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Le centre celtique de l'Ontario

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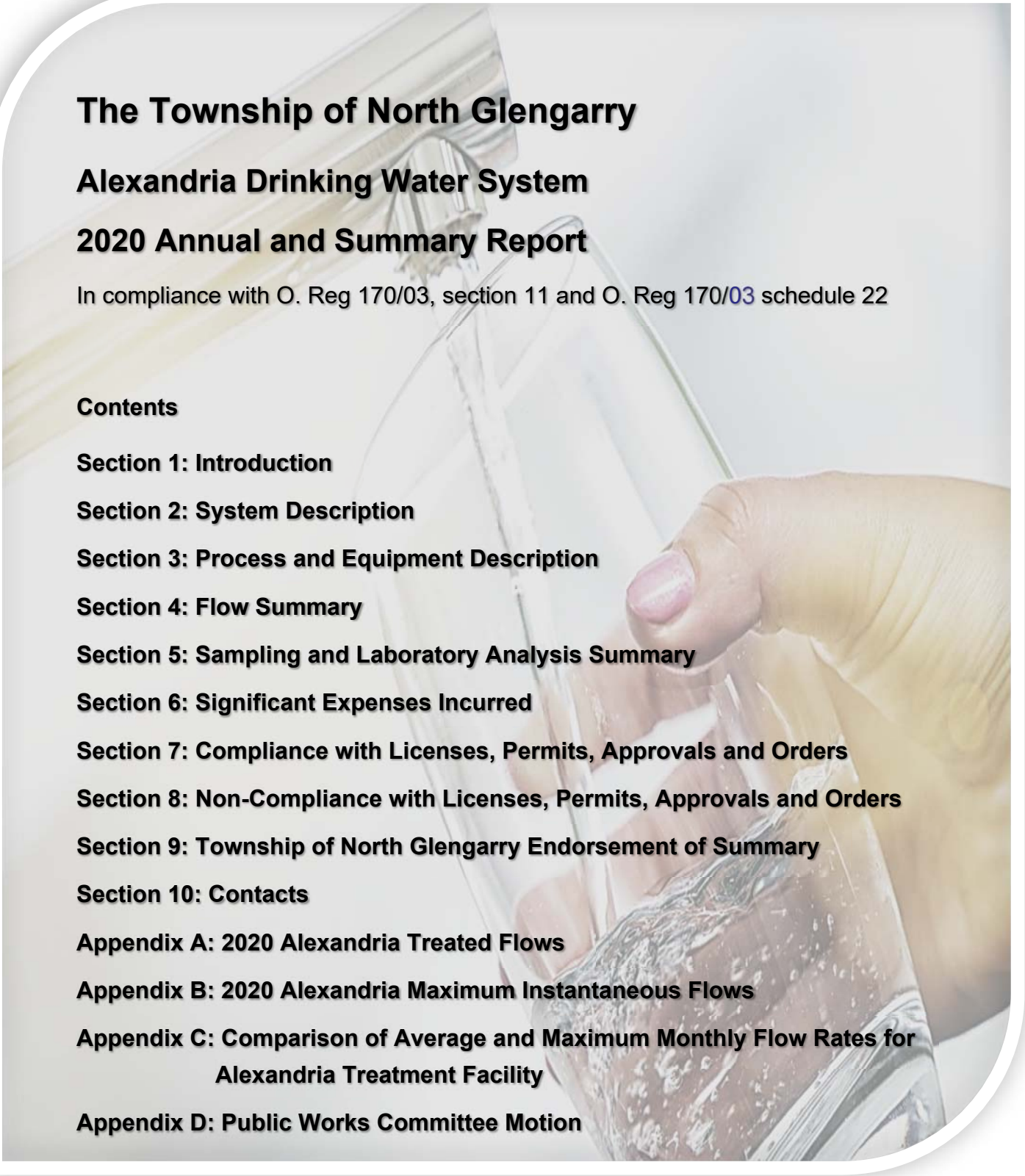


The Township of North Glengarry

Alexandria Drinking Water System

2020 Annual and Summary Report

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

Contents

Section 1: Introduction

This report is an annual summary of water quantity, quality system information, system operations and major expenditures for the Alexandria Drinking Water System during the reporting period of January 1, 2020 to December 31, 2020. 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 Drinking Water System is categorized as a large municipal residential system and is rated as a class 3 for water treatment. The system is made up of the following components, the Alexandria Water Treatment plant, 2 elevated storage towers, and 2 separate distribution systems connected via a transmission main and booster station.

The water treatment plant is located on Gernish St West within the town of Alexandria and the source water surface supply is obtained from the Mill Pond. It has a rated capacity to produce 8,014m^3/day for treated water, but a raw water intake limitation of 5,616m^3/day. The treatment processes are discussed in section 3.

