

The Township of North Glengarry

Alexandria Drinking Water System

2019 Annual and Summary Report

In compliance with O. Reg 170/03, section 11 and O. Reg 170/03 schedule 22

Contents

Section 1: Introduction

Section 2: System Description

Section 3: Process and Equipment Description

Section 4: Flow Summary

Section 5: Sampling and Laboratory Analysis Summary

Section 6: Significant Expenses Incurred

Section 7: Compliance with Licenses, Permits, Approvals and Orders

Section 8: Non-Compliance with Licenses, Permits, Approvals and Orders

Section 9: Township of North Glengarry Endorsement of Summary

Section 10: Contacts

Appendix A: 2019 Alexandria Treated Flows

Appendix B: 2019 Alexandria Maximum Instantaneous Flows

Appendix C: Comparison of Average and Maximum Monthly Flow Rates for Alexandria Treatment Facility

Appendix D: Compliance Status Report

Section 1: Introduction

This report is an annual summary of water quantity, quality system information, system operations and major expenditures for the Alexandria Water Treatment plant and distribution system during the reporting period of January 1, 2019 to December 31, 2019. It was prepared in accordance with section 11 and schedule 22 of the of Ontario's Drinking Water Systems Regulation O. Regulation 170/03.

Section 2: System Description

The Alexandria Water Treatment Plant is located on Gernish St West within the town of Alexandria. This system uses surface water, from the Mill Pond, as its source to supply the residents with treated water and has a rated capacity of 8014m³/day. It is categorized as a large municipal residential drinking water system.

Section 3: Process and Equipment Description

Raw Water Intake

Located in Mill Pond, approximately 425m southwest of the water treatment plant, the intake is comprised of a precast concrete pipe, 1.5m diameter and 760mm high, placed on top of a concrete slab housed in a 2.4m by 2.4m timber crib with screening.

A 350mm concrete pipe runs from the intake, east through the Island Park to Park Avenue, then north up Park Avenue before turning east into the water plant, where it enters the low lift chamber.

The flows from Mill Pond to the water plant are based on gravity, and therefore are heavily influenced by water depth in the Mill Pond. In the event levels begin to reduce the Township will communicate with the Raisin River Conservation Authority to ensure levels will be sufficient to supply the raw water demands, which can be achieved through river damming system in place.

Low Lift Chamber/Raw Water Well

The chamber/well is 4.7m by 1.5m by 4.0m and located in the southwest corner of the water treatment plant. There are two coarse screens, openings approximately 6.45m², located between the raw well entry and the low lift chamber to provide a coarse screening prior to pumping.

The low lift pumps consist of two 14.9kW vertical turbine pumps, rated at 6,200m³/day at 14.6m total dynamic head (TDH). Each pump is equipped with auto, manual and stop capability through the SCADA control system and at the electrical panel. A flow meter and electric valve are used to control flows from the pumps, the valve will modulate based on flocculation tank levels. At any time if the flows are near the Permit to Take Water (PTTW) restrictions, the valve can be manually operated to ensure the levels are not exceeded.

Chemicals added to the raw well include activated carbon and potassium permanganate. The activated carbon is typically added during warmer water temperatures to aid taste and odour treatment. The potassium permanganate is typically added during colder water temperatures and aids to oxidize manganese, which generally only begins to increase after ice cover of the Mill Pond.

Coagulation/Flocculation/Sedimentation

A coagulant and polymer feed systems are in place at the water treatment plant, with the coagulant feed entering just prior to an in-line mixer after the low lift pumps. The polymer feed is located just prior to the inlet for the first flocculation tank. All flows after the first flocculation tank are based on gravity.

After chemical addition water enters 2 flocculation chambers operated in series, each measuring 2.6m by 4.6m, and each chamber is equipped with a 0.37kW, 5 rpm agitator for slow and gentle mixing. A depth

measurement is taken at the end of the second flocculation tank and this measurement is used to control the flows from the low lift pumps.

After chemical addition and flocculation, the water is directed into a conduit channel directing water to the sediment tanks.

The sediment tanks are comprised of 4 concrete tanks, operated in parallel and each measuring 11.7m by 3.6m by 4.9m. Each tank is baffled by a 4.7m by 2.7m wall located roughly 5.6m from the inlet and on the far side of the wall, tube settlers with a cross sectional area of 3.6m by 6.1m, are used to aid in the settling process. On the bottom of each tank contains sludge hoppers and drainpipes. The program is run through the SCADA system and sludge is removed based on amount of water treated and this can be adjusted as required.

Filtration

The filtration system consists of four filters measuring 3.9m by 2.9m by 2.8m, which operate in parallel. Each filter has the capability of filtering a maximum flow of 2003m³/day; has a surface area of 11.3m²; is a mixed media, GAC and sand or anthracite and sand; contains a surface wash system; and is completed by an underdrain system. The filter is also equipped with loss or head monitoring and turbidity monitoring, both of which is used in determining when the filter is to be cleaned.

The backwash system is comprised of 2 pumps, a duty and standby, and all associated piping and valves. The duty pump is rated at 114L/sec at 9.2m TDH, where the standby is rates at 120L/sec at 10.2 TDH. All effluent water is directed to the sludge holding tank, where the supernatant is directed to the sanitary sewer.

Disinfection

The disinfection system uses chlorine gas, which is injected into the header pipe prior to entering the clearwell. The clearwell is divided into 2 wells (east and west) and each well contains and smaller cell within them, labelled 1-4. The wells are interconnected by valves through piping or sluice gate opening. Influent water enters clearwell 4 and travels towards clearwell 1 before being discharged to the distribution, which allows for the appropriate contact time required.

The actual chlorination system consists of three chlorinators, each having the capacity of 22.7kg/day, and are equipped with two vacuum regulators and four chlorine cylinders at use at any one time.

