WDS consists of approximately 25,900 metered water service connections, 300 kilometers of watermain, 3,000 mainline valves, 2,500 fire hydrants and an approximate population of 79,978 (2011 Census). The Town is considered a Class 1 Large Municipal Residential System under the Safe Drinking Water Act.

The Newmarket WDS is divided into 3 pressure districts/zones (East, Central, and West) that range in pressure from approximately 40 psi – 100 psi. We also maintain 2 Pressure Regulating Valves, which are on the Leslie St 750mm watermain from Aurora into the Copper Hills area.

The Town’s water operators, certified by the Province of Ontario through the Ministry of the Environment and Climate Change (MOECC), maintain and operate our WDS. Some of the typical operational activities performed by staff include, but are not limited to:

- Water quality sampling/monitoring
- System flushing
- Infrastructure repair
- Locates of municipal infrastructure
- Valve exercising/inspections
- Fire hydrant maintenance/inspections
- Customer Service calls re: WDS quality

The Newmarket WDS is required **by law** to comply with the MOECC *Safe Drinking Water Act, 2002* (SDWA) and all regulations contained therein (i.e. O. Reg. 170/03), as well as related Federal, Provincial, and/or Municipal requirements. Our Water Quality Sampling Strategy/Plan annually exceeds the requirements of O. Reg. 170/03.

The provision of safe drinking water is our top priority.

Through our vigorous water quality monitoring/sampling programs, our WDS is monitored to ensure that the water we provide remains safe for our residents and business owners, and that our infrastructure is sound.



Water samples are collected at various locations in town using designated Sampling Stations. This practice assures that samples are collected at points that represent the entire distribution system.

All samples are analyzed in the field for certain parameters (i.e. free & total chlorine, etc.) by our highly trained operators, or submitted to a provincially accredited laboratory for the analysis of organic/inorganic parameters. The York-Durham Regional Environmental Laboratory (located in Pickering, Ontario), an accredited laboratory registered with the Canadian Association for Laboratory Certification Inc. (CALA), is under contract with the Town for water quality analysis of all water samples sent to them from our distribution system.

From 1 January 2015 to 31 December 2015, the Town of Newmarket reported **143** Adverse Water Quality Incidents (AWQIs) to the MOECC and local MOH for the Newmarket WDS. Of these:

- **1** was due to a loss of system pressure (large pocket of air in a portion of the Central Northeast Pressure District)
- **128** were due to adverse (low) combined chlorine residual
- **1** for low free chlorine (during initial conversion process)
- **13** for Total Coliform

In an effort to address the ongoing challenges in the Newmarket WDS in regards to disinfectant residual decay, we continue to work collaboratively with local area municipalities (LAMs), and the Region of York. In addition, we continue to employ the services of industry experts and consultants such as Confluence Engineering, LLC, WSP, and Stantec Consulting to assist with data analysis/system maintenance recommendations, flow monitoring, and modelling water quality trends/scenarios.

The Region of York (“the Region”) is responsible for the supply, treatment, storage, and transmission of potable water to the Town of Newmarket WDS. All supplied water was tested against regulatory standards. Continuous monitoring by the Region via online monitoring systems (SCADA) monitors the quality of water being provided to our municipality at all times. Six Regionally-owned/operated/maintained storage tanks located throughout the distribution system provide additional storage, pressure, and fire protection. The Region publishes an annual report (available at www.york.ca) with respect to water quality of both source and treated waters.

The Newmarket WDS is supplied with both ground source (*underground aquifer*) and surface (*lake-based*) waters. The purpose of blending these two sources is to decrease the demand on the underground aquifer as well as providing additional security by having a second supply source to support the future development of our community.

The supply of ground water to the Newmarket WDS consists of five wells located along the Yonge Street corridor (numbered 13 & 16, 1 & 2, and 15) - as well as supply from an additional four wells located in the community of Queensville. These wells are all owned, operated, and maintained by the Region of York.

The Region supplements the ground water supply with surface water from Lake Ontario via Peel Region. This water is conveyed through four connections with the Town of Aurora located along our Southern boundary (Bathurst Street, Yonge Street, Bayview Avenue, and Leslie Street). Five interface connections owned and operated by the Region, with the Town of East Gwillimbury have also been established to provide water to their drinking water systems (Harry Walker Parkway, Davis Drive, Yonge Street-east side, Yonge Street-west side, and Woodspring Avenue).



Treatment of the water supplied to the Newmarket WDS by the Region is through the process of chloramination (the addition of chlorine *and* ammonia). From February 2015 – June 2015, the Town of Newmarket, in conjunction with the Region, temporarily changed to a free chlorine (chlorine *only*) disinfection method in parts of the WDS. This program was undertaken in an effort to address disinfectant residual decay challenges, and was quite successful.

As the Operating Authority, the Town of Newmarket undergoes an annual inspection of our WDS by a Provincial Drinking Water Inspector/Officer from the MOECC. This annual inspection checks us for compliance with regulatory requirements. An announced inspection occurred 17 June 2015 (for the period of 22 May 2014 – 17 June 2015) with a resulting **final inspection rating of 100%**.

Part Two of the Report of the Walkerton Inquiry, recommended the adoption of quality management for municipal drinking water systems. The recommendation of a quality management standard, specifically designed for drinking water systems, for development and implementation in Ontario led to the creation of the Drinking Water Quality Management Standard (DWQMS).

The adoption of quality management systems is not new to the drinking water community in Ontario; however, the requirement to implement the DWQMS is. It is now **mandated** through the *Safe Drinking Water Act, 2002*.

The MOECC mandates the implementation of an Operational Plan for all Drinking Water Systems in the province of Ontario. This operational plan is a document created by the Town of Newmarket's Public Works Services department to help ensure that safe, reliable drinking water is available to all the citizens, businesses, and visitors of the Town of Newmarket. It serves to provide an understanding of the drinking water system, the responsibilities of the owner and operator (operating authority) of the water system, and a commitment to the provision of safe drinking water, which in turn allows us to plan, implement, check, and continually improve our system. Newmarket's Operational Plan has been audited and accredited by SAI Global (third party auditors) under the requirements of the SDWA, and is available to view upon request from the Town of Newmarket Operations Centre at 1275 Maple Hill Court. Additionally, internal and external audits of this Operational Plan were completed in 2015. The Town has met the Quality Management System Requirements as required by the SDWA.

The Town maintained the drinking water system in a fit state of repair in 2015 and followed best industry practices during the repair, inspection, and maintenance of the system.

The Town has completed this summary report to satisfy the regulatory requirements of the Safe Drinking Water Act, O. Reg. 170/03. For more information, please visit www.newmarket.ca or call The Town of Newmarket at 905-895-5193.

Any questions related to the Newmarket Water System, this report, or any water quality issue may be directed to the Overall Responsible Operator, Jeff Ellis (Supervisor of Water/Wastewater Operations) at our Operations Centre 905-953-5300, ext. 2564, or via email at jellis@newmarket.ca.



Introduction

Purpose

The purpose of this Annual Water Quality Summary report is to provide information to our consumers and stakeholders as well as to satisfy the regulatory requirements of the *Safe Drinking Water Act, 2002* including the *Drinking Water Quality Management System (DWQMS)*, reports to Owner, and regulatory reporting required under *O. Reg. 170/03*. This report is a compilation of information that helps to illustrate the ongoing delivery of safe drinking water to our consumers in the Town of Newmarket.

Scope

This Annual Water Quality Report includes information pertaining to the Town of Newmarket's WDS for the period of 1 January 2015 to 31 December 2015. We are bound by provincial law to report this information to the following:

1. The Drinking Water System Owners (The Corporation of the Town of Newmarket – Mayor and Council)
2. Top Management (Director – Public Works Services)
3. The public

Quality Management Policy | Newmarket Water Distribution Subsystem

The Town of Newmarket Water Distribution System is recognized by the Ministry of Environment & Climate Change (MOECC) as a Large Municipal Residential Drinking Water System.

We at the Town of Newmarket are committed to the consistent delivery of safe drinking water through compliance with legislative and regulatory requirements. We will strive to achieve this goal through the implementation and continuous improvement of the Quality Management System.

The Town of Newmarket also pledges to ensure open communication, both with public, as well as staff concerning all policies, procedures, and documentation pertaining to drinking water quality.

The Quality Management Policy applies to all municipal management and staff, and is posted at the municipal offices, operations centre and on the municipal website.

11 December 2015



Report Requirements of the Safe Drinking Water Act

This report satisfies the requirements of the MOECC's *Safe Drinking Water Act (SDWA), 2002* and *Ontario Regulation (O. Reg.) 170/03*.

These requirements are outlined below.

- *Section 11, Annual Reports which include:*
 - *A brief description of the Drinking Water System*
 - *A summary of the most recent water test results required under O.Reg. 170/03*
 - *A summary of adverse test results and other issues reported to the Ministry including corrective actions taken*
 - *A description of the major expenses incurred to install, repair, or replace required equipment/infrastructure*
 - *The locations where this report is available for inspection*

And;

- *Schedule 22, Summary Report which includes:*
 - *List the requirements of the SDWA, the regulations, the system's approval, Drinking Water Works Permit (DWWP), Municipal Drinking Water Licence (MDWL), and any orders applicable for the system that were not met at any time during the period covered by the report*
 - *For each requirement that was not met, the duration of the failure and the measures that were taken to correct the failure*

This Annual Water Quality Summary report satisfies the requirements for the Newmarket WDS. Copies are available for viewing at:

- Newmarket Operations Centre, 1275 Maple Hill Court
- Newmarket Municipal Offices, Customer Service Counter, 395 Mulock Drive
- Online at www.newmarket.ca

NOTICE:

Please note that every reasonable effort has been made to ensure the accuracy of this report. This report is published with the best available information at the time of publication.



Newmarket Water Distribution System Overview

The provision of safe drinking water is our top priority. We strive to achieve this safe consistent supply of high quality drinking water while meeting, exceeding, and continually improving on legal, operational, and quality management system requirements.

The Newmarket Water Distribution System (WDS) is a **Class I Distribution Subsystem** (Drinking Water System #260003188). From 1 January 2015 – 31 December 2015, eighteen provincially certified water operators operated and maintained our system.

The Distribution System Infrastructure (including watermains, valves, hydrants, water services, and meters) services approximately 79,978 people (*2011 Census – new figures to be released in 2016*) within the Town of Newmarket. All new components meet NSF 61 requirements or equivalents and are installed and maintained in accordance with approved industry standards.