The distribution system is compromised of 58.8kms of water pipes of varying sizes, isolation valves, pressure reducing valves, service connections and fire hydrants. The current system is located within the town boundaries of Alexandria and the village limits of Maxville, with a transmission main that runs 20.4kms between the two system. This system will be further discussed in section 3.

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, placed on top of a concrete slab housed in timber crib with screening.

A 350mm concrete pipe runs from the intake, east through the Island Park, then heads north on Park Avenue, before turning east again to enter the water plant in the low lift chamber.

The water flow from Mill Pond to the water plant is gravity based, and therefore is heavily influenced by water depth in the Mill Pond. The Mill Pond is part of a dam system controlled by the Raisin Region Conservation Authority, and as such the levels are monitored to ensure levels will be sufficient to supply the raw water demands.

Low Lift Chamber/Raw Water Well

The chamber/well is located in the southwest corner of the water treatment plant. There are two course screens, 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 vertical turbine pumps, rated at 6,200m^3/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.

Potassium permanganate is typically added to the raw well only during cold water temperatures in order to oxidize manganese, which generally only increase under ice cover. The chemical addition is only applied as required, based on treated and raw water monitoring.

Coagulation/Flocculation/Sedimentation

Coagulant and polymer feed systems are in place at the water treatment plant to aid in the sediment removal from the raw water. The coagulant feed enters the process just after the low lift pumps prior to an in-line static mixer and the polymer feed is located after mixer. The water then flows through a flow meter and past control valves before entering the first flocculation tank. Changes to the chemical dosing and mixing system were completed during 2020, as part of capital works project for the addition of the Maxville distribution system.

Flows are divided between flocculation tank 1 and 3, then continue into tanks 2 and 4, currently tanks 1 and 2 are run in series parallel to tanks 3 and 4, although the flow configuration can be modified by operational staff as needed based on flow conditions. Each tank is equipped with an agitator for slow and gentle mixing and level monitoring equipment is located at the outlet of tanks 2 and 4, which are used to control flow from the low lift pumps and monitor settling basin levels. All flows following the first flocculation tank are gravity based. In 2020 the water plant was expanded as a part of the capital works project by the construction of flocculation tanks 3 and 4, the addition of control valves, new flocculators and re-configuration or addition of water piping.

Process water from the flocculation tanks 2 and 4 are directed into a common header and then into settling basins, these basins are used to reduce flows and allow the sediment and or floc to fall out of suspension. The settling basins are compromised of 4 concrete tanks operated in parallel, which contain a baffle wall, tube settlers to direct water flow and a carriage mounted sludge collection system for sludge removal. The sludge removal program is run through the SCADA system and is based on amount of water treated through the filters, which can be adjusted as required. In 2020, each settling basins underwent works to remove the pre-existing benching, replacement of baffle walls and the installation of the new sludge collection systems, also as part of the capital works project.

Filtration

The filtration system consists of four filters operating in parallel, each having a surface area of 11.3m^2 and the capability of filtering a maximum flow of 2003m^2/day. As a part of the capital upgrades in 2020 all filter media is now composed of GAC and sand; filters contain a new surface wash system and a stainless-steel underdrain system. All filters are so equipped with loss or head monitoring, turbidity monitoring and water level monitoring. Effluent flow from filters are directed to the clearwell for disinfection through a main header pipe.

The backwash system is comprised of 2 pumps, duty and standby, controlled by variable frequency drives, a SCADA program for process control, valves, surface wash systems and all associated piping. The SCADA program monitors for various trigger points which would initiate an automatic backwash process, including time in operation, turbidity, and filter loss of head. Although the system is mainly run automatically, manual operations can be completed, or process points can be adjusted by staff as required. All effluent water is directed to the sludge holding tank, where the wastewater is directed to the sanitary sewer system, of which flows are controlled by a manual gate valve.

Disinfection

Chlorine gas is used as the only disinfectant in the water treatment process and is injected into the header pipe from the filters prior to entering the clearwell. The actual chlorination system consists of two vacuum regulated chlorinators, chemical lines, water piping, isolation valves, weight scales, cylinder selection switch, and four 68lbs chlorine cylinders, with two in service at a time. Chlorine cylinders are manually switched over by operational staff using all PPE and safety processes required.

The clearwell is divided into 2 wells (east and west) and each well is divided into smaller sections, which are labelled 1-4. The wells are interconnected through piping or sluice gate opening, controlled through manual valve operations. Influent water enters clearwell 4 and travels towards clearwell 1 before being discharged into the distribution, which allows for the appropriate contact time required.