A chloramination system was commissioned on December 20, 2011. As the water leaves the plant, it is dosed with ammonia to create combined chlorine residuals. This enables a longer lasting chlorine residual out in the distribution and the potential for decrease in THM production.

High Lift Pumps

Three vertical turbine pumps are used to move the water from the clearwell to the distribution piping. The pumps are operated in duty and standby, with No. 1 and No. 3 located in clearwell 1; and No. 2 located in clearwell 4. Pump No. 2 is not to be run unless in an emergency situation or if all the disinfection requirements are met, as per the Disinfection Procedure.

Distribution

The distribution system is considered a class 2 distribution and services approximately 1990 services. It is comprised of varying sized water pipes, isolation valves, fire hydrants, air relief chambers, and pressure reducing valves. The current system was expanded from 28.2kms of water mains within the town boundaries of Alexandria to include a 20.4kms transmission main from Alexandria to Maxville and 10.2kms of water mains within the village limits of Maxville. The addition to the distribution system was placed into service in December 2019 after the completion of all construction, disinfection processes, and bacteriological testing requirements were met. No residential services in Maxville were connected during

2019. The transmission main is equipped with fire hydrants, located at low elevation points for flushing purposes, and air relief valves, located in chambers at high elevation points. Isolation valves were also installed at strategic location to isolate in the event of water break or maintenance.

A booster station was constructed 13kms from the Alexandria. As water enters the station it is analyzed for monochloramine, free ammonia, and free and total chlorine residuals. Based on the analysis, the residuals will be boosted to by on-site liquid sodium hypochlorite and liquid ammonia to ensure adequate residuals within the Maxville distribution. Free and total chlorine are also monitored at outlet after flow metering to ensure operations.

A 3000m³ water tower is located within the Alexandria town limits and a 1500m³ tower is located within the village limits of Maxville. These towers are used for maintaining system pressure, water storage and distribution as required.

Automated Monitoring and Control

A fully automated SCADA system was installed in the Alexandria Water Treatment Plant in 2011, and in the Alexandria-Maxville Booster Station in 2019; a monitoring node was installed in the Maxville Water Tower in 2019 for operational purposes. Currently these systems are running independently, and operational staff have remote and on-site control capabilities. This system is capable of monitoring, controlling and recording all the plant processes and data, such as flows, chlorine residual and turbidity readings. The system is also fully alarmed with multiple alarm set points, so that if any parameter limit is exceeded an alarm will be triggered on the SCADA desktop and through the auto dialer system. The on-call operator is then notified by the monitoring centre, which operates 24 hours a day, 365 days a year.

Emergency Power

A 175kW diesel powered generator is installed at the Alexandria Water Treatment Plant, which is capable of operating the water treatment plant processes and the Township of North Glengarry office building at full capacity. The automatic transfer switch for this unit is located on the first floor within the water treatment plant.

A 20kW natural gas-powered generator was installed at the Alexandria Water Tower in 2018 to ensure operations of the distribution analyzers, level monitor and to maintained communications with the water treatment plant during power outages. The automatic transfer switch is located within the equipment room of the Water Tower.

An 85kW propane powered generator was commissioned during the construction of the Alexandria-Maxville Booster station. It ensures operations of analyzers, dosing equipment, flow monitoring and pumping abilities between Alexandria and Maxville at all times. The automatic transfer switch is located within the booster station and two 2000L tanks were installed to ensure adequate fuel is on-site at all times.

Additional Equipment.

All piping, valves, controls and appurtenances along with associated mechanical and electrical equipment not mentioned in the description but are utilized to make up the system.

Section 4: Flow Summary

In order to assess the rated capacity of the WTP in terms of meeting existing and planned uses of the system, a summary of the treated flow rates of water supplied during this period covered by this report was prepared and is presented below. In accordance with License #181-101, the Alexandria Drinking Water System shall not be operated to exceed the rated capacity of the treatment system. The permit to take water allows for a maximum daily raw flow of 5,616 m³/day and the water works license allows for a maximum treated water flow of 8,014m³.

The average treated daily flow for 2019 is calculated to be 2,199m³ and the maximum treated daily flow for the year was reported to be 3,399 m³. This represents 27.4% of the total treated water rated capacity. Refer to the appendices for full 2019 data summary

2019 Treated Flow Summary	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Maximum Daily Flow (m ³)	2,993	2,711	2,564	2,257	3,176	2,831	2,855	3,015	3,399	3,164	2,969	2,816
Monthly Average Flow (m ³)	2,552	2,357	2,171	1,878	2,124	2,107	2,158	2,134	2,220	2,584	2,282	1,827
Monthly Average Daily Maximum Instantaneous Flow (L/s)	0.065	0.066	0.044	0.044	0.078	0.051	0.040	0.051	0.078	0.045	0.047	0.064
Rated Maximum Daily Flow for the approved system										8014 m ³ /day		
Rated Maximum Instantaneous Flow										0.093 L/s		

Section 5: Sampling and Laboratory Analysis Summary

The Township of North Glengarry uses Cadouceon Laboratories as the primary provider for all sample analysis. Cadouceon Laboratories is an accredited laboratory under the Ministry of the Environment and Climate Control requirements. Refer to table below for all results as required.