The Newmarket WDS is comprised of/maintains the following infrastructure:

- ❖ Approximately 300 kilometers of distribution system watermain with a diameter <500mm
- ❖ 3,000 mainline valves
- ❖ 2,500 municipally owned fire hydrants
- ❖ 25,900 metered water services
- ❖ 2 Pressure Regulating Valves

Normal operating pressure throughout the distribution system ranges between approximately 40-100 psi.

The Newmarket WDS is supplied with both ground source (*underground aquifer*) and surface (*lake-based*) waters. The purpose of blending these two sources is to decrease the demand on the underground aquifer as well as providing additional security by having a second supply source to support the future development of our community.

The supply of ground water to the Newmarket WDS consists of five wells located along the Yonge Street corridor (numbered 13 & 16, 1 & 2, and 15) - as well as supply from an additional four wells located in the community of Queensville. These wells are all owned, operated, and maintained by the Region of York.

The Region supplements the ground water supply with surface water from Lake Ontario via Peel Region. This water is conveyed through four connections with the Town of Aurora located along our Southern boundary (Bathurst Street, Yonge Street, Bayview Avenue, and Leslie Street). Five interface connections owned and operated by the Region, with the Town of East Gwillimbury have also been established to provide water to their drinking water systems (Harry Walker Parkway, Davis Drive, Yonge Street-east side, Yonge Street-west side, and Woodspring Avenue).

From 1 January 2015 – 31 December 2015, 8,253,031m³ of water was purchased from the Region for the Newmarket WDS. Of this total amount purchased, the Town of Newmarket sold 6,940,811m³ to its residents and businesses. It was necessary to flush (through the use of fire hydrant flows and auto-flushers) approximately 361,969 m³ in order to maintain water quality throughout the distribution system.



In 2015, approximately 1,400 regulatory microbiological and chemical quality samples were collected at locations throughout our WDS. These samples were all collected by provincially certified operators and submitted to accredited, licenced laboratories for analysis. In all cases, the drinking water supplied to the public was confirmed safe.

From January 1, 2015 to December 31, 2015, the Town recorded a number of concerns from customers regarding colour, taste, and/or odour in relation to their drinking water. Overall, customers are satisfied with level of customer service they receive from our department. In our last public survey, customer service in our department ranked at 79%. This was the highest of all departments

Most concerns that we receive pertain to:

- Free Chlorine (taste/odour/skin irritation)
- General taste/odour complaints under chloramine disinfection (musty, metallic, sulphurous/"rotten egg")
- Amount of water being flushed

The Newmarket WDS is classified as a Large Municipal Residential system and operates under the provincially regulated requirements of the Safe Drinking Water Act, which may be found at <http://www.e-laws.gov.on.ca>. The DWS operates under:

- ❖ Municipal Drinking Water Licence (MDWL) 124-101 (Issue 2)
- ❖ Drinking Water Works Permit (DWWP) 124-201 (Issue 1)

The MDWL and the DWWP describe system-specific requirements that are supplementary to provincial regulations and act as licences for water distribution systems. These documents outline specific conditions and requirements regarding operation, maintenance and upgrades that are required by the system and considered regulatory in nature. These documents are available by request for viewing at the Newmarket Operations Centre, 1275 Maple Hill Court.



Major Expenses Incurred to Install, Repair, or Replace Required Equipment/Infrastructure

From 1 January 2015 – 31 December 2015, the Town incurred significant expenses in regards to enhanced maintenance, replacement programs, and repair of infrastructure related to the WDS.

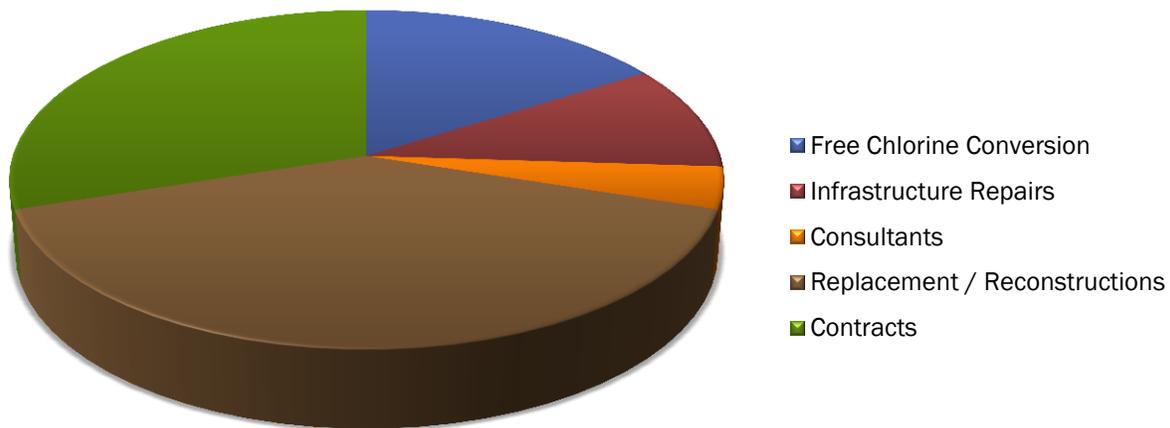


Figure 2: Major Expenses Incurred for 2015

Free Chlorine Conversion Program

Significant challenges in maintaining disinfectant residuals in areas of the Newmarket WDS led to multiple adverse water quality incidents in 2015. Free chlorine conversions have also occurred in 2012 and 2013 in the Newmarket WDS. After increased maintenance programs, several third-party studies/analyses, careful deliberation amongst industry professionals, as well as local and regional governments, the Town initiated a formal request to the Region to once again convert areas experiencing the most challenges from a chloraminated (chlorine + ammonia) disinfection system to a free chlorine (chlorine only) system for enhanced maintenance. Ontario MOECC Drinking Water Inspectors and the local Medical Officer of Health were involved throughout the process to ensure they understood and supported the program.

Free chlorine disinfection is one of the MOECC's approved methods for drinking water disinfection in Ontario and is one of the most widely-used processes across North America. Free chlorine is a stronger disinfectant than chloramine, and was chosen for enhanced maintenance of the WDS to maintain Newmarket's high standard of water quality.

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Infrastructure Repairs

In 2015, the number of emergency repairs of water infrastructure was significantly down from years before. There were fifteen repairs from 1 January 2015 – 31 December 2015.

EXCAVATION DATE	ADDRESS	TYPE OF REPAIR	PIPE MATERIAL	PIPE SIZE (mm)	BREAK TYPE	APPARENT CAUSE
10 Jan 2015	14 Longford Dr.	Watermain	Cast Iron	150	Circumference	Beam Failure
13 Jan 2015	954 Srigley St.	Watermain	Cast Iron	200	Joint Failure	Corrosion
13 Jan 2015	Opp. 260/262 Gwillimbury Dr.	Watermain	Cast Iron	150	Circumference	Beam Failure
15 Jan 2015	821 Grace St.	Watermain	Cast Iron	150	Circumference	Beam Failure
19 Jan 2015	742 Queen St.	Watermain	Cast Iron	150	Circumference	Beam Failure
13 Feb 2015	Opp. 513 Cody Cres	Watermain	Ductile Iron	150	Blow Hole	Corrosion
17 Feb 2015	109 Willow Ln.	Watermain	Cast Iron	150	Circumference	Beam Failure
19 Mar 2015	146 Longford Dr.	Watermain	Cast Iron	150	Circumference	Age/Weather
20 Mar 2015	406 Heddle Cres	Water Service	Brass	25	Gasket Failure	Unknown
10 Apr 2015	112 Main St. N.	Watermain	Cast Iron	150	Circumference	Beam Failure
17 Jun 2015	159 Patterson St.	Watermain	Ductile Iron	250	Blow Hole	Corrosion
28 Jun 2015	George St. (@ rear of property 17725 Yonge St.)	Water Service	Ductile Iron	150	Blow Hole	Corrosion
24 Jul 2015	53 Alexander Dr.	Watermain	Ductile Iron	200	Blow Hole	Corrosion
25 Sept 2015	715 Mountview Pl.	Watermain	Cast Iron	150	Circumference	Beam Failure



Consultants

In an effort to address the ongoing challenges in the Newmarket WDS in regards to disinfectant residual decay, we continue to work collaboratively with local area municipalities (LAMs), and the Region of York. In addition, we continue to employ the services of industry experts and consultants such as Confluence Engineering, LLC, WSP, and Stantec Consulting to assist with data analysis/system maintenance recommendations, flow monitoring, and modelling water quality trends/scenarios. We have some of the industry's leading experts, cutting edge technologies, and operations staff working together to come up with advanced operational strategies to assist us in our challenges.

Replacement/Reconstruction

Replacement and reconstructions are an integral part of annual infrastructure maintenance and an effective asset management program. An infrastructure review is to be conducted annually by the Water/Wastewater Supervisor, Manager of Water/Wastewater Operations, and the Director of Public Works Services as part of the Management Review.

Methods of determining infrastructure condition include:

- previous infrastructure review reports
- staff input
- MOE compliance inspection reports
- water quality
- maintenance records
- break frequency
- infrastructure age
- customer complaints

The findings of this review are to be communicated to the Director of Engineering Services who will include any infrastructure deficiencies in the 10 year projections plan. Replacement of aging or deteriorating infrastructure is coordinated with road reconstruction projects. Priority is given to replacement or rehabilitation of any infrastructure that may jeopardize water quality.

The infrastructure review shall be included in an annual report to Top Management and the Owner.

The infrastructure review report shall be revisited and revised as necessary by management during the preparation of the proposed annual budget.

In 2015, some of the most significant replacements/reconstructions included: Woodland Court, a section of Srigley Street, and the ongoing VIVA Next redevelopment of the Davis Drive corridor.



Contracted Services

In order to meet our levels of service, to save costs, and to ensure minimum maintenance standards are met, it is periodically necessary to hire qualified third party contractors. In 2015, some of the operations, which were contracted out (either wholly or partially), included, but were not limited to:

- hydrant inspections
- hydrant painting
- watermain flushing and swabbing

By bringing in this support, our department is able to more effectively meet the demands of our day-to-day operations and service levels.