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 combine 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. 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 under an emergency or if all the disinfection requirements are met, as per the Disinfection Procedure.

Distribution

The Alexandria distribution system is categorized as a class 2 distribution system. It is comprised of distribution piping in within Alexandria and Maxville.

The section within Alexandria contains 28.2kms of water mains of varying sizes, a 3,000m^3 capacity elevated storage tank, located in the northwest section of Alexandria, 145 fire hydrants and approximately 1,500 service connections. The Maxville distribution system is made up of 10.2kms of water mains, a 1,500m^3 capacity elevated storage tank, located on the southern boundary of Maxville, 82 fire hydrants and approximately 450 service connections. The two elevated storage are utilized for pressure monitoring, water storage, water supply and are both equipped with flow metering and residual monitoring equipment.

A 20.4 kms transmission main ties the 2 distribution systems together. The transmission main contains 17 fires hydrants, 32 air relief valves and a booster station, which is used to supply water to the Maxville Water Tower and to boost chloramine residuals. The transmission main, booster station and Maville distribution system were placed into service in early January 2020, as part of the Maxville Water Project.

Automated Monitoring and Control

A fully automated SCADA system was installed in 2011 and in 2020 it the system was upgraded and expanded to include the Maxville Booster Station and Maxville Water Tower. This system is capable of monitoring, controlling, and recording all the plant processes and data, such as flows, filter backwash, chemical dosing and parameter monitoring. The system is also fully alarmed with multiple alarm set points, so that if any parameter 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

An 175kW diesel powered generator is located at the water treatment plant and is equipped with transfer switch, for automatic transition during the event of utility power fail. The generator power can also be transferred to the North Glengarry main office if required.

An 85kW propane generator is in place at the Maxville Booster Station and is equipped with automatic transfer switch.

An 18kW propane generator is in place at each water tower and is equipped with automatic transfer switch.

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 was not be operated to exceed the rated capacities 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 2020 is calculated to be 1,652 m^3 and the maximum treated daily flow for the year was reported to be 2,874 m^3. This represents 20.6% of the total plant rated capacity. Refer to the appendices for full 2020 data summary

2020 Treated Flow Summary	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Maximum Daily Flow (m^3)	1,969	2,380	1,983	2,056	2,583	2,874	2,268	2,847	2,437	1,880	1,975	1,928
Monthly Average Flow (m^3)	1,602	1,544	1,473	1,485	1,647	1,910	1,923	1,914	1,715	1,621	1,495	1,495
Monthly Average Daily Maximum Instantaneous Flow (L/s)	0.041	0.040	0.041	0.040	0.039	0.039	0.038	0.037	0.037	0.037	0.036	0.039
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, Conservation and Parks requirements. Refer to table below for all results as required.

2020 Microbiological Testing Completed as per Schedule 10, 11 and/or 12 of O. Reg 170/03					
Location	Number of Samples	Range of E. Coli or Fecal Results (#-#)	Range of Total Coliform Results (#-#)	Number of HPC Samples	Range of HPC Results (#-#)
Raw Water	52	0 - 38	0-53	0	
Treated Water	59	0 - 0	0 - 0	51	< 2 - 2
Distribution Water	444	0 - 8	0 - 10	361	< 2 - 166

2020 Operational Testing as per Schedule 7, 8 and or 9 of O. Reg 170/03		
Parameter	Number of Samples	Range of Results (#-#)
Raw Turbidity	241	0.35 ntu – 15.9 ntu
Free Chlorine	continuous monitoring	0.48 mg/L– 3.34 mg/L
Fluoride (If the DWS provides fluoridation)	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				

Summary of 2020 Inorganic Sampling Results (1ppm = 1mg/L)					
Parameter	Sample Date	Standard (maximum concentration)	Result Value	Unit of Measure	Exceedance
Antimony	June 15, 2020	0.006 mg/L	< 0.0001	mg/L	No
Arsenic	June 15, 2020	0.01 mg/L	0.0002	mg/L	No
Barium	June 15, 2020	1.0 mg/L	0.0011	mg/L	No
Boron	June 15, 2020	5.0 mg/L	0.006	mg/L	No
Cadmium	June 15, 2020	0.005 mg/L	< 0.000015	mg/L	No
Chromium	June 15, 2020	0.05 mg/L	< 0.002	mg/L	No
Lead	September 14, 2020	0.01mg/L	0.00006	mg/L	No
Mercury	June 15, 2020	0.001mg/L	< 0.00002	mg/L	No
Selenium	June 15, 2020	0.01 mg/L	< 0.001	mg/L	No
Uranium	June 15, 2020	0.02 mg/L	< 0.00005	mg/L	No
Fluoride	July 11, 2017	1.5 mg/L	< 0.1	mg/L	No
Nitrite	January 18, 2021	1.0 mg/L	< 0.1	mg/L	No
Nitrate	January 18, 2021	10.0 mg/L	< 0.1	mg/L	No