2019 Microbiological Testing Completed as per Schedule 10, 11 and/or 12 of O. Reg 170/03					
<i>Location</i>	<i>Number of Samples</i>	<i>Range of E. Coli or Fecal Results (#-#)</i>	<i>Range of Total Coliform Results (#-#)</i>	<i>Number of HPC Samples</i>	<i>Range of HPC Results (#-#)</i>
Raw	53	0 - 68	2 - 144	0	
Treated	53	0 - 0	0 - 0	53	< 2 - 46
Distribution	175	0 - 0	0 - 0	161	< 2 - 18

2019 Operational Testing as per Schedule 7, 8 and or 9 of O. Reg 170/03		
<i>Parameter</i>	<i>Number of Grab Samples</i>	<i>Range of Results unit of measure is mg/L unless otherwise indicated (#-#)</i>
Raw Turbidity	255	0.70 ntu – 21.30 ntu
Treated Turbidity	Continuous	0.02 ntu - 2.00 ntu
Free Chlorine	Continuous	0.88 – 3.33
Fluoride <i>(If the DWS provides fluoridation)</i>		n/a



Additional Sampling or Testing in Accordance with System Approval Requirement or Order				
Date of Order or Approval Amendment	Parameter	Date Sampled	Result	Unit of Measure
n/a				

2019 Summary of Inorganic Parameters Tested					
Annual sampling or most recent result (1ppm = 1mg/L)					
Parameter	Sample Date	Standard (maximum concentration)	Result Value	Unit of Measure	Exceedance
Antimony	June 26, 2019	0.006 mg/L	< 0.0001	mg/L	No
Arsenic	June 26, 2019	0.01 mg/L	0.0002	mg/L	No
Barium	June 26, 2019	1.0 mg/L	0.009	mg/L	No
Boron	June 26, 2019	5.0 mg/L	< 0.005	mg/L	No
Cadmium	June 26, 2019	0.005 mg/L	< 0.000015	mg/L	No
Chromium	June 26, 2019	0.05 mg/L	< 0.002	mg/L	No
Lead	September 14, 2017	0.01mg/L	0.00045	mg/L	No
Mercury	June 26, 2019	0.001mg/L	< 0.00002	mg/L	No
Selenium	June 26, 2019	0.01 mg/L	< 0.001	mg/L	No
Uranium	June 26, 2019	0.02 mg/L	< 0.00005	mg/L	No
Fluoride	July 11, 2017	1.5 mg/L	< 0.1	mg/L	No
Nitrite	January 13, 2020	1.0 mg/L	< 0.1	mg/L	No
Nitrate	January 13, 2020	10.0 mg/L	0.2	mg/L	No

Location/ Type	Number of Samples	Range of Lead Results (#-#)	Range of Alkalinity Results (#-#)	Average pH	Exceedance
Unit of Measure		mg/L	mg/L		
Residential Plumbing					
Non-Residential Plumbing					
Distribution	6		52-82	6.90	0

2019 Summary of Organic Parameters Tested					
Annual sampling or most recent result (1ug/L = 0.001mg/L)					
Parameter	Sample Date	Standard (maximum concentration)	Result Value	Unit of Measure	Exceedance
Alachlor	June 26, 2019	0.005 mg/L	< 0.3	ug/L	No
Atrazine + N-dealkylated metabolites	June 26, 2019	0.005 mg/L	< 0.5	ug/L	No
Azinphos-methyl	June 26, 2019	0.02 mg/L	< 1	ug/L	No
Benzene	June 26, 2019	0.001 mg/L	< 0.5	ug/L	No
Benzo(a)pyrene	June 26, 2019	0.00001 mg/L	< 0.005	ug/L	No
Bromoxynil	June 26, 2019	0.005 mg/L	< 0.5*	ug/L	No

2019 Summary of Organic Parameters Tested					
<i>Annual sampling or most recent result</i>					
<i>(1ug/L = 0.001mg/L)</i>					
<i>Parameter</i>	<i>Sample Date</i>	<i>Standard (maximum concentration)</i>	<i>Result Value</i>	<i>Unit of Measure</i>	<i>Exceedance</i>
<i>Carbaryl</i>	June 26, 2019	0.09 mg/L	< 3	ug/L	No
<i>Carbofuran</i>	June 26, 2019	0.09 mg/L	< 1	ug/L	No
<i>Carbon Tetrachloride</i>	June 26, 2019	0.002 mg/L	< 0.2	ug/L	No
<i>Chlorpyrifos</i>	June 26, 2019	0.09 mg/L	< 0.5	ug/L	No
<i>Diazinon</i>	June 26, 2019	0.02 mg/L	< 1	ug/L	No
<i>Dicamba</i>	June 26, 2019	0.12 mg/L	< 10*	ug/L	No
<i>1,2-Dichlorobenzene</i>	June 26, 2019	0.2 mg/L	< 0.5	ug/L	No
<i>1,4-Dichlorobenzene</i>	June 26, 2019	0.005 mg/L	< 0.2	ug/L	No
<i>1,2-Dichloroethane</i>	June 26, 2019	0.005 mg/L	< 0.5	ug/L	No
<i>1,1-Dichloroethylene (vinylidene chloride)</i>	June 26, 2019	0.014 mg/L	< 0.5	ug/L	No
<i>Dichloromethane</i>	June 26, 2019	0.05 mg/L	< 5	ug/L	No
<i>2-4 Dichlorophenol</i>	June 26, 2019	0.9 mg/L	< 0.1	ug/L	No
<i>2,4-Dichlorophenoxy acetic acid (2,4-D)</i>	June 26, 2019	0.1 mg/L	< 10	ug/L	No
<i>Diclofop-methyl</i>	June 26, 2019	0.009 mg/L	< 0.9	ug/L	No
<i>Dimethoate</i>	June 26, 2019	0.02 mg/L	< 1	ug/L	No
<i>Diquat</i>	June 26, 2019	0.07 mg/L	< 5	ug/L	No
<i>Diuron</i>	June 26, 2019	0.15 mg/L	< 5	ug/L	No
<i>Glyphosate</i>	June 26, 2019	0.28 mg/L	< 25	ug/L	No
<i>Haloacetic Acid</i>	January 13, 2020	0.08 mg/L	49.2	ug/L	No
<i>Malathion</i>	June 26, 2019	0.19 mg/L	< 5	ug/L	No
<i>2 Methyl-4 Chlorophenoxyacetic (MCPA)</i>	June 26, 2019	0.1 mg/L	< 10	ug/L	No
<i>Metolachlor</i>	June 26, 2019	0.05 mg/L	< 3	ug/L	No
<i>Metribuzin</i>	June 26, 2019	0.08 mg/L	< 3	ug/L	No
<i>Monochlorobenzene</i>	June 26, 2019	0.08 mg/L	< 0.5	ug/L	No
<i>Paraquat</i>	June 26, 2019	0.01 mg/L	< 1	ug/L	No
<i>Pentachlorophenol</i>	June 26, 2019	0.06mg/L	< 0.1*	ug/L	No
<i>Phorate</i>	June 26, 2019	0.002 mg/L	< 0.3	ug/L	No
<i>Picloram</i>	June 26, 2019	0.19 mg/L	< 20	ug/L	No
<i>Polychlorinated Biphenyls (PCB)</i>	June 26, 2019	0.003 mg/L	< 0.05	ug/L	No