Water Sampling Program

Regulatory Lead Sampling Program

In 2013, lead sampling programs were conducted in compliance with Schedule 15.1 of O. Reg. 170/03 of the Safe Drinking Water Act. Sixteen (16) samples were taken and submitted to the York-Durham Regional Environmental Laboratory for analysis. Sample results ranged from between 0.0001mg/L-0.0005mg/L for distribution system samples. Due to sufficient evidence indicating that lead is not leaching from infrastructure in the Newmarket WDS, combined with a significant decline in volunteers for residential samples, the Corporation of the Town of Newmarket, on April 20, 2012, submitted a request for Regulatory Relief from Lead Sampling Requirements.

“Amendments to Ontario Regulation 170/03 (Drinking Water Systems) to reduce the potential for elevated levels of lead in drinking water at the tap came into effect on July 26, 2007. These amendments include mandatory community-wide testing for lead, notification of results from the community testing program, and the development and implementation of corrosion control measures for lead reduction... Under Part V (municipal systems) and Part VI (regulated non-municipal systems) of the Safe Drinking Water Act, 2002, the Director, through conditions of an approval, may provide relief for a drinking water system from a regulatory requirement related to the treatment of water, the sampling, testing or monitoring of water quality, or the reporting of the results. As outlined in the December 17, 2007 letter to municipal and non-municipal residential drinking water system owners, the ministry will consider granting regulatory relief to owners who, despite best efforts, are not able to secure the required number of sampling locations.”

*Section 38 (Municipal Drinking Water Systems),
Guide for Requesting Regulatory Relief from Lead Sampling Requirements in
Schedule 15.1 of Regulation 170/03, Safe Drinking Water Act, 2002*

The application for relief was approved by the Ontario Ministry of the Environment, with the below table updated to illustrate the Newmarket WDS’s new regulatory requirements (effective until October 15, 2016).

Table 1: Number of Sampling Points Required for Relief from Regulatory Requirements

Drinking Water System Or Drinking Water Subsystem name	DWS Number	Number of Sampling Points in Plumbing that Serves Private Residences	Number of Sampling Points in Plumbing that Does Not Serve Private Residences	Number of Sampling Points in Distribution System
Newmarket Water Distribution System	260003188	0	0	8



2015 Water Sampling Summary

Table 2: Microbiological Parameters

Parameter	Regulated Limit	Total no. of Samples Tested	Total no. of Detectable Results	Samples Exceeding Limit	Reported Exceedances	Range of Results
Heterotrophic Plate Count (HPC)	*no current standards	658	159	499	0	<1-3,200 CFU/mL
Total Coliforms (MPN/PA)	0 MAC	1342	13	13	13	A – P MPN/100mL
Escherichia E. Coli/E. (MPN/PA)	0 MAC	1342	0	0	0	A MPN/mL

Table 3: Organic/Inorganic Parameters

Parameter	Regulated Limit	Total no. of Samples Tested	Total no. of Detectable Results	Samples Exceeding Limit	Reported Exceedances	Range of Results
Alkalinity (total as CaCO ₃)	Operational Guideline: 30-500mg/L	16	16	0	0	90.6-210mg/L
Ammonia (free, as N) *field tested	*no current standards	256	239	N/A	N/A	0.00-0.55 mg/L
Ammonia (total, as N)	*no current standards	24	21	0	0	<0.05-0.72mg/L
Bromide		24	0	0	0	<0.02- <0.02mg/L
Bromodichloromethane	*no current standards	19	19	0	0	0.0026- 0.0102mg/L
Bromoform	(one of the 4 THMs that make up Total THMs)	19	14	0	0	<0.0002- 0.0010mg/L
Calcium	*no current standards	24	24	0	0	37.6-49.9mg/L
Chloride	Aesthetic Object (AO) 250 mg/L	24	24	0	0	9.60-27.5mg/L
Chloroform	(one of the 4 THMs that make up Total THMs)	19	19	0	0	0.0054- 0.0221mg/L
Dibromochloromethane	(one of the 4 THMs that make up Total THMs)	19	19	0	0	0.0054- 0.0221mg/L
Fluoride	1.5 mg/L	24	24	0	0	0.16-0.432mg/L

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Parameter	Regulated Limit	Total no. of Samples Tested	Total no. of Detectable Results	Samples Exceeding Limit	Reported Exceedances	Range of Results
Hardness (total, as CaCO ₃)	Operational Guideline 80-100mg/L	24	24	24	0	141-199mg/L
Lead (total)	0.01 mg/L	16	9	0	0	0.0001-0.0010mg/L
Magnesium (total)	*no current standards	24	24	0	0	11.0-19.6mg/L
Nitrate (as N)	10 mg/L (as Nitrogen)	24	21	0	0	<0.002-0.351mg/L
Nitrate + Nitrite (as N)	10 mg/L (as Nitrogen)	24	22	0	0	<0.008-0.364mg/L
o-Phosphate (as P)	*no current standards	24	6	0	0	<0.004mg/L-0.024mg/L
pH	Operational Guideline 6.5 – 8.5	487	487	3	0	6.96-8.59
Potassium (total)	*no current standards	24	24	0	0	0.9-1.6mg/L
Sodium (total)**	Aesthetic Objective (AO) 200 mg/L Indicator of adverse quality 20 mg/L	24	24	1	0	13.9-21.7mg/L
Sulphate	Aesthetic Objective (AO) 500 mg/L	24	22	0	0	<0.02-23.4mg/L
Total Trihalomethanes (TTHMs)	0.100 mg/L	19	19	0	0	0.0102-0.0306mg/L

Table 4: Disinfectant Residual Monitoring

Parameter	Minimum Regulated Limit	Total no. of Samples	Range	Samples Exceeding Limit	Reported Exceedances (AWQIs)
Chlorine (Combined Chlorine/Free Chlorine) - routine sampling/daily residuals/ extra sampling	0.25 mg/L (combined) 0.05 mg/L (free)	7559	0.18-2.39mg/L	1595	128



Water Quality Challenges

Disinfectant (chloramine) residual maintenance challenges in sections of the Newmarket WDS led to multiple adverse water quality incidents in 2015. After increased maintenance programs, several third-party studies/analyses, careful deliberation amongst industry professionals, as well as local and regional governments, the Town initiated a formal request to the Region to convert areas of challenge from a chloraminated (chlorine + ammonia) disinfection system to a free chlorine (chlorine only) system for enhanced maintenance. Free chlorine disinfection is one of the MOECC's approved methods for drinking water disinfection in Ontario and is one of the most widely-used processes across North America. Free chlorine is a stronger disinfectant than chloramine, and was chosen for enhanced maintenance of the WDS to maintain Newmarket's high standard of water quality. Ontario MOECC Drinking Water Inspectors and the local MOH remained involved throughout the process to ensure they understood and supported this very successful program.

In a continuing effort to address the ongoing challenges in the Newmarket WDS in regards to disinfectant residual decay and ensure the provision of safe drinking water to our residents, the Town also:

- Retained the services of several industry experts/professional organizations to assist with WDS modelling, analysis of water quality trends/scenarios, flow monitoring, and system optimization strategies.
- Contracted Corix Water Services to assist with watermain flushing, swabbing, and uni-directional flushing for water quality
- Continues to work closely with the Local Medical Officer of Health, the Ministry of the Environment and Climate Change, the Region of York, and Local Area Municipalities (LAMs) in trying to come up with both short and long-term strategies to address our water quality challenges in the most efficient manner possible for all parties involved.



2015 Adverse Water Quality Incidents

In 2015, the Town of Newmarket reported **143** Adverse Water Quality Incidents (or “AWQIs”) – compared to 148 AWQIs reported in 2014. To summarize:

- **1 AWQI reported for loss of WDS pressure** (*due to large pocket of air in a portion of the Central Northeast Pressure District, created by 3rd party watermain construction on Leslie St*)
- **128 AWQIs reported for adverse (below minimum regulated level) combined chlorine residuals** (*compared to 143 in 2014*)
- **1 AWQI reported for low free chlorine residual** (*during conversion to free transition*)
- **13 AWQIs reported for the presence of Total Coliform in water samples** (*compared to 5 positive total coliform in 2014*)

All AWQIs were resolved using approved corrective actions, that is, flushing the pipes at the location of the original adverse and resampling. In all cases, AWQIs were resolved.

An important thing to note are the number of AWQIs before, during and after the free chlorine conversion in Newmarket. Before the conversion to free chlorine, there were five AWQIs. During the free chlorine conversion, (February 8 to May 26), there were seven AWQIs and after the free chlorine conversion was completed, we had a total of 130 AWQIs. Table 5 below lists all of the 2015 AWQIs in detail.

Table 5: 2015 Adverse Water Quality Incidents (AWQIs):

DATE	AWQI NO.	PARAMETER	RESULT	LOCATION	DATE OF RESOLUTION	RESOLUTION NOTICE PROVIDED	RESULT AFTER CORRECTIVE ACTIONS	NO. OF ADDITIONAL ADVERSE LOCATIONS COVERED UNDER THIS AWQI
02-Jan-15	122124	Combined Chlorine (low)	0.19mg/L	SS-10 Lindsay Ave	02-Jan-15	05-Jan-15	0.26mg/L	0
08-Jan-15	122213	Combined Chlorine (low)	0.10mg/L	SS-10 Lindsay Ave	08-Jan-15	09-Jan-15	0.32mg/L	0
09-Jan-15	122223	Combined Chlorine (low)	0.23mg/L	SS-10 Lindsay Ave	09-Jan-15	12-Jan-15	0.32mg/L	0
15-Jan-15	122287	Combined Chlorine (low)	0.20mg/L	SS-28 Main St N (Max Stiles Park)	15-Jan-15	16-Jan-15	0.35mg/L	0
03-Feb-15	122441	Combined Chlorine (low)	0.19mg/L	SS-20 (opp. 124 Skelton St)	03-Feb-15	04-Feb-15	0.26mg/L	0
09-Feb-15	122507	Total Coliform	P	Hyd Fronting 56 Charles St	11-Feb-15	13-Feb-15	A	0