Summary of 2020 Lead Sampling results (1ppm = 1mg/L)							
Location & Type	Number of Samples	Lead Range (#-#)	Unit of Measure	Alkalinity Range (#-#)	Unit of Measure	Average pH	Exceedance
Residential Plumbing							
Non-Residential Plumbing							
Distribution	6	0.00002 – 0.00007	mg/L	52 - 98	mg/L	6.84	0

Summary of 2020 Organic Sampling Results (1µg/L = 0.001mg/L)					
Parameter	Sample Date	Standard (maximum concentration)	Result Value	Unit of Measure	Exceedance
Alachlor	June 15, 2020	0.005 mg/L	< 0.3	µg/L	No
Atrazine + N-dealkylated metobolites	June 15, 2020	0.005 mg/L	< 0.5	µg/L	No
Azinphos-methyl	June 15, 2020	0.02 mg/L	< 1	µg/L	No
Benzene	June 15, 2020	0.001 mg/L	< 0.5	µg/L	No
Benzo(a)pyrene	June 15, 2020	0.00001 mg/L	< 0.005	µg/L	No
Bromoxynil	June 15, 2020	0.005 mg/L	< 0.5	µg/L	No
Carbaryl	June 15, 2020	0.09 mg/L	< 3	µg/L	No
Carbofuran	June 15, 2020	0.09 mg/L	< 1	µg/L	No
Carbon Tetrachloride	June 15, 2020	0.002 mg/L	< 0.2	µg/L	No
Chlorpyrifos	June 15, 2020	0.09 mg/L	< 0.5	µg/L	No
Diazinon	June 15, 2020	0.02 mg/L	< 1	µg/L	No
Dicamba	June 15, 2020	0.12 mg/L	< 10	µg/L	No
1,2-Dichlorobenzene	June 15, 2020	0.2 mg/L	< 0.5	µg/L	No
1,4-Dichlorobenzene	June 15, 2020	0.005 mg/L	< 0.5	µg/L	No
1,2-Dichloroethane	June 15, 2020	0.005 mg/L	< 0.5	µg/L	No
1,1-Dichloroethylene (vinylidene chloride)	June 15, 2020	0.014 mg/L	< 0.5	µg/L	No
Dichloromethane	June 15, 2020	0.05 mg/L	< 5	µg/L	No
2-4 Dichlorophenol	June 15, 2020	0.9 mg/L	< 0.1	µg/L	No
2,4-Dichlorophenoxy acetic acid (2,4-D)	June 15, 2020	0.1 mg/L	< 10	µg/L	No
Diclofop-methyl	June 15, 2020	0.009 mg/L	< 0.9	µg/L	No
Dimethoate	June 15, 2020	0.02 mg/L	< 1	µg/L	No
Diquat	June 15, 2020	0.07 mg/L	< 5	µg/L	No
Diuron	June 15, 2020	0.15 mg/L	< 5	µg/L	No

2020 Summary of Organic Parameters Tested (1ug/L = 0.001mg/L)					
Parameter	Sample Date	Standard (maximum concentration)	Result Value	Unit of Measure	Exceedance
Glyphosate	June 15, 2020	0.28 mg/L	< 25	ug/L	No
Haloacetic Acid	January 13, 2020	0.08 mg/L	49.71	ug/L	No
Malathion	June 15, 2020	0.19 mg/L	< 5	ug/L	No
2 Methyl-4 Chlorophenoxyacetic (MCPA)	June 15, 2020	0.1 mg/L	< 10	ug/L	No
Metolachlor	June 15, 2020	0.05 mg/L	< 3	ug/L	No
Metribuzin	June 15, 2020	0.08 mg/L	< 3	ug/L	No
Monochlorobenzene	June 15, 2020	0.08 mg/L	< 0.5	ug/L	No
Paraquat	June 15, 2020	0.01 mg/L	< 1	ug/L	No
Pentachlorophenol	June 15, 2020	0.06mg/L	< 0.1	ug/L	No
Phorate	June 15, 2020	0.002 mg/L	< 0.3	ug/L	No
Picloram	June 15, 2020	0.19 mg/L	< 15	ug/L	No
Polychlorinated Biphenyls (PCB)	June 15, 2020	0.003 mg/L	< 0.05	ug/L	No
Prometryne	June 15, 2020	0.001 mg/L	< 0.1	ug/L	No
Simazine	June 15, 2020	0.01 mg/L	< 0.5	ug/L	No
THM	January 13, 2020	0.100 mg/L	57.31	ug/L	No
Terbufos	June 15, 2020	0.001 mg/L	< 0.3	ug/L	No
Tetrachloroethylene	June 15, 2020	0.03 mg/L	< 0.5	ug/L	No
2,3,4,6-Tetrachlorophenol	June 15, 2020	0.1 mg/L	< 0.1	ug/L	No
Triallate	June 15, 2020	0.23 mg/L	< 10	ug/L	No
Trichloroethylene	June 15, 2020	0.005 mg/L	< 0.5	ug/L	No
2,4,6-Trichlorophenol	June 15, 2020	0.005 mg/L	< 0.1	ug/L	No
Trifluralin	June 15, 2020	0.045 mg/L	< 0.5	ug/L	No
Vinyl Chloride	June 15, 2020	0.002 mg/L	< 0.2	ug/L	No