2019 Summary of Organic Parameters Tested					
Annual sampling or most recent result (1ug/L = 0.001mg/L)					
Parameter	Sample Date	Standard (maximum concentration)	Result Value	Unit of Measure	Exceedance
Prometryne	June 26, 2019	0.001 mg/L	< 0.1	ug/L	No
Simazine	June 26, 2019	0.01 mg/L	< 0.5	ug/L	No
THM	January 13, 2020	0.100 mg/L	59.33	ug/L	No
Terbufos	June 26, 2019	0.001 mg/L	< 0.3	ug/L	No
Tetrachloroethylene	June 26, 2019	0.03 mg/L	< 0.5	ug/L	No
2,3,4,6-Tetrachlorophenol	June 26, 2019	0.1 mg/L	< 0.1	ug/L	No
Triallate	June 26, 2019	0.23 mg/L	< 10	ug/L	No
Trichloroethylene	June 26, 2019	0.005 mg/L	< 0.5	ug/L	No
2,4,6-Trichlorophenol	June 26, 2019	0.005 mg/L	< 0.1	ug/L	No
Trifluralin	June 26, 2019	0.045 mg/L	< 0.5	ug/L	No
Vinyl Chloride	June 26, 2019	0.002 mg/L	< 0.2	ug/L	No

* note from lab for potential low bias due to sample matrix interferences

Inorganic or Organic Parameters that exceeded half the standard prescribed in Schedule 2 of Ontario Drinking Water Quality Standards			
Only complete if category is large municipal residential, small municipal residential, large municipal non-residential, small municipal non-residential, large non-municipal non-residential			
Parameter	Result Value	Unit of Measure	Date of Sample
n/a			

Section 6: Significant Expenses Incurred

No significant expenses were

- Install required equipment
- Repair required equipment
- Replace required equipment
- None during this period

Briefly Describe Incident and/or Expenses Incurred:

No.	Project Name	Description	Cost
1	Distribution Residential Meter Replacement	<ul style="list-style-type: none"> • Distribution meters to be replaced over 10-year period commencing in 2016, with estimated 150 meters to be changed per year. • 111 meters were installed in 2019. 	\$ 3,500
2	Watermain Replacement and Installation	<ul style="list-style-type: none"> • Remove existing 100mm water main from Mill Square and Ottawa St between Main St South and Kenyon St West. Install new 150mm watermain, isolation valves, fire hydrants and tie in at Main St South. • Remove existing 19mm water service line from Catherine Frasier St between Harrison St and Ottawa St and install 150mm watermain on Catherine Frasier St with tie in on Harrison and Ottawa St. 	\$ 180,213
3	Watermain Relining	<ul style="list-style-type: none"> • Contracted work to re-line watermain located on Main St North under the railway due to multiple water main breaks in the area over last few years. • Main was isolated, lined, cured, disinfected tested and placed back in service. 	\$ 65,000



No.	Project Name	Description	Cost
4	Maxville Water Project	<ul style="list-style-type: none"> Construction of remaining distribution system in Maxville village. Flush, pressure test, disinfect and perform biological testing. 	\$ 2.8 Million
		<ul style="list-style-type: none"> Construction of remaining transmission line between Alexandria and Maxville. Flush, pressure test, disinfect and perform biological testing. 	\$ 5 Million
		<ul style="list-style-type: none"> Construction of booster station and installation of all process equipment and chemicals. Commissioning of all equipment. 	\$ 1.7 Million
		<ul style="list-style-type: none"> Construction of the Water Tower in Maxville and all piping. 	\$ 939,231
		<ul style="list-style-type: none"> Commencement of the construction upgrades within the Alexandria Water Treatment Plant to increase raw water treatment processes due to the increased water demanded. 	\$ 631, 132
5	Water Tower Mixing System	<ul style="list-style-type: none"> Water tower in Alexandria was taken out of service to install new mixing system due to observed residual degradation in late summer early fall. Tower was isolated, drained, equipment was installed, work area was disinfected, tested and placed back in service. 	\$ 72,750
6	Water Treatment Plant Intake Repair	<ul style="list-style-type: none"> Contracted repair of intake line damaged by Hydro sub-contractor Temporary pumping equipment brought in to supply water plant with water until damage was repaired Drain All and diving team brought in to help locate and isolate piping during repair CCTV inspection was completed before and after repair 	\$ 34,000

Section 7: Compliance with Licenses, Permits, Approvals and Orders

The system is an approved system through the accreditation process that was rolled out by the Ministry of the Environment and Climate Control in 2011. The operating authority strives to remain compliant with the Drinking Water Quality Management Standard, the Safe Drinking Water Act and all associated procedures or a guideline. This approach is utilized for creating a multi-barrier approach to ensure safe drinking water.

The following table is a listing of all permits and or licenses that apply to this system:

<i>Description</i>	<i>Number</i>	<i>Version</i>	<i>Issue Date</i>	<i>Expiry Date</i>
Water Works License	181-101	2	March 22, 2016	March 21, 2021
Water Works Permit	181-201	3	March 22, 2016	March 21, 2021
Permit to Take Water	0512-8VVPRD		July 6, 2012	July 8, 2022

This system actively engages in all required internal and external auditing, as per the Drinking Water Management Standard. The latest external third-party surveillance audit was completed on November 12, 2019. The results indicated an effective system with 1 minor opportunity for improvement.