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10-Feb-15	122480	Combined Chlorine (low)	0.19mg/L	1st hyd N of London Rd on Main St N	10-Feb-15	10-Feb-15	0.22mg/L	0
20-Mar-15	122889	Air Pocket in DWS	loss of pressure	N/E section of WDS (Leslie Valley area)	20-Mar-15	20-Mar-15	air removed, pressure restored	0
10-Apr-15	123166	Total Coliform	P	244 Main St N	14-Apr-15	16-Apr-15	A	0
13-Apr-15	123231	Total Coliform	P	SS-24 18100 Yonge St	15-Apr-15	17-Apr-15	A	0
28-Apr-15	123413	Free Chlorine (low)	0.03mg/L	Hyd fronting 323 Crossland Gate	28-Apr-15	29-Apr-15	1.24mg/L	0
29-Apr-15	123424	Combined Chlorine (low)	0.23mg/L	Hyd fronting 18100 Yonge St	29-Apr-15	30-Apr-15	0.48mg/L	0
04-May-15	123481	Total Coliform	P	SS-24 18100 Yonge St	06-May-15	13-May-15	A	0
01-Jun-15	123888	Total Coliform	P	SS-24 18100 Yonge St	03-Jun-15	08-Jun-15	A	0
15-Jun-15	124233	Total Coliform	P	Hyd Fronting 56 Charles St	17-Jun-15	25-Jun-15	A	0
03-Jul-15	124688	Total Coliform	P	New hyd 716 Davis Dr	08-Jul-15	09-Jul-15	A	0
06-Jul-15	124795	Total Coliform	P	56 Charles St (Youth Centre)	15-Jul-15	15-Jul-15	A	0
06-Jul-15	124797	Total Coliform	P	SS-03 837 Legge Crt	15-Jul-15	15-Jul-15	A	0
06-Jul-15	124798	Total Coliform	P	SS-24 18100 Yonge St	15-Jul-15	15-Jul-15	A	0
13-Jul-15	124986	Total Coliform	P	SS-24 18100 Yonge St	17-Jul-15	20-Jul-15	A	0

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17-Jul-15	125041	Combined Chlorine (low)	0.14mg/L	Hyd fronting 620 Haines Rd	17-Jul-15	20-Jul-15	0.39mg/L	0
21-Jul-15	125131	Combined Chlorine (low)	0.11mg/L	Hyd N of London Rd on Main St	21-Jul-15	21-Jul-15	0.40mg/L	0
23-Jul-15	125206	Combined Chlorine (low)	0.06mg/L	SS-28 Main St N (Max Stiles Park)	23-Jul-15	24-Jul-15	0.41mg/L	0
28-Jul-15	125293	Combined Chlorine (low)	0.03mg/L	Hyd @ 483 Main St N	28-Jul-15	30-Jul-15	0.77mg/L	2
30-Jul-15	125342	Combined Chlorine (low)	0.21mg/L	Hyd fronting 20 Hillview Dr	30-Jul-15	31-Jul-15	1.28mg/L	2
31-Jul-15	125380	Combined Chlorine (low)	0.21mg/L	Hyd fronting 380 Traviss Dr	31-Jul-15	04-Aug-15	0.28mg/L	0
04-Aug-15	125542	Total Coliform	P	Youth Centre (56 Charles St)	11-Aug-15	12-Aug-15	A	0
06-Aug-15	125517	Combined Chlorine (low)	0.07mg/L	SS-28 Main St N (Max Stiles Park)	06-Aug-15	07-Aug-15	0.35mg/L	1
07-Aug-15	125545	Combined Chlorine (low)	0.01mg/L	Hyd fronting 620 Haines Rd	07-Aug-15	10-Aug-15	0.26mg/L	0
10-Aug-15	125589	Combined Chlorine (low)	0.15mg/L	SS-28 Main St N (Max Stiles Park)	10-Aug-15	11-Aug-15	0.32mg/L	0
11-Aug-15	125622	Combined Chlorine (low)	0.04mg/L	Hyd fronting 655 Haines Rd	11-Aug-15	12-Aug-15	0.36mg/L	0
12-Aug-15	125641	Combined Chlorine (low)	0.06mg/L	Hyd fronting 655 Haines Rd	12-Aug-15	13-Aug-15	0.25mg/L	0
13-Aug-15	125666	Combined Chlorine (low)	0.07mg/L	Hyd fronting 327 Oakwood Crt	13-Aug-15	14-Aug-15	0.30mg/L	1
14-Aug-15	125702	Combined Chlorine (low)	0.17mg/L	Hyd fronting 327 Oakwood Crt	14-Aug-15	14-Aug-15	0.36mg/L	0

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17-Aug-15	125735	Combined Chlorine (low)	0.22mg/L	SS-03 837 Legge Crt	17-Aug-15	18-Aug-15	0.26mg/L	3
18-Aug-15	125757	Combined Chlorine (low)	0.24mg/L	Hyd fronting 837 Legge Crt	18-Aug-15	18-Aug-15	0.48mg/L	0
19-Aug-15	125787	Combined Chlorine (low)	0.00mg/L	Hyd fronting 366 Glover Lane	19-Aug-15	20-Aug-15	0.32mg/L	1
20-Aug-15	125829	Combined Chlorine (low)	0.15mg/L	Hyd fronting 625 Davis Dr	20-Aug-15	21-Aug-15	0.37mg/L	2
21-Aug-15	125870	Combined Chlorine (low)	0.03mg/L	620 Haines Rd	21-Aug-15	25-Aug-15	0.25mg/L	2
22-Aug-15	125889	Combined Chlorine (low)	0.10mg/L	Hydrant fronting 380 Traviss Dr	22-Aug-15	22-Aug-15	0.26mg/L	0
23-Aug-15	125895	Combined Chlorine (low)	0.17mg/L	Hydrant fronting 380 Traviss Dr	23-Aug-15	25-Aug-15	0.36mg/L	3
25-Aug-15	125927	Combined Chlorine (low)	0.08mg/L	781 Hill Gate	25-Aug-15	25-Aug-15	0.68mg/L	0
26-Aug-15	125937	Combined Chlorine (low)	0.00mg/L	Hyd fronting 366 Glover Lane	26-Aug-15	26-Aug-15	0.36mg/L	1
27-Aug-15	125965	Combined Chlorine (low)	0.17mg/L	Hyd fronting 366 Glover Lane	27-Aug-15	28-Aug-15	0.63mg/L	2
28-Aug-15	125986	Combined Chlorine (low)	0.20mg/L	SS-11 Cedarwood Ave	28-Aug-15	28-Aug-15	0.30mg/L	3
31-Aug-15	126025	Combined Chlorine (low)	0.16mg/L	Hyd adj 837 Legge Crt	31-Aug-15	01-Sep-15	0.26mg/L	1
01-Sep-15	126052	Combined Chlorine (low)	0.06mg/L	Hyd fronting 327 Oakwood Crt	01-Sep-15	02-Sep-15	0.39mg/L	0
02-Sep-15	126062	Combined Chlorine (low)	0.19mg/L	Hyd fronting 655 Haines Rd	02-Sep-15	03-Sep-15	0.41mg/L	4

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DATE	AWQI NO.	PARAMETER	RESULT	LOCATION	DATE OF RESOLUTION	RESOLUTION NOTICE PROVIDED	RESULT AFTER CORRECTIVE ACTIONS	NO. OF ADDITIONAL ADVERSE LOCATIONS COVERED UNDER THIS AWQI
03-Sep-15	126084	Combined Chlorine (low)	0.07mg/L	Hyd fronting 327 Oakwood Crt	03-Sep-15	04-Sep-15	0.25mg/L	2
04-Sep-15	126108	Combined Chlorine (low)	0.13mg/L	Hyd fronting 620 Haines Rd	04-Sep-15	04-Sep-15	0.26mg/L	3
05-Sep-15	126126	Combined Chlorine (low)	0.10mg/L	Hyd fronting 327 Oakwood Crt	05-Sep-15	05-Sep-15	0.60mg/L	0
08-Sep-15	126145	Combined Chlorine (low)	0.08mg/L	Hyd fronting 745 Greenfield Cres	08-Sep-15	09-Sep-15	0.33mg/L	5
09-Sep-15	126180	Combined Chlorine (low)	0.09mg/L	Hyd fronting 870 Three Seasons Drive	09-Sep-15	10-Sep-15	0.46mg/L	3
10-Sep-15	126207	Combined Chlorine (low)	0.09mg/L	Hyd fronting 837 Columbia Crt	10-Sep-15	11-Sep-15	0.42mg/L	4
11-Sep-15	126245	Combined Chlorine (low)	0.08mg/L	Hyd fronting 837 Columbia Crt	11-Sep-15	11-Sep-15	0.63mg/L	2
12-Sep-15	126284	Combined Chlorine (low)	0.03mg/L	Hyd fronting 327 Oakwood Crt	12-Sep-15	12-Sep-15	0.75mg/L	0
14-Sep-15	126319	Combined Chlorine (low)	0.11mg/L	Hyd fronting 512 London Rd	14-Sep-15	16-Sep-15	0.38mg/L	2
15-Sep-15	126336	Combined Chlorine (low)	0.01mg/L	Hyd fronting 380 Traviss Dr	15-Sep-15	15-Sep-15	0.43mg/L	4
16-Sep-15	126356	Combined Chlorine (low)	0.09mg/L	Hyd fronting 655 Haines Rd	16-Sep-15	17-Sep-15	0.33mg/L	2
17-Sep-15	126366	Combined Chlorine (low)	0.05mg/L	Hyd fronting 655 Haines Rd	17-Sep-15	18-Sep-15	0.38mg/L	4
18-Sep-15	126399	Combined Chlorine (low)	0.04mg/L	Hyd fronting 837 Columbia Crt	18-Sep-15	18-Sep-15	0.25mg/L	2
01-Oct-15	126646	Combined Chlorine (low)	0.08mg/L	Hyd S Mary St	01-Oct-15	02-Oct-15	0.29mg/L	1