Inorganic or Organic Parameters that exceeded half the standard prescribed in Schedule 2 of Ontario Drinking Water Quality Standards			
Parameter	**Result Value**	**Unit of Measure**	**Date of Sample**
n/a			

Section 6: Significant Expenses Incurred

No significant expenses were

[X] Install required equipment
[X] Repair required equipment
[X] Replace required equipment
[ ] None during this period

Briefly Describe Incident and/or Expenses Incurred:

No.	Project Name	Description	Cost
1	Maxville Water Project	Maxville Distribution • Construction and disinfection of distribution system from 2018-2019. • Placed into service in 2020	$ 161,249
		Maxville Water Tower • Construction of water tower for distribution supply 2019 • Placed into service in 2020	$ 10,335
		Maxville Transmission Main • Construction and disinfection of transmission main between Alexandria and Maxville 2018-2019 • Placed into service in 2020	$ 93,454
		Maxville Booster Station • Construction of booster station and installation off all pumps, and monitoring equipment 2019-2020 • Placed into service in 2020	$ 52,456
		Alexandria Water Treatment Plant Upgrade • Construction of 2 additional flocculation tanks, including piping and valves • Replacement of sludge removal equipment • Replacement of all filter media, underdrain system, surface wash system, • Relocation and upgrades to chemical pump panels • SCADA system upgrade 2019-2020 • Replacement of exterior cladding and roof shingles • Placed into service in 2020	$ 3,809,739
2	Hydrant and Valve Replacement	• On-going annual project to replace defective or ageing equipment	$ 4,305
3	Re-lining of Feeder Main	• Main located between Park Ave and Harrison St, section between valves • Performed in conjunction with SDG Counties Program	$ 150,917
4	LLP220 refurbishment	• repair due to maintenance issues noted during inspection	$3,000

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, now known as Ministry of the Environment, Conservation and Parks, 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:

Description	*Number*	*Version*	*Issue Date*	*Expiry Date*
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.

During this period, all raw water flows were compliant with all permits to take water and are currently at 32.5% of the allowable limit. It has been noted that since the water plant upgrades have completed, less raw water taking has been noted due to process optimization of sludge removal process. All treated flows were well within the rated capacity for the system and as previously stated the system is currently only at 20.6% of the rated 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 1 instance of non-compliance in regard to regulatory requirements, which was a planned shut down for a water main replacement. All residents were placed on a temporarily overland water main prior to shut down and work commencement. All licensing requirements, permits limitations and/or approval requirements were met during this reporting period. Furthermore, there were no orders or additional requirements issued to this system.

2020 Reported Incident in accordance to subsection 18(1) of the Safe Drinking Water Act or Schedule 16 of O. Reg 170/03					
Incident Date	Parameter	Result	Unit of Measure	Corrective Action	Corrective Action Date
17-Jun-20	Total Coliform E. coli	10 8	count/100 mL	resample, flush, increase chlorine residual	28-Jun-20
18-Jun-20	Total Coliform E. coli	1 and 2 1 and 2	count/100 mL	resample, flush, increase chlorine residual	28-Jun-20
21-Jun-20	Total Coliform E. coli	5 5	count/100 mL	resample, flush, increase chlorine residual	28-Jun-20
23-Jun-20	Total Coliform E. coli	2 2	count/100 mL	resample, flush, increase chlorine residual	28-Jun-20
26-Jun-20	Total Coliform E. coli	1 and 1 1	count/100 mL	resample, flush, increase chlorine residual	28-Jun-20
15-Sep-20	Low Pressure	< 20	psi	planned work to reline water main, once work completed, line was super chlorinated, flushed and sampled as per requirements	02-Oct-20