During this period, all raw water flows were compliant with all permits to take water and are currently at 45% of the allowable limit of the PTTW. All treated flows were well within the rated capacity for the system and as previously stated the system is currently only at 27% of the rated treated capacity. Furthermore, no operational limits were exceeded during this reporting timeframe.

All disinfection equipment was operated in such a manner that all license requirements were met at all times. The treatment system was operated at all times to ensure compliance with the Procedure for Disinfection of Drinking Water in Ontario.

All equipment was maintained as per operations manuals and/or calibrated annually by a certified technician.

Section 8: Non-Compliance with Licenses, Permits, Approvals and Orders

There was no instance of non-compliance in regard to regulatory requirements. During the watermain replacement project, through discussions with EOHU it was decided not to place residents on an official advisory during the water main replacement, as all steps for safeguarding water were in place. Residents were advised by the Township to use the same precautionary measures as a boil water during the construction phase as a precaution. All licensing permit and/or approval requirements were met during this reporting period. Furthermore, there were no orders or additional requirements issued to this system.

2019 Reported Incident in accordance to subsection 18(1) of the Safe Drinking Water Act or Schedule 16 of O. Reg 170/03					
<i>Incident Date</i>	<i>Parameter</i>	<i>Result</i>	<i>Unit of Measure</i>	<i>Corrective Action</i>	<i>Corrective Action Date</i>
n/a					

Section 9: Township of North Glengarry Endorsement of Summary Report

A copy of the report was presented to all members of the municipal council through the Committee of the Whole meeting held on February 19, 2020. The report was also made available to the public through the Township of North Glengarry website or upon individual request at the Main office, located at 90 Main St South in Alexandria, or at the Public Works Office, located at 63 Kenyon St West in Alexandria

This report has been endorsed by Sarah Huskinson, Chief Administrative Officer on behalf of Township of North Glengarry Council.

Section 8: Contact

All efforts have been made to provide accurate and up to date information in a relevant format. In the event that additional information is required please submit all verbal requests by phone at 613-525-3087; in writing by mail to 63 Kenyon St West. P.O. Box 700, Alexandria Ontario, K0C 1A0; or in writing by email to waterworks@northglengarry.ca

Appendix A:

2019 Alexandria Treated Flows (m³/day)

	<i>Jan</i>	<i>Feb</i>	<i>Mar</i>	<i>Apr</i>	<i>May</i>	<i>Jun</i>	<i>Jul</i>	<i>Aug</i>	<i>Sep</i>	<i>Oct</i>	<i>Nov</i>	<i>Dec</i>
1	2,352	2,659	2,182	1,989	2,095	1,933	1,397	3,015	1,961	3,015	2,525	1,621
2	2,616	2,711	2,221	1,570	2,098	1,400	2,250	2,512	1,901	2,812	2,822	2,031
3	2,282	2,269	2,127	1,908	1,710	1,898	2,015	2,037	2,095	2,993	2,148	1,649
4	2,486	2,412	2,116	1,961	2,405	1,882	2,855	2,228	1,948	2,594	2,602	2,761
5	2,743	2,537	2,384	1,484	2,526	2,226	2,411	1,930	1,818	3,164	2,088	1,828
6	2,501	2,096	2,336	1,884	2,373	2,469	1,872	2,102	1,961	2,646	2,534	1,489
7	2,674	2,291	2,325	2,180	2,409	2,265	2,320	2,444	1,861	2,555	2,075	1,428
8	2,389	2,454	2,371	1,288	2,962	2,064	2,106	2,107	2,476	2,717	2,041	1,584
9	2,591	2,491	2,564	2,135	2,494	2,455	2,622	1,912	2,301	2,754	1,755	2,210
10	2,327	2,317	2,353	1,770	3,176	2,521	2,093	1,748	2,209	3,104	1,938	2,068
11	2,623	2,514	2,201	2,257	2,538	1,662	2,374	2,119	2,262	2,404	2,009	1,897
12	2,993	1,947	2,018	1,908	2,010	2,397	2,169	2,236	2,186	1,825	2,091	1,840
13	2,490	2,184	2,296	2,031	2,141	2,434	2,066	1,882	1,885	2,304	1,680	1,646
14	2,648	2,355	2,365	1,791	1,780	2,338	1,766	2,282	1,687	2,823	1,769	2,704
15	2,887	2,499	2,330	1,825	2,045	1,786	2,275	2,151	1,376	2,001	2,705	2,816
16	2,867	2,419	2,212	1,964	2,037	2,330	1,799	1,829	1,643	1,988	2,550	1,860
17	2,751	2,026	2,272	1,863	1,701	2,494	2,343	2,378	1,926	2,131	1,589	959
18	2,693	2,207	2,101	1,829	1,684	2,127	2,371	1,901	1,914	2,484	2,247	1,762
19	2,415	2,345	2,185	1,755	1,560	2,004	2,498	2,102	2,011	2,292	2,736	1,905
20	2,202	2,376	2,335	1,766	1,620	1,831	1,713	2,382	1,950	2,426	2,394	1,272
21	2,217	2,605	1,836	1,895	2,058	1,530	2,052	1,741	3,022	2,880	2,428	1,556
22	2,424	2,134	2,389	2,055	2,087	2,574	2,644	2,345	3,399	2,696	1,849	2,121
23	2,440	2,362	2,419	1,887	2,136	2,096	2,048	2,279	2,583	2,339	2,341	1,467
24	2,399	2,131	1,972	1,877	1,977	1,411	2,177	2,035	1,916	2,437	1,796	1,250
25	2,415	2,457	2,448	1,812	1,885	1,871	2,007	1,899	2,327	3,066	2,319	1,258
26	2,622	2,322	1,758	2,131	1,965	2,831	2,094	2,479	2,606	2,141	2,881	1,339
27	2,743	2,513	1,781	1,884	1,686	2,635	2,025	2,386	2,769	2,635	2,430	2,665
28	2,222	2,365	1,634	1,948	2,166	1,983	2,290	1,927	2,848	2,596	2,969	1,945
29	2,831		2,066	1,955	2,123	1,791	2,700	1,776	2,909	2,426	2,706	2,399
30	2,597		2,100	1,725	1,963	1,957	1,642	2,449	2,860	2,977	2,453	1,693
31	2,685		1,612		2,440		1,906	1,542		2,886		1,612
Minimum	2,202	1,947	1,612	1,288	1,560	1,400	1,397	1,542	1,376	1,825	1,589	959
Average	2,552	2,357	2,171	1,878	2,124	2,107	2,158	2,134	2,220	2,584	2,282	1,827
Maximum	2,993	2,711	2,564	2,257	3,176	2,831	2,855	3,015	3,399	3,164	2,969	2,816
Total	79,124	65,997	67,307	56,326	65,851	63,195	66,901	66,157	66,611	80,110	68,470	56,636