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02-Oct-15	126686	Combined Chlorine (low)	0.08mg/L	Hydrant fronting 620 Haines Rd	02-Oct-15	02-Oct-15	0.27mg/L	0
03-Oct-15	126715	Combined Chlorine (low)	0.03mg/L	Hyd fronting 428 Traviss Dr	03-Oct-15	03-Oct-15	0.51mg/L	1
04-Oct-15	126729	Combined Chlorine (low)	0.04mg/L	Hyd fronting 756 Cedarwood Ave	04-Oct-15	05-Oct-15	0.32mg/L	0
05-Oct-15	126736	Combined Chlorine (low)	0.14mg/L	SS-04 Adj 531 Davis Drive	05-Oct-15	06-Oct-15	0.40mg/L	5
06-Oct-15	126745	Combined Chlorine (low)	0.06mg/L	Hyd fronting 388 Kelly Cres	06-Oct-15	07-Oct-15	0.53mg/L	3
07-Oct-15	126768	Combined Chlorine (low)	0.14mg/L	Hyd @ SE corner Mary St	07-Oct-15	08-Oct-15	0.28mg/L	1
08-Oct-15	126785	Combined Chlorine (low)	0.10mg/L	Hyd @ SE corner Mary St	08-Oct-15	09-Oct-15	0.30mg/L	2
09-Oct-15	126811	Combined Chlorine (low)	0.17mg/L	Hyd @ SE corner Mary St	09-Oct-15	09-Oct-15	0.35mg/L	2
12-Oct-15	126842	Combined Chlorine (low)	0.04mg/L	Hyd @ 428 Traviss Dr	12-Oct-15	12-Oct-15	0.31mg/L	1
13-Oct-15	126845	Combined Chlorine (low)	0.09mg/L	Hyd fronting 388 Kelly Cres	13-Oct-15	14-Oct-15	0.86mg/L	2
14-Oct-15	126877	Combined Chlorine (low)	0.00mg/L	Hyd fronting 388 Kelly Cres	14-Oct-15	15-Oct-15	0.48mg/L	4
15-Oct-15	126896	Combined Chlorine (low)	0.00mg/L	Hyd fronting 388 Kelly Cres	15-Oct-15	16-Oct-15	0.70mg/L	2
16-Oct-15	126915	Combined Chlorine (low)	0.06mg/L	Hyd fronting 388 Kelly Cres	16-Oct-15	16-Oct-15	0.98mg/L	3
18-Oct-15	126938	Combined Chlorine (low)	0.04mg/L	Hyd fronting 428 Traviss Dr	18-Oct-15	18-Oct-15	0.31mg/L	1

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19-Oct-15	126946	Combined Chlorine (low)	0.07mg/L	Hyd fronting 428 Traviss Dr	19-Oct-15	20-Oct-15	0.73mg/L	1
20-Oct-15	126955	Combined Chlorine (low)	0.13mg/L	SS-11 Cedarwood Ave	20-Oct-15	21-Oct-15	0.16mg/L	0
21-Oct-15	126967	Combined Chlorine (low)	0.19mg/L	SS-11 Cedarwood Ave	21-Oct-15	23-Oct-15	0.23mg/L	2
21-Oct-15	126970	Total Coliform	P	SS-04 Adj 531 Davis Drive	27-Oct-15	29-Oct-15	A	0
22-Oct-15	126987	Combined Chlorine (low)	0.04mg/L	SS-11 Cedarwood Ave	22-Oct-15	23-Oct-15	0.27mg/L	0
23-Oct-15	127005	Combined Chlorine (low)	0.04mg/L	Hyd fronting 654 Haines Rd	23-Oct-15	27-Oct-15	0.26mg/L	1
25-Oct-15	127036	Combined Chlorine (low)	0.09mg/L	SS-11 Cedarwood Ave	25-Oct-15	26-Oct-15	0.32mg/L	1
26-Oct-15	127048	Combined Chlorine (low)	0.10mg/L	SS-03 837 Legge Crt	26-Oct-15	27-Oct-15	1.28mg/L	2
27-Oct-15	127055	Combined Chlorine (low)	0.04mg/L	SS-04 Adj 531 Davis Drive	27-Oct-15	29-Oct-15	0.25mg/L	1
28-Oct-15	127084	Combined Chlorine (low)	0.03mg/L	Hyd fronting 655 Haines Rd	28-Oct-15	29-Oct-15	0.37mg/L	1
29-Oct-15	127137	Combined Chlorine (low)	0.17mg/L	Hyd @ the SE corner of Pearson & Prospect	29-Oct-15	30-Oct-15	0.37mg/L	2
30-Oct-15	127162	Combined Chlorine (low)	0.20mg/L	Hyd fronting 113 Willow Lane	30-Oct-15	30-Oct-15	0.58mg/L	5
31-Oct-15	127176	Combined Chlorine (low)	0.14mg/L	SS-04 Adj 531 Davis Drive	31-Oct-15	02-Nov-15	0.53mg/L	2
01-Nov-15	127185	Combined Chlorine (low)	0.13mg/L	Hyd opp 752 Cedarwood Ave	01-Nov-15	02-Nov-15	0.27mg/L	0

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02-Nov-15	127192	Combined Chlorine (low)	0.05mg/L	SS-11 Cedarwood Ave	02-Nov-15	03-Nov-15	0.28mg/L	3
03-Nov-15	127212	Combined Chlorine (low)	0.00mg/L	1st hyd N of London Rd on Main St N	03-Nov-15	04-Nov-15	0.29mg/L	0
04-Nov-15	127225	Combined Chlorine (low)	0.02mg/L	1st hyd N of London Rd on Main St N	04-Nov-15	05-Nov-15	0.28mg/L	2
05-Nov-15	127248	Combined Chlorine (low)	0.03mg/L	1st hyd N of London Rd on Main St N	05-Nov-15	06-Nov-15	0.37mg/L	1
06-Nov-15	127269	Combined Chlorine (low)	0.12mg/L	Sample Station on Cedarwood	06-Nov-15	06-Nov-15	0.27mg/L	0
07-Nov-15	127288	Combined Chlorine (low)	0.08mg/L	Hydrant @ 115 Willow Lane	07-Nov-15	07-Nov-15	0.44mg/L	1
09-Nov-15	127310	Combined Chlorine (low)	0.13mg/L	SS-11 Cedarwood Ave	09-Nov-15	10-Nov-15	0.34mg/L	0
10-Nov-15	127317	Combined Chlorine (low)	0.19mg/L	Hyd fronting 655 Haines Rd	10-Nov-15	11-Nov-15	0.48mg/L	2
11-Nov-15	127336	Combined Chlorine (low)	0.09mg/L	Hydrant @ Youth Centre (56 Charles St)	11-Nov-15	13-Nov-15	0.49mg/L	3
12-Nov-15	127346	Combined Chlorine (low)	0.22mg/L	Hyd on the corner of Lindsay/Penn Ave	12-Nov-15	16-Nov-15	0.34mg/L	6
13-Nov-15	127372	Combined Chlorine (low)	0.16mg/L	SS-20 (opp. 124 Skelton St)	13-Nov-15	16-Nov-15	0.26mg/L	2
14-Nov-15	127385	Combined Chlorine (low)	0.17mg/L	SS-20 (opp. 124 Skelton St)	14-Nov-15	14-Nov-15	0.28mg/L	3
15-Nov-15	127393	Combined Chlorine (low)	0.13mg/L	1st hyd N of London Rd on Main St N	15-Nov-15	15-Nov-15	0.45mg/L	3
16-Nov-15	127405	Combined Chlorine (low)	0.06mg/L	SS-11 Cedarwood Ave	16-Nov-15	19-Nov-15	0.25mg/L	1

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17-Nov-15	127417	Combined Chlorine (low)	0.18mg/L	Hyd opp 752 Cedarwood Ave	17-Nov-15	19-Nov-15	0.28mg/L	1
18-Nov-15	127432	Combined Chlorine (low)	0.04mg/L	Hyd fronting 756 Cedarwood Ave	18-Nov-15	19-Nov-15	0.26mg/L	0
19-Nov-15	127446	Combined Chlorine (low)	0.08mg/L	SS-10 Lindsay Ave	19-Nov-15	20-Nov-15	0.58mg/L	1
20-Nov-15	127457	Combined Chlorine (low)	0.03mg/L	Hyd fronting 655 Haines Rd	20-Nov-15	23-Nov-15	0.31mg/L	1
21-Nov-15	127465	Combined Chlorine (low)	0.08mg/L	SS-20 (opp. 124 Skelton St)	21-Nov-15	23-Nov-15	0.26mg/L	2
22-Nov-15	127475	Combined Chlorine (low)	0.13mg/L	SS-20 (opp. 124 Skelton St)	22-Nov-15	23-Nov-15	0.27mg/L	0
23-Nov-15	127485	Combined Chlorine (low)	0.14mg/L	SS-20 (opp. 124 Skelton St)	23-Nov-15	25-Nov-15	0.31mg/L	1
24-Nov-15	127497	Combined Chlorine (low)	0.17mg/L	SS-28 Main St N (Max Stiles Park)	24-Nov-15	25-Nov-15	0.44mg/L	0
25-Nov-15	127507	Combined Chlorine (low)	0.17mg/L	Hyd fronting 197 Harrison Dr	25-Nov-15	27-Nov-15	1.15mg/L	1
26-Nov-15	127519	Combined Chlorine (low)	0.17mg/L	Hyd fronting 380 Traviss Dr	26-Nov-15	27-Nov-15	0.31mg/L	0
27-Nov-15	127525	Combined Chlorine (low)	0.03mg/L	Hyd fronting 654 Haines Rd	27-Nov-15	30-Nov-15	0.27mg/L	1
28-Nov-15	127536	Combined Chlorine (low)	0.11mg/L	Hyd @ 428 Traviss Dr	28-Nov-15	28-Nov-15	0.61mg/L	1
29-Nov-15	127538	Combined Chlorine (low)	0.18mg/L	Hyd adj. 136 Prospect St	29-Nov-15	28-Nov-15	0.28mg/L	1
30-Nov-15	127543	Combined Chlorine (low)	0.16mg/L	Hyd fronting 115 Willow Lane	30-Nov-15	01-Dec-15	0.29mg/L	1