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 Public Works Committee meeting held on March 16, 2021, see appendix D for motion. 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 Dean McDonald, Director of Public Works 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 dean@northglengarry.ca

Appendix A: Alexandria 2020 Daily Treated Flows (m^3/day)

	January	February	March	April	May	June	July	August	September	October	November	December
1	1,351	1,549	1,668	1,450	1,512	1,622	1,684	1,794	1,704	1,880	1,291	1,668
2	1,516	1,471	1,222	1,248	1,415	1,289	1,670	1,871	2,140	1,686	1,421	1,679
3	1,474	1,605	1,732	1,875	1,280	1,496	2,112	1,648	1,887	1,459	1,445	1,438
4	1,397	1,419	1,342	1,594	1,531	1,369	2,080	1,647	1,763	1,806	1,430	1,678
5	1,770	2,380	1,470	1,339	1,739	1,819	1,748	2,052	1,720	1,686	1,694	1,459
6	1,449	1,879	1,312	1,412	2,322	1,216	2,159	1,718	1,634	1,626	1,875	1,632
7	1,570	1,381	1,582	1,149	1,796	1,529	1,973	1,833	1,938	1,843	1,194	1,579
8	1,815	1,424	1,703	1,477	1,661	1,616	2,011	1,975	1,800	1,540	1,290	1,907
9	1,688	1,126	1,543	1,279	1,287	1,722	1,945	1,621	1,731	1,770	1,741	1,820
10	1,243	1,851	1,288	1,463	1,307	1,304	2,144	2,191	1,980	1,487	1,841	1,928
11	1,902	1,662	1,498	1,741	2,252	1,710	1,833	1,761	1,749	1,814	1,048	1,777
12	1,596	1,646	1,263	1,261	1,778	1,712	1,755	2,245	1,664	1,594	1,513	1,628
13	1,969	1,529	1,529	1,439	1,816	1,762	2,231	1,434	1,596	1,691	1,975	1,687
14	1,505	1,392	1,933	1,386	1,716	1,787	2,268	2,003	2,437	1,636	1,240	1,433
15	1,888	1,289	1,328	1,066	1,545	1,706	1,641	2,074	1,861	1,867	1,461	1,239
16	1,575	1,676	1,573	1,333	1,208	2,602	1,557	2,276	1,970	1,858	1,688	1,598
17	1,505	1,899	1,139	1,941	1,525	2,625	1,641	1,486	1,140	1,420	1,820	1,263
18	1,571	1,770	1,449	1,464	1,385	2,763	2,050	1,230	1,983	1,605	1,153	1,304
19	1,373	1,342	1,690	1,270	1,611	2,536	1,509	2,847	1,547	1,666	1,525	1,567
20	1,629	1,239	1,234	1,602	1,560	2,770	2,142	2,381	1,605	1,521	1,817	1,084
21	1,346	1,315	1,325	1,714	1,389	2,366	2,125	2,123	1,753	1,705	1,357	1,341
22	1,702	1,425	1,209	1,393	2,583	2,874	1,772	2,240	1,792	1,707	1,580	1,238
23	1,727	1,737	1,584	1,602	1,345	2,389	2,013	1,853	184	1,749	1,324	1,523
24	1,373	1,570	1,350	1,545	1,681	2,282	2,178	1,993	1,692	1,368	1,396	1,638
25	1,751	1,364	1,983	1,408	1,336	1,981	2,029	1,992	1,681	1,343	1,523	1,486
26	1,289	1,304	1,754	1,375	1,872	1,952	1,793	1,564	1,783	1,672	1,513	978
27	1,921	1,470	1,271	2,056	1,779	1,756	2,193	2,132	1,633	1,507	1,482	1,208
28	1,692	2,066	1,616	1,468	1,188	1,434	1,834	1,935	1,638	1,537	1,512	1,479
29	1,872	1,007	1,577	1,565	2,374	1,836	1,423	1,694	1,794	1,243	1,222	1,411
30	1,505		1,025	1,622	1,856	1,462	2,260	1,837	1,665	1,619	1,471	1,320
31	1,688		1,473		1,414		1,851	1,874		1,355		1,352
Minimum	1,243	1,007	1,025	1,066	1,188	1,216	1,423	1,230	184	1,243	1,048	978
Average	1,602	1,544	1,473	1,485	1,647	1,910	1,923	1,914	1,715	1,621	1,495	1,495
Maximum	1,969	2,380	1,983	2,056	2,583	2,874	2,268	2,847	2,437	1,880	1,975	1,928
Total	49,650	44,786	45,665	44,538	51,059	57,287	59,623	59,324	51,464	50,259	44,840	46,343