2019 Annual Treated Flows Summary	959
	2,199
	3,399
	802,684

Appendix B:

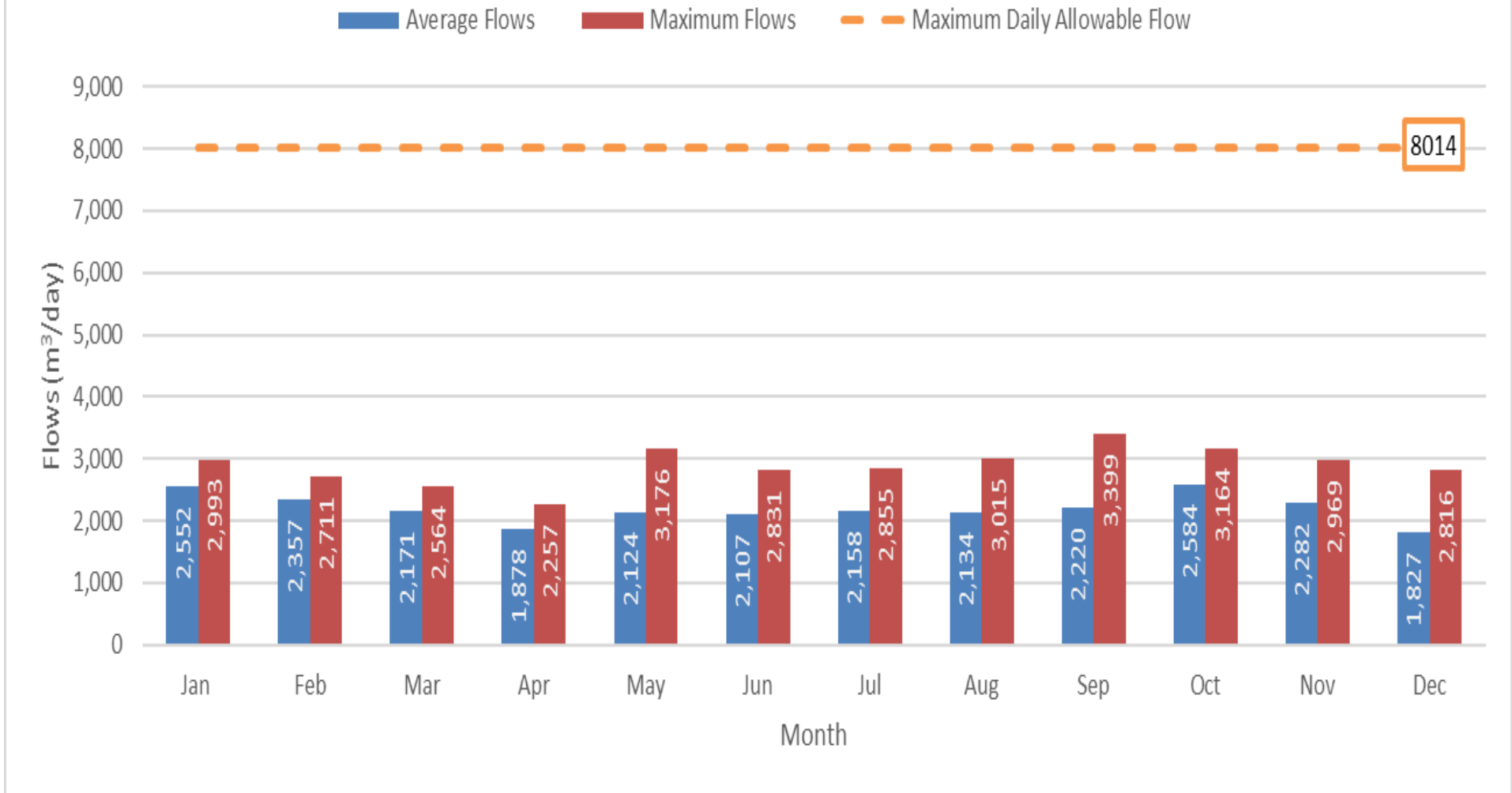
2019 Alexandria Maximum Instantaneous Flows (m³/sec)