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02-Dec-15	127575	Combined Chlorine (low)	0.12mg/L	SS-20 (opp. 124 Skelton St)	02-Dec-15	03-Dec-15	0.03mg/L*	0
03-Dec-15	127591	Combined Chlorine (low)	0.13mg/L	Hyd fronting 380 Traviss Dr	03-Dec-15	04-Dec-15	0.32mg/L	1
04-Dec-15	127597	Combined Chlorine (low)	0.13mg/L	SS-10 Lindsay Ave	04-Dec-15	07-Dec-15	0.49mg/L	0
05-Dec-15	127607	Combined Chlorine (low)	0.07mg/L	Hyd fronting 115 Willow Lane	05-Dec-15	05-Dec-15	0.30mg/L	2
06-Dec-15	127612	Combined Chlorine (low)	0.16mg/L	SS-10 Lindsay Ave	06-Dec-15	09-Dec-15	0.40mg/L	4
07-Dec-15	127615	Combined Chlorine (low)	0.14mg/L	Hyd fronting 380 Traviss Dr	07-Dec-15	08-Dec-15	0.35mg/L	3
09-Dec-15	127637	Combined Chlorine (low)	0.11mg/L	Hyd on corner of Bristol/Dorchester	09-Dec-15	11-Dec-15	0.25mg/L	5
10-Dec-15	127648	Combined Chlorine (low)	0.19mg/L	Hyd on the corner of Pearson/Prospect Sts	10-Dec-15	11-Dec-15	0.40mg/L	3
11-Dec-15	127656	Combined Chlorine (low)	0.03mg/L	Hyd fronting 655 Haines Rd	11-Dec-15	14-Dec-15	0.28mg/L	1
12-Dec-15	127679	Combined Chlorine (low)	0.09mg/L	Hyd @ 287 Penn Ave	12-Dec-15	15-Dec-15	0.29mg/L	2
13-Dec-15	127668	Combined Chlorine (low)	0.17mg/L	Hyd @ 287 Penn Ave	13-Dec-15	14-Dec-15	0.29mg/L	2
14-Dec-15	127665	Combined Chlorine (low)	0.14mg/L	1st hyd N of London Rd on Main St N	14-Dec-15	15-Dec-15	0.36mg/L	2
15-Dec-15	127719	Combined Chlorine (low)	0.12mg/L	SS-20 (opp. 124 Skelton St)	15-Dec-15	16-Dec-15	0.41mg/L	1
17-Dec-15	127745	Combined Chlorine (low)	0.23mg/L	Hyd @ Youth Centre (56 Charles St)	17-Dec-15	18-Dec-15	0.27mg/L	1

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18-Dec-15	127755	Combined Chlorine (low)	0.05mg/L	Hyd fronting 380 Traviss Dr	18-Dec-15	21-Dec-15	0.27mg/L	4
19-Dec-15	127760	Combined Chlorine (low)	0.10mg/L	SS-20 (opp. 124 Skelton St)	19-Dec-15	19-Dec-15	0.26mg/L	1
20-Dec-15	127763	Combined Chlorine (low)	0.12mg/L	Hyd @ 287 Penn Ave	20-Dec-15	20-Dec-15	0.38mg/L	2
21-Dec-15	127765	Combined Chlorine (low)	0.03mg/L	SS-24 18100 Yonge St	21-Dec-15	22-Dec-15	1.55mg/L	0
22-Dec-15	127785	Combined Chlorine (low)	0.20mg/L	1st hyd w of Main St on Bexhill	22-Dec-15	23-Dec-15	0.35mg/L	2
24-Dec-15	127812	Combined Chlorine (low)	0.21mg/L	Hyd fronting 25 Lorne Ave	24-Dec-15	30-Dec-15	0.37mg/L	0
26-Dec-15	127835	Combined Chlorine (low)	0.13mg/L	1st hyd N of London Rd on Main St N	26-Dec-15	26-Dec-15	0.28mg/L	1
27-Dec-15	127838	Combined Chlorine (low)	0.20mg/L	SS-10 Lindsay Ave	27-Dec-15	27-Dec-15	0.81mg/L	2
28-Dec-15	127839	Combined Chlorine (low)	0.07mg/L	531 Davis Dr	28-Dec-15	28-Dec-15	0.58mg/L	2
29-Dec-15	127855	Combined Chlorine (low)	0.09mg/L	SS-20 (opp. 124 Skelton St)	29-Dec-15	31-Dec-15	0.26mg/L	2
31-Dec-15	127885	Combined Chlorine (low)	0.13mg/L	SS-20 (opp. 124 Skelton St)	31-Dec-15	31-Dec-15	0.26mg/L	0



2015 Consumption Data

Table 6 represents a summary of 2015 water billing from the Region of York to the Town of Newmarket for the supply of water.

Table 6: 2015 Consumption Data

DESCRIPTION	AMOUNT
Total water billed to Newmarket by York Region	8, 253, 031 m ³
Total water billed to consumers by Newmarket	6,940,811 m ³
m ³ Unbilled	1,312,220 m ³
% Loss*	*15.9 %

** % loss includes water used for flushing to maintain water quality, firefighting, new watermain commissioning / testing, routine maintenance activities, watermain breaks, meter reading inaccuracies, and system leakage*

Table 7, contained on the following two pages, illustrates a detailed breakdown of monthly water flows from York Region Sources into the Town of Newmarket's Water Distribution System.

2015 ANNUAL WATER QUALITY SUMMARY REPORT



2015 Production Flows

Town of Newmarket
 Monthly Water 2015
 Date: 1/27/2016



Newmarket	January	February	March	April	May	June	July	August	September	October	November	December	YTD Total
Aurora Ballymore (Aurora) m3	0	0	0	0	0	0	0	0	0	0	0	0	0
Aurora Ballymore (Newmarket) m3	18,911	4,384	0	0	6,337	75,069	80,161	36,862	27,068	28,163	18,725	19,624	315,303
Aurora West 12" (Aurora) m3	0	0	0	0	0	0	-36	-47	-45	-34	-25	-24	-212
Aurora West 12" (Newmarket) m3	0	0	0	0	0	0	129,511	139,620	137,391	124,607	107,036	109,800	747,965
Aurora West 4" (Aurora) m3	0	0	-1	-1	-1	-21	0	0	0	0	0	0	-23
Aurora West 4" (Newmarket) m3	41,754	33,553	15,549	26,131	27,594	56,596	0	0	0	0	0	0	201,176
Aurora West 8" (Aurora) m3	0	0	0	0	0	-4	-9	-9	-9	-8	-7	-9	-55
Aurora West 8" (Newmarket) m3	73,049	61,348	70,885	49,560	64,297	54,648	79	78	75	77	77	85	374,256
Colonel Weyling m3	-7,540	-11,145	-11,666	-12,406	-15,505	-14,725	-15,202	-11,412	-6,622	0	0	0	-106,223
EG Leslie Street MC 12" Fwd to NW m3	0	0	0	0	0	0	0	0	0	114,510	112,931	134,450	361,890
EG Leslie Street MC 12" Rev to EG m3	0	0	0	0	0	0	0	0	0	-1,065	-481	-394	-1,940
EG Leslie Street MC 22" Fwd to NW m3	0	0	0	0	0	0	0	0	0	10	6	0	16
EG Leslie Street MC 22" Rev to EG m3	0	0	0	0	0	0	0	0	0	-11	-6	0	-17
Herald Road m3	-512	-481	-682	-670	-714	-1,020	-1,079	-1,010	-857	0	0	0	-7,025
Leslie/Broughton (Aurora) m3	0	0	0	0	0	0	0	0	0	0	0	0	0
Leslie/Broughton (Newmarket) m3	226,838	124,084	105,189	95,428	143,160	209,262	217,965	235,002	218,670	197,845	198,824	207,155	2,179,418
Newmarket Well No. 1 m3	14,905	29,355	36,054	32,939	32,186	20,604	11,966	9,221	9,108	11,736	5,071	9,964	223,108
Newmarket Well No. 13 m3	37,765	89,864	100,998	95,550	95,432	65,486	53,693	38,969	41,095	54,525	40,498	28,146	742,019
Newmarket Well No. 15 m3	10,300	36,421	46,034	50,125	55,310	26,902	36,675	41,909	36,648	31,376	27,092	31,044	429,833
Newmarket Well No. 16 m3	45,495	86,949	102,392	95,913	103,525	13,860	26,303	41,737	34,237	19,680	12,676	38,550	621,316
Newmarket Well No. 2 m3	35,284	74,564	88,716	79,684	87,596	15,874	39,609	38,513	39,126	31,347	30,709	31,245	592,267
Newmarket/Aurora (Aurora) m3	-1,131	-52	0	0	-12	-21	-333	0	-102	-5	-137	-253	-2,046

Table 7: 2015 Monthly Water Flows from York Region Sources to the Town of Newmarket Water Distribution System



	January	February	March	April	May	June	July	August	September	October	November	December	YTD Total
Newmarket/Aurora (Newmarket) m3	47,534	55,583	89,713	85,326	103,878	100,693	107,278	95,359	146,080	150,787	97,583	48,919	1,128,731
Queensville m3	-3,720	-3,360	-3,720	-3,600	-3,720	-3,600	-3,720	-3,720	-3,600	0	0	0	-32,760
Queensville Well No. 1 m3	48,265	37,131	21,151	15,718	20,279	38,884	54,025	39,374	33,316	0	0	0	308,142
Queensville Well No. 2 m3	25,352	5,934	15,661	20,563	33,185	19,685	22,377	48,334	41,075	0	0	0	232,166
Queensville Well No. 3 m3	46,548	37,295	23,849	18,459	9,709	60,433	86,301	41,020	31,373	0	0	0	354,987
Queensville Well No. 4 m3	51,687	10,992	13,835	20,733	45,014	27,469	171	55,112	49,367	0	0	0	274,380
Sharon North (Newmarket) m3	0	0	0	0	0	0	0	0	0	0	0	0	0
Sharon North (Sharon) m3	-19,712	-16,704	-18,160	-18,288	-29,664	-31,152	-34,832	-33,983	-24,464	0	0	0	-226,960
Sharon South m3	-726	-570	-536	-798	-3,157	-2,926	-4,209	-3,602	-2,018	0	0	0	-18,541
Woodspring Avenue (East Gwillimbury) m3	-31,719	-20,700	-22,524	-23,038	-26,907	-44,859	-30,603	-42,774	-43,691	-34,916	-18,951	-19,328	-360,007
Woodspring Avenue (Newmarket) m3	4	4	8	19	7	4	5	2	3	10	25	12	104
Yonge/Aspenwood (East Gwillimbury) m3	-20	-49	-19	-18	-19	-19	-22	-40	-34	-22	-18	-20	-299
Yonge/Aspenwood (Newmarket) m3	37	35	37	37	41	39	41	43	41	50	42	46	489
Yonge/Bristol (East Gwillimbury) m3	-7,213	-7,716	-7,804	-5,982	-7,008	-6,054	-7,106	-7,770	-6,238	-5,069	-5,224	-6,018	-79,202
Yonge/Bristol (Newmarket) m3	28	27	34	80	80	74	49	38	55	96	96	116	775
Total Water Consumption m3	651,462	626,744	664,993	621,463	740,921	681,181	769,056	756,825	757,048	723,687	626,542	633,109	8,253,031