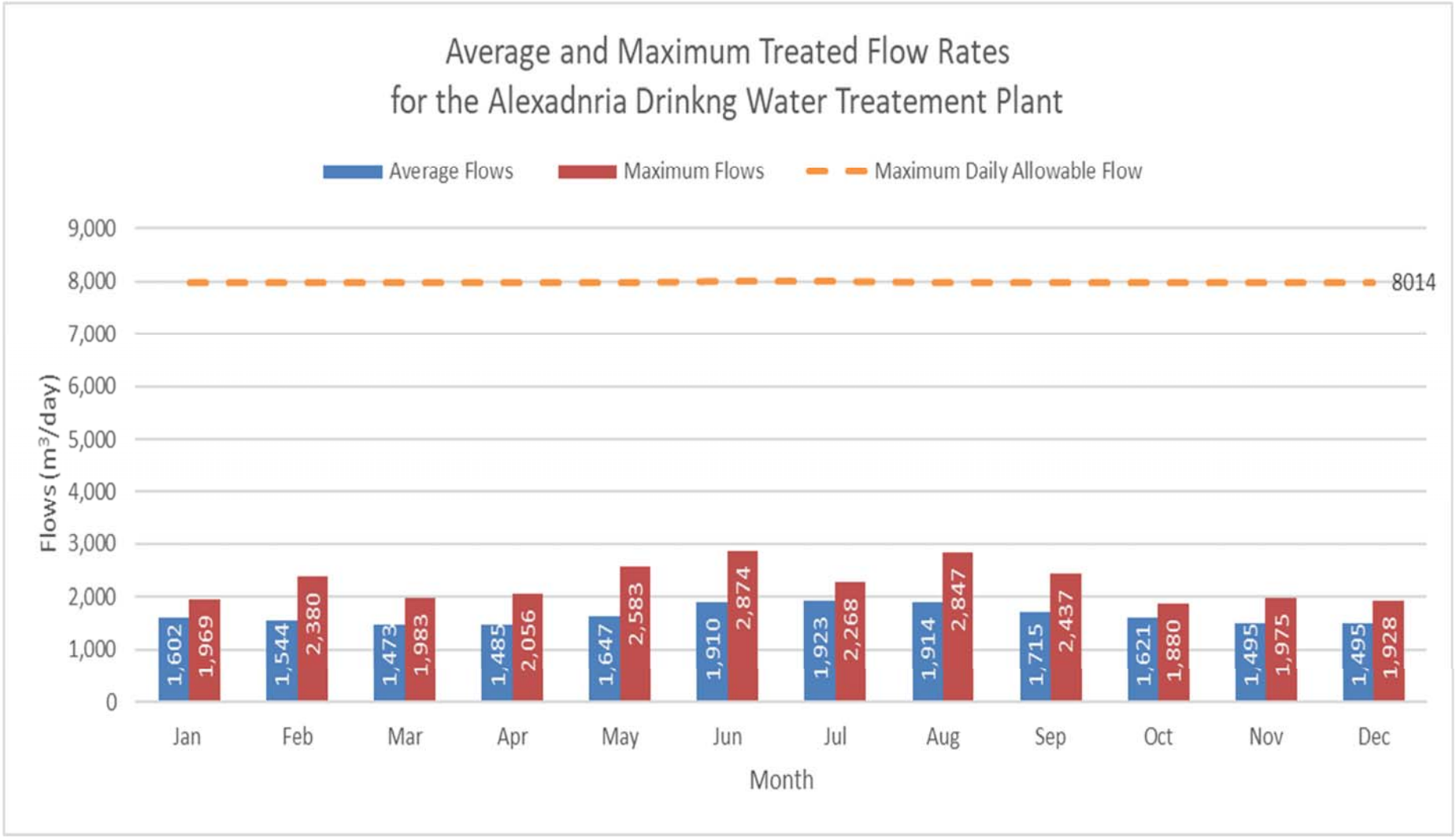
Annual Flows Summary
184
1,653
2,874
604,837

Appendix B: Alexandria 2020 Instantaneous Treated Flows (m^3/sec)