	<i>Jan</i>	<i>Feb</i>	<i>Mar</i>	<i>Apr</i>	<i>May</i>	<i>Jun</i>	<i>Jul</i>	<i>Aug</i>	<i>Sep</i>	<i>Oct</i>	<i>Nov</i>	<i>Dec</i>
1	0.0426	0.0464	0.0427	0.0420	0.0429	0.0406	0.0380	0.0380	0.0450	0.0435	0.0340	0.0424
2	0.0424	0.0433	0.0429	0.0427	0.0430	0.0409	0.0380	0.0380	0.0446	0.0409	0.0435	0.0422
3	0.0646	0.0424	0.0432	0.0427	0.0431	0.0415	0.0400	0.0380	0.0447	0.0438	0.0435	0.0447
4	0.0424	0.0429	0.0425	0.0426	0.0422	0.0421	0.0380	0.0380	0.0450	0.0443	0.0466	0.0424
5	0.0421	0.0435	0.0437	0.0427	0.0423	0.0513	0.0380	0.0380	0.0457	0.0438	0.0449	0.0425
6	0.0425	0.0438	0.0428	0.0430	0.0427	0.0411	0.0380	0.0380	0.0453	0.0448	0.0453	0.0419
7	0.0423	0.0432	0.0424	0.0427	0.0460	0.0417	0.0380	0.0380	0.0448	0.0438	0.0438	0.0419
8	0.0424	0.0431	0.0425	0.0429	0.0447	0.0420	0.0380	0.0380	0.0447	0.0441	0.0446	0.0419
9	0.0420	0.0430	0.0421	0.0426	0.0434	0.0421	0.0380	0.0505	0.0552	0.0432	0.0439	0.0417
10	0.0433	0.0432	0.0419	0.0425	0.0776	0.0430	0.0380	0.0380	0.0451	0.0386	0.0442	0.0434
11	0.0424	0.0429	0.0419	0.0439	0.0785	0.0428	0.0390	0.0380	0.0448	0.0430	0.0443	0.0429
12	0.0421	0.0655	0.0425	0.0426	0.0417	0.0430	0.0380	0.0380	0.0453	0.0434	0.0447	0.0416
13	0.0424	0.0430	0.0421	0.0429	0.0416	0.0441	0.0380	0.0450	0.0447	0.0434	0.0443	0.0418
14	0.0426	0.0430	0.0421	0.0424	0.0414	0.0429	0.0380	0.0446	0.0664	0.0436	0.0450	0.0420
15	0.0448	0.0430	0.0421	0.0425	0.0425	0.0422	0.0390	0.0449	0.0452	0.0437	0.0409	0.0639
16	0.0464	0.0427	0.0424	0.0429	0.0386	0.0424	0.0380	0.0445	0.0543	0.0434	0.0425	0.0418
17	0.0443	0.0429	0.0421	0.0426	0.0403	0.0432	0.0380	0.0453	0.0608	0.0440	0.0467	0.0437
18	0.0428	0.0428	0.0422	0.0424	0.0410	0.0421	0.0380	0.0446	0.0465	0.0444	0.0427	0.0414
19	0.0427	0.0449	0.0443	0.0425	0.0409	0.0422	0.0380	0.0427	0.0785	0.0437	0.0441	0.0425
20	0.0423	0.0429	0.0419	0.0425	0.0406	0.0420	0.0380	0.0448	0.0746	0.0437	0.0368	0.0417
21	0.0426	0.0433	0.0422	0.0426	0.0416	0.0419	0.0380	0.0447	0.0577	0.0434	0.0433	0.0441
22	0.0450	0.0431	0.0420	0.0436	0.0413	0.0423	0.0380	0.0446	0.0649	0.0432	0.0433	0.0417
23	0.0425	0.0429	0.0419	0.0439	0.0418	0.0423	0.0380	0.0450	0.0498	0.0445	0.0430	0.0424
24	0.0425	0.0431	0.0420	0.0427	0.0418	0.0423	0.0380	0.0453	0.0597	0.0433	0.0424	0.0424
25	0.0423	0.0432	0.0423	0.0428	0.0409	0.0450	0.0380	0.0450	0.0491	0.0403	0.0442	0.0418
26	0.0422	0.0438	0.0433	0.0426	0.0418	0.0462	0.0380	0.0446	0.0685	0.0435	0.0437	0.0419
27	0.0422	0.0429	0.0420	0.0427	0.0414	0.0499	0.0380	0.0445	0.0444	0.0433	0.0432	0.0430
28	0.0425	0.0428	0.0424	0.0422	0.0491	0.0500	0.0380	0.0452	0.0437	0.0439	0.0386	0.0426
29	0.0453		0.0420	0.0426	0.0641	0.0380	0.0380	0.0446	0.0409	0.0439	0.0400	0.0420
30	0.0425		0.0421	0.0431	0.0421	0.0380	0.0380	0.0444	0.0454	0.0388	0.0428	0.0487
31	0.0431		0.0423		0.0632		0.0380	0.0448		0.0400		0.0452
Minimum	0.042	0.042	0.042	0.042	0.039	0.038	0.038	0.038	0.041	0.039	0.034	0.041
Average	0.044	0.044	0.042	0.043	0.046	0.043	0.038	0.043	0.052	0.043	0.043	0.043
Maximum	0.065	0.066	0.044	0.044	0.078	0.051	0.040	0.051	0.078	0.045	0.047	0.064

2019 Annual Instantaneous Flows Summary
0.034
0.044
0.078

Appendix C

Comparison of the Average and Maximum Flow Rates for the Alexandria Drinking Water Treatment Plant



Appendix D

COMPLIANCE STATUS REPORT SURFACE WATER TREATMENT

Year: 2019
Municipality: North Glengarry
System Number 220001030
Water Source: Alexandria Mill Pond
Design Cap: 8014 m³
Description: Surface Water Supply with Conventional Water Treatment