Maximum Daily Flow m3	26,210	28,538	25,369	23,947	31,066	26,815	38,347	35,488	39,980	36,721	34,110	37,197	39,980
Maximum Date	25-Jan-15	10-Feb-15	31-Mar-15	18-Apr-15	26-May-15	20-Jun-15	27-Jul-15	24-Aug-15	7-Sep-15	18-Oct-15	15-Nov-15	18-Dec-15	
Minimum Daily Flow m3	15,015	18,352	18,100	15,455	18,442	19,907	21,601	23,021	25,996	26,348	23,054	23,372	15,015
Minimum Date	5-Jan-15	18-Feb-15	20-Mar-15	15-Apr-15	12-May-15	29-Jun-15	1-Jul-15	10-Aug-15	12-Sep-15	26-Oct-15	9-Nov-15	25-Dec-15	
Average Daily Flow m3	21,015	22,384	21,451	20,715	23,901	22,706	28,985	29,120	32,824	31,221	28,756	29,583	26,055

Table 8: 2015 Monthly Water Flows from York Region Sources to the Town of Newmarket Water Distribution System



Keeping Our Water Safe

Multiple-Barrier Approach

As a part of the Walkerton Inquiry, Justice Dennis O'Connor endorsed a “multi-barrier approach” to ensure drinking water safety. This multi-faceted system is a collection of “procedures, processes, and tools that collectively prevent or reduce the contamination of drinking water from source to consumer in order to reduce the risks to public health.” (Source: *Ontario Ministry of the Environment, 2007; Implementing Quality Management: A Guide for Ontario's Drinking Water Systems*)

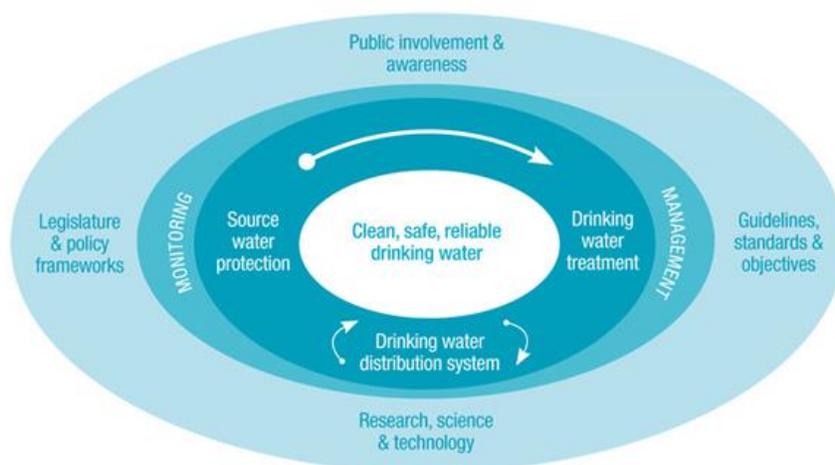


Figure 3: Multiple-Barrier Approach to Drinking Water Protection

The multiple barriers include:

- ❖ **Source Protection** to keep the raw water as clean as possible in order to lower the risks that hazards present
- ❖ **Treatment** to remove and/or neutralize hazards
- ❖ **Monitoring Program** to detect and act on system problems that could impair drinking water safety and to verify the performance of the system components and finished drinking water quality
- ❖ Effective **management systems** including automatic control systems, well-developed responses, and operating practices that are the ultimate means for protecting the safety of drinking water systems.”

(Source: *Ontario MOE, 2007, Implementing Quality Management: A Guide for Ontario's Drinking Water Systems*)



Requirements of the Ontario Safe Drinking Water Act, 2002

The Ontario *Safe Drinking Water Act, 2002 (SDWA)* enhances the level of drinking water protection across the province by providing a clear, consistent set of standards and rules to ensure the provision of safe, high-quality drinking water. This Act holds owners of drinking water systems to their responsibilities to protect drinking water consumers: It specifies the requirements for drinking water systems, testing services, and for the certification of operators, as well as setting quality standards and mechanisms for compliance and enforcement. The section of the SDWA that specifically applies to the owners and operating authority of the Newmarket WDS is “*Part III – General Requirements*”. This document outlines the minimum standards that owners/operating authorities must adhere to.

PART III GENERAL REQUIREMENTS

Potable water

10. *Despite any other Act, a requirement that water be “potable” in any Act, regulation, order or other document issued under the authority of any Act or in a municipal by-law shall be deemed to be a requirement to meet, at a minimum, the requirements of the prescribed drinking water quality standards. 2002, c. 32, s. 10.*

Duties of owners and operating authorities

11. (1) *Every owner of a municipal drinking water system or a regulated non-municipal drinking water system and, if an operating authority is responsible for the operation of the system, the operating authority for the system shall ensure the following:*

- 1. That all water provided by the system to the point where the system is connected to a user’s plumbing system meets the requirements of the prescribed drinking water quality standards.*
- 2. That, at all times in which it is in service, the drinking water system,
 - i. is operated in accordance with the requirements under this Act,*
 - ii. is maintained in a fit state of repair, and*
 - iii. satisfies the requirements of the standards prescribed for the system or the class of systems to which the system belongs.**
- 3. That the drinking water system is operated by persons having the training or expertise for their operating functions that is required by the regulations and the licence or approval issued or granted for the system under this Act.*
- 4. That all sampling, testing and monitoring requirements under this Act that relate to the drinking water system are complied with.*
- 5. That personnel at the drinking water system are under the supervision of persons having the prescribed qualifications.*



6. That the persons who carry out functions in relation to the drinking water system comply with such reporting requirements as may be prescribed or that are required by the conditions in the licence or approval issued or granted for the system under this Act. 2002, c. 32, s. 11 (1).

Duty of owner to report to public

[\(2\)](#) If an owner of a municipal drinking water system or regulated non-municipal drinking water system is required by the regulations to report on any matter to the public, the owner shall report in accordance with the regulations. 2002, c. 32, s. 11 (2).

Out-of-province drinking water testing service

[\(3\)](#) No owner or operating authority of a municipal drinking water system or regulated non-municipal drinking water system shall obtain a drinking water testing service from a person who is not licensed under Part VII to offer or provide the service unless,

(a) the laboratory at which the testing is to be conducted is located outside Ontario and is an eligible laboratory in respect of the particular tests to be conducted;

(b) the person agrees in writing to comply with section 18 and any prescribed requirements; and

(c) the owner or operating authority provides to the Director appointed for the purposes of Part VII,

(i) written notice of the use of the testing service,

(ii) a copy of the accreditation referred to in clause (4) (a), if applicable, and

(iii) a copy of the agreement referred to in clause (b). 2002, c. 32, s. 11 (3).

Eligible laboratory

[\(4\)](#) For the purposes of this section, a laboratory located outside Ontario is an eligible laboratory in respect of a particular test if the laboratory is on a list maintained by the Director appointed for the purposes of Part VII and,

(a) the laboratory is accredited for the conduct of the test and, in the Director's opinion, the accreditation is equivalent to the accreditation standard of an accreditation body for drinking water testing under Part VII; or

(b) in the Director's opinion,

(i) it is desirable for the purposes of this Act that the test be available,

(ii) there is no laboratory, or there are insufficient laboratories, in the area for the conduct of the test under a licence issued under Part VII, and

(iii) the person who is to provide the drinking water testing service will be capable of conducting the test at the laboratory, or causing the test to be conducted there. 2002, c. 32, s. 11 (4).



List of out-of-province laboratories

[\(5\)](#) For the purposes of subsection (4), a laboratory may be added to the list maintained by the Director, and may be retained on the list, only if,

- (a) any fee required under this Act has been paid in respect of the laboratory; and
- (b) the laboratory complies with the prescribed requirements. 2002, c. 32, s. 11 (5).

Director's direction

[\(6\)](#) The Director may issue a direction to one or more owners or operating authorities prohibiting them from obtaining drinking water testing services from a laboratory located outside Ontario if the Director has reason to believe that the laboratory has ceased to be an eligible laboratory or has failed to comply with section 18 or a prescribed requirement. 2002, c. 32, s. 11 (6).

Same

[\(7\)](#) Every person who receives a direction under subsection (6) shall comply with the direction and advise the Director in writing of the alternative laboratory from which the person will obtain drinking water testing services. 2002, c. 32, s. 11 (7).

Revocation of direction

[\(8\)](#) The Director may revoke a direction issued under subsection (6) if he or she is of the opinion that the reasons for issuing the direction no longer exist. 2002, c. 32, s. 11 (8).

Operator's certificate

[12. \(1\)](#) No person shall operate a municipal drinking water system or a regulated non-municipal drinking water system unless the person holds a valid operator's certificate issued in accordance with the regulations. 2002, c. 32, s. 12 (1).

Transitional

[\(2\)](#) For the purposes of subsection (1), a valid operator's licence issued under section 6 of Ontario Regulation 435/93 under the Ontario Water Resources Act shall be deemed to be an operator's certificate until the day the operator's licence expires or is cancelled or suspended. 2002, c. 32, s. 12 (2).

Same

[\(3\)](#) For the purposes of subsection (1), a valid operator's licence issued under section 7 or 8 of Ontario Regulation 435/93 under the Ontario Water Resources Act shall be deemed to be an operator's certificate until the earlier of,

- (a) the day the operator's licence is cancelled or suspended; and
- (b) the day that is the second anniversary of the day of filing of a regulation made under this Act governing the application and issue of operator's certificates. 2002, c. 32, s. 12 (3).



Same

(4) If an operator's licence mentioned in subsection (3) expires before the day described in clause (3) (b) and is not renewed, the licence ceases to be deemed to be an operator's certificate on the day it expires. 2002, c. 32, s. 12 (4).

Duty to have accredited operating authority

13. (1) Every owner of a municipal drinking water system shall ensure that an accredited operating authority is in charge of the system at all times on and after the day specified in the regulations for the municipality, the system or the owner of the system. 2002, c. 32, s. 13 (1).

Same

(2) If the Minister makes a regulation requiring an accredited operating authority to be in charge of a non-municipal drinking water system, the owner of the system shall ensure that an accredited operating authority is in charge of the system at all times. 2002, c. 32, s. 13 (2).