	January	February	March	April	May	June	July	August	September	October	November	December
1	0.041	0.040	0.040	0.040	0.040	0.037	0.038	0.037	0.038	0.037	0.038	0.041
2	0.042	0.041	0.041	0.040	0.039	0.039	0.040	0.038	0.038	0.037	0.037	0.040
3	0.043	0.040	0.041	0.040	0.039	0.039	0.038	0.037	0.039	0.037	0.037	0.041
4	0.043	0.041	0.042	0.040	0.040	0.039	0.038	0.037	0.037	0.037	0.037	0.039
5	0.044	0.039	0.045	0.040	0.040	0.039	0.038	0.039	0.037	0.037	0.037	0.039
6	0.043	0.040	0.043	0.040	0.040	0.039	0.038	0.038	0.038	0.037	0.037	0.039
7	0.044	0.040	0.040	0.040	0.043	0.039	0.038	0.038	0.037	0.038	0.036	0.039
8	0.041	0.040	0.040	0.040	0.040	0.039	0.039	0.038	0.038	0.038	0.037	0.040
9	0.040	0.040	0.040	0.040	0.039	0.040	0.038	0.037	0.038	0.037	0.037	0.049
10	0.040	0.040	0.041	0.039	0.039	0.039	0.037	0.038	0.037	0.037	0.037	0.049
11	0.040	0.040	0.041	0.040	0.040	0.039	0.037	0.037	0.037	0.037	0.036	0.049
12	0.040	0.040	0.040	0.040	0.041	0.038	0.037	0.037	0.037	0.037	0.037	0.037
13	0.041	0.040	0.040	0.040	0.040	0.039	0.037	0.037	0.037	0.037	0.037	0.037
14	0.042	0.040	0.040	0.040	0.040	0.038	0.039	0.035	0.037	0.037	0.037	0.038
15	0.040	0.040	0.040	0.040	0.040	0.039	0.037	0.037	0.035	0.037	0.037	0.037
16	0.040	0.040	0.041	0.040	0.039	0.038	0.037	0.036	0.037	0.037	0.038	0.038
17	0.040	0.040	0.040	0.041	0.041	0.039	0.038	0.037	0.037	0.037	0.038	0.037
18	0.040	0.044	0.040	0.040	0.040	0.039	0.038	0.038	0.038	0.037	0.038	0.039
19	0.040	0.040	0.041	0.040	0.040	0.040	0.037	0.037	0.037	0.037	0.032	0.039
20	0.040	0.040	0.040	0.040	0.040	0.039	0.037	0.041	0.037	0.037	0.037	0.038
21	0.042	0.040	0.040	0.040	0.040	0.039	0.038	0.037	0.037	0.037	0.041	0.037
22	0.040	0.040	0.040	0.041	0.039	0.039	0.038	0.037	0.037	0.039	0.038	0.037
23	0.040	0.040	0.040	0.040	0.039	0.039	0.037	0.038	0.037	0.037	0.037	0.038
24	0.041	0.040	0.040	0.040	0.039	0.038	0.037	0.037	0.037	0.036	0.037	0.037
25	0.041	0.040	0.040	0.040	0.039	0.039	0.037	0.038	0.042	0.033	0.037	0.038
26	0.040	0.040	0.041	0.040	0.037	0.039	0.037	0.037	0.037	0.037	0.037	0.038
27	0.041	0.044	0.040	0.039	0.038	0.038	0.038	0.037	0.037	0.037	0.037	0.038
28	0.042	0.040	0.040	0.039	0.038	0.038	0.038	0.038	0.038	0.041	0.038	0.037
29	0.040	0.040	0.040	0.039	0.040	0.038	0.038	0.037	0.037	0.039	0.037	0.037
30	0.040		0.040	0.040	0.040	0.038	0.037	0.037	0.037	0.037	0.041	0.038
31	0.040		0.040		0.039		0.038	0.037		0.037		0.037
Minimum	0.040	0.039	0.040	0.039	0.037	0.037	0.037	0.035	0.035	0.033	0.032	0.037
Average	0.041	0.040	0.041	0.040	0.039	0.039	0.038	0.037	0.037	0.037	0.037	0.039
Maximum	0.044	0.044	0.045	0.041	0.043	0.040	0.040	0.041	0.042	0.041	0.041	0.049

Annual Flows Summary
0.032
0.039
0.049

Appendix C: Comparison of Average and Maximum Monthly Treated Flow Rates



NORTH GLENGARRY NORD

Ontario's Celtic Heartland / Le centre celtique de l'Ontario

Report No: PW 2021-01

STAFF REPORT TO COMMITTEE OF THE WHOLE

March 16th, 2021

From: Angela Cullen – Water Wastewater Compliance Coordinator

RE: 2020 Annual and Summary Report

Recommended Motion:

THAT the Committee of the Whole receives Staff Report No. PW 2021-01 for information purposes.

Background / Analysis:
Staff have prepared the 2020 Drinking Water System Annual and Summary Reports for the Alexandria Drinking Water System.

The attached drinking water annual summary report will be sent to the Ministry of Environment as part of the Township's obligation under Ontario Regulation 170/03 and posted to the Township website for public access.

Financial Implications:
N/A

Others Consulted:
Dean McDonald, Acting Public Works Director

Attachements:
- Alexandria Drinking