Month	Flow						Effluent Physical/Chem Parameters				Chemical Usage		Disinfection		Distribution					
	Total Treated Flow	Avg Treated Daily Flow	Max Treated Daily Flow	Total Treated Flow	Avg Treated Daily Flow	Max Treated Daily Flow	Avg. Treated Turb.	Avg. Treated Colour	Avg. Nitrate	Avg. Nitrite	PAX XL-6 Usage	Cl ₂ Usage	Min. Cl ₂ Res	Avg. Cl ₂ Res	Min. Combined Chlorine (mg/L)	Max. Combined Chlorine (mg/L)	THM	THM Running Avg.	HAA	HAA Running Avg.
	m ³	m ³	m ³	m ³	m ³	m ³	NTU	ACU	mg/L	mg/L	m ³	Kg	mg/L	mg/L	mg/L	mg/L	ug/L	ug/L	ug/L	ug/L
January	90,594	2,922	3,367	79,124	2,552	2,993	0.06	0	< 0.10	< 0.10	15.0	427.4	0.95	1.63	1.46	2.82	82.0	73.5	40.5	62.31
February	76,382	2,728	3,287	65,997	2,357	2,711	0.04	0			10.6	587.5	1.21	1.60	1.23	2.51				
March	77,822	2,510	2,936	67,307	2,171	2,564	0.03	0			10.2	636.3	1.18	1.69	1.41	2.82				
April	66,505	2,217	2,852	56,326	1,878	2,257	0.03	0	< 0.10	< 0.10	8.4	264.0	1.41	1.91	0.26	2.68	53.0	80.8	29.25	64.51
May	76,524	2,469	3,046	65,851	2,124	3,176	0.06	0			8.9	255.2	1.35	1.73	0.84	2.35				
June	73,216	2,441	2,981	63,195	2,107	2,831	0.07	0			8.6	297.8	1.35	1.77	0.48	2.57				
July	75,240	2,427	3,201	66,901	2,158	2,855	0.08	0	< 0.10	< 0.10	8.3	367.7	0.88	1.72	0.60	2.77	69.5	66.8	61.05	48.3
August	76,929	2,482	3,379	66,157	2,134	3,015	0.09	0			8.5	402.5	1.02	1.75	0.61	2.86				
September	76,589	2,553	3,637	66,611	2,220	3,399	0.07	0			9.4	345.6	1.39	1.79	0.79	2.94				
October	88,817	2,865	3,298	80,110	2,584	3,164	0.06	0	0.10	< 0.10	10.8	390.2	1.36	1.88	1.67	2.96	60.5	66.2	57.9	47.06
November	78,249	2,608	3,091	68,470	2,282	2,969	0.07	0			11.2	330.5	1.14	1.76	1.52	2.97				
December	64,644	2,085	3,082	56,636	1,827	2,816	0.06	0			10.3	277.1	1.29	1.77	1.52	2.84				
Total	921,510			802,684							120.0	4,581.8								
Average	76,793	2,526			2,200		0.06	0	0.1	< 0.1	10.0	381.8	1.21	1.75	1.03	2.76				
Maximum	90,594		3,637			3,399	0.09	0			15.0	636.3								
Criteria			5,616			8,014			10	1					0.25	3.00			100	
Meets ODWO			Yes			Yes			Yes	Yes					Yes	Yes			Yes	

	Raw Total Coliform				Raw E. Coli				Treated Total Coliform				Treated E. Coli				Treated HPC				Distribution Total Coliform				Distribution E. Coli				Distribution HPC			
	Count	Minimum	Maximum	Average	Count	Minimum	Maximum	Average	Count	Minimum	Maximum	Average	Count	Minimum	Maximum	Average	Count	Minimum	Maximum	Average	Count	Minimum	Maximum	Average	Count	Minimum	Maximum	Average	Count	Minimum	Maximum	Average
January	5	58.0	78.0	69.2	5	9	20	14.6	5	0	0	0	5	0	0	0	5	2.0	46.0	10.8	15	0	0	0	15	0	0	0	15	2.0	4.0	2.1
February	4	20.0	98.0	47.0	4	2	12	5	4	0	0	0	4	0	0	0	4	2.0	2.0	2.0	12	0	0	0	12	0	0	0	12	2.0	14.0	3.0
March	4	46.0	98.0	65.0	4	6	16	10.3	4	0	0	0	4	0	0	0	4	2.0	2.0	2.0	12	0	0	0	12	0	0	0	12	2.0	2.0	2.0
April	5	12.0	72.0	40.8	5	9.0	16.0	12.0	5	0	0	0	5	0	0	0	5	2.0	2.0	2.0	15	0	0	0	15	0	0	0	15	2.0	2.0	2.0
May	4	26.0	64.0	42.5	4	6.0	44.0	28.5	4	0	0	0	4	0	0	0	4	2.0	2.0	2.0	14	0	0	0	14	0	0	0	14	2.0	4.0	2.1
June	4	22.0	144.0	60.0	4	19.0	47.0	28.8	4	0	0	0	4	0	0	0	4	2.0	2.0	2.0	14	0	0	0	14	0	0	0	12	2.0	14.0	4.0
July	5	14.0	38.0	23.2	5	0.0	15.0	4.4	5	0	0	0	5	0	0	0	5	2.0	2.0	2.0	19	0	0	0	19	0	0	0	15	2.0	18.0	3.1
August	5	2.0	42.0	18.8	5	0.0	3.0	0.8	5	0	0	0	5	0	0	0	5	2.0	2.0	2.0	21	0	0	0	21	0	0	0	15	2.0	2.0	2.0
September	4	34	78	50.5	4	6	68	31	4	0	0	0	4	0	0	0	4	2.0	2.0	2.0	14	0	0	0	14	0	0	0	12	2.0	2.0	2.0
October	4	26	70	45.5	4	5	47	23.25	4	0	0	0	4	0	0	0	4	2.0	2.0	2.0	12	0	0	0	12	0	0	0	12	2.0	2.0	2.0
November	4	28	102	52.5	4	4	45	18.25	4	0	0	0	4	0	0	0	4	2.0	2.0	2.0	12	0	0	0	12	0	0	0	12	2.0	2.0	2.0
December	5	16	54	30.4	5	0	4	2.2	5	0	0	0	5	0	0	0	5	2.0	2.0	2.0	15	0	0	0	15	0	0	0	15	2.0	2.0	2.0
Total	53				53				53				53				53				175				175				161			