Agreement with accredited operating authority

14. (1) If an accredited operating authority is in charge of a drinking water system and it is not the owner of the system, the accredited operating authority and the owner of the system shall enter into an agreement that contains the following:

- 1. A description of the system or the parts of the system for which the operating authority is responsible.*
- 2. A description of the respective responsibilities of the owner and the operating authority to ensure that the operation, maintenance, management and alteration of the system comply with this Act, the regulations, any order under this Act and the conditions in,
 - i. the drinking water works permit and the municipal drinking water licence for the system, in the case of a municipal drinking water system, or*
 - ii. the approval for the system, in the case of a non-municipal drinking water system.**
- 3. A description of the respective responsibilities of the owner and the accredited operating authority in the event a deficiency is determined to exist or an emergency occurs.*
- 4. A description of the respective responsibilities of the owner and the accredited operating authority to ensure that the operational plans for the system are reviewed and revised appropriately and that both parties are informed of all revisions.*
- 5. Any other provisions required by the regulations. 2002, c. 32, s. 14 (1).*

Delegation of duty

(2) If an owner of a drinking water system enters into an agreement with an accredited operating authority, the owner may, in the agreement, delegate a duty imposed on the owner under this Act to the accredited operating authority. 2002, c. 32, s. 14 (2).



Exception

[\(3\)](#) A delegation referred to in subsection (2) shall not relieve the owner of the drinking water system from the duty to comply with section 19 or the duty,

(a) to ensure that the accredited operating authority carries out its duties under this Act and the agreement in a competent and diligent manner while it is in charge of the system; and

(b) upon discovery that the accredited operating authority is failing to act in accordance with clause (a), to take all reasonable steps to ensure that the operation of the system complies with the requirements under this Act. 2002, c. 32, s. 14 (3).

Agreement to be made public

[\(4\)](#) The contents of every agreement referred to in subsection (1) between an owner of a drinking water system and an accredited operating authority shall be made public by the owner of the system in accordance with the requirements prescribed by the Minister. 2002, c. 32, s. 14 (4).

Directions, operational plans

[15. \(1\)](#) The Director shall, on or before the prescribed date, issue directions governing the preparation and content of operational plans for municipal drinking water systems and may issue such additional directions as the Director considers necessary for the purposes of this section. 2002, c. 32, s. 15 (1).

Same

[\(2\)](#) If the Minister makes a regulation requiring a non-municipal drinking water system or a class of non-municipal drinking water systems to have operational plans, the Director shall, on or before the date prescribed by the Minister, issue directions governing the preparation and content of operational plans for the system or systems. 2002, c. 32, s. 15 (2).

Same

[\(3\)](#) The Director may amend, revoke or replace a direction issued under this section. 2002, c. 32, s. 15 (3).

Content of direction

[\(4\)](#) The direction shall include,

(a) minimum content requirements for operational plans;

(b) rules respecting the retention of copies of versions of operational plans;

(c) rules respecting the public disclosure of the contents of operational plans; and

(d) such other requirements as the Director considers necessary for the purposes of this Act and the regulations. 2002, c. 32, s. 15 (4).

Same

[\(5\)](#) A direction issued under this section may,



(a) be general or limited in its application;

(b) apply in respect of any class of drinking water systems;

(c) require the preparation of operational plans for a treatment system, a distribution system or any part of either or both of them. 2002, c. 32, s. 15 (5).

Publication

[\(6\)](#) A direction, amendment to a direction or revocation of a direction takes effect when a notice of the direction, amendment or revocation, as the case may be, is given in the Registry. 2002, c. 32, s. 15 (6).

Legislation Act, 2006, Part III

[\(7\)](#) Part III (Regulations) of the Legislation Act, 2006 does not apply to a direction issued under this section. 2002, c. 32, s. 15 (7); 2006, c. 21, Sched. F, s. 132 (1).

Operational plans

[16. \(1\)](#) If operational plans are required for a drinking water system under this Act, every owner and accredited operational authority of the system shall,

(a) ensure that the plans comply with such directions issued under section 15 that apply in respect of the system; and

(b) make public the contents of the operating plans in accordance with the Director's directions. 2002, c. 32, s. 16 (1).

Submission of plans, municipal drinking water system

[\(2\)](#) Every owner of a municipal drinking water system shall provide a copy of all operational plans for the system to the Director on or before the day prescribed by the regulations for the municipality, the system or the owner of the system. 2002, c. 32, s. 16 (2).

Review of plans

[\(3\)](#) The Director shall review the operational plans for the municipal drinking water system and shall issue a notice,

(a) accepting the plans if the Director is satisfied that the plans satisfy the directions; or

(b) rejecting the plans for the reasons set out in the notice, if the Director is not satisfied that the plans satisfy the directions. 2002, c. 32, s. 16 (3).

Resubmission of plans

[\(4\)](#) The owner of a municipal drinking water system whose operational plans are rejected by the Director shall revise and resubmit the revised plans to the Director in accordance with the directions specified in the notice. 2002, c. 32, s. 16 (4).



Ownership of operational plans

[17. \(1\)](#) All operational plans for a drinking water system remain the property of the owner of the system, irrespective of who prepares or revises the plans. 2002, c. 32, s. 17 (1).

Retention of plans

[\(2\)](#) Every accredited operating authority of a drinking water system for which operational plans are required under this Act shall retain copies of the operational plans for the system in accordance with the Director's directions under section 15. 2002, c. 32, s. 17 (2).

Same

[\(3\)](#) Upon termination of an agreement between the owner and the accredited operating authority of a system, the accredited operating authority shall ensure that the owner has copies of the most recently prepared and revised operational plans for the system. 2002, c. 32, s. 17 (3).

Duty to report adverse test result

[18. \(1\)](#) Each of the following persons shall report every prescribed adverse result of a drinking water test conducted on any waters from a municipal drinking water system or a regulated non-municipal drinking water system to the Ministry and the medical officer of health immediately after the adverse result is obtained:

1. The operating authority responsible for the system or, if there is no operating authority responsible for the system, the owner of the system.
2. The person operating the laboratory at which the adverse result was obtained. 2002, c. 32, s. 18 (1); 2007, c. 10, Sched. D, s. 3 (6).

Same

[\(2\)](#) A report under subsection (1) shall be made in accordance with the regulations. 2002, c. 32, s. 18 (2).

Duty to report to the owner

[\(3\)](#) If an operating authority is required to report an adverse test result under subsection (1), the operating authority shall also immediately report the adverse test result to the owner of the system for which the operating authority is responsible. 2007, c. 10, Sched. D, s. 3 (7).

Duty of laboratory to report

[\(4\)](#) Every person operating a laboratory who is required to report an adverse test result under subsection (1) shall also notify the operating authority responsible for the system or, if there is no operating authority responsible for the system, the owner of the system, of every adverse test result relating to the system, immediately after the adverse result is obtained. 2007, c. 10, Sched. D, s. 3 (7).

Duty to report adverse test result

[18.1 \(1\)](#) The person operating the laboratory at which an adverse result was obtained shall report every prescribed adverse result of a drinking water test conducted on any waters from a small drinking water



system within the meaning of the Health Protection and Promotion Act to the Ministry of Health and Long-Term Care and the medical officer of health immediately after the adverse result is obtained. 2007, c. 10, Sched. D, s. 3 (8).

Same

[\(2\)](#) A report under subsection (1) shall be made in accordance with the regulations. 2007, c. 10, Sched. D, s. 3 (8).

Duty of laboratory to report

[\(3\)](#) Every person operating a laboratory who is required to report an adverse test result under subsection (1) shall also notify the operator responsible for the system or, if there is no operator responsible for the system, the owner of the system, of every adverse test result relating to the system, immediately after the adverse result is obtained. 2007, c. 10, Sched. D, s. 3 (8).

Standard of care, municipal drinking water system

[19. \(1\)](#) Each of the persons listed in subsection (2) shall,

(a) exercise the level of care, diligence and skill in respect of a municipal drinking water system that a reasonably prudent person would be expected to exercise in a similar situation; and

(b) act honestly, competently and with integrity, with a view to ensuring the protection and safety of the users of the municipal drinking water system. 2002, c. 32, s. 19 (1).

Same

[\(2\)](#) The following are the persons listed for the purposes of subsection (1):

1. The owner of the municipal drinking water system.

2. If the municipal drinking water system is owned by a corporation other than a municipality, every officer and director of the corporation.

3. If the system is owned by a municipality, every person who, on behalf of the municipality, oversees the accredited operating authority of the system or exercises decision-making authority over the system. 2002, c. 32, s. 19 (2).

Offence

[\(3\)](#) Every person under a duty described in subsection (1) who fails to carry out that duty is guilty of an offence. 2002, c. 32, s. 19 (3).

Same

[\(4\)](#) A person may be convicted of an offence under this section in respect of a municipal drinking water system whether or not the owner of the system is prosecuted or convicted. 2002, c. 32, s. 19 (4).



Reliance on experts

[\(5\)](#) A person shall not be considered to have failed to carry out a duty described in subsection (1) in any circumstance in which the person relies in good faith on a report of an engineer, lawyer, accountant or other person whose professional qualifications lend credibility to the report. 2002, c. 32, s. 19 (5).

Prohibition

[20. \(1\)](#) No person shall cause or permit any thing to enter a drinking water system if it could result in,

(a) a drinking water health hazard;

(b) a contravention of a prescribed standard; or

(c) interference with the normal operation of the system. 2002, c. 32, s. 20 (1).

Exception

[\(2\)](#) Subsection (1) does not apply to prohibit activities that are carried out,

(a) in the course of the proper operation, maintenance, repair or alteration of a drinking water system; or

(b) under a statutory authority or for the purposes of complying with a statutory requirement. 2002, c. 32, s. 20 (2).

Dilution no defence

[\(3\)](#) For the purposes of prosecuting the offence of contravening subsection (1), it is not necessary to prove that the thing, if it was diluted when or after it entered the system, continued to result in or could have resulted in a drinking water health hazard. 2002, c. 32, s. 20 (3).

Safe Drinking Water Act, 2002 (S.O. 2002, CHAPTER 32), PART III - GENERAL REQUIREMENTS

Consolidation Period: From December 31, 2012 to the e-Laws currency date.

Last amendment: See Table of Public Statute Provisions Repealed under Section 10.1 of the Legislation Act, 2006 – December 31, 2012.

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The Public Works Services Department is pleased to present this report for 2015 to members of Council and our residents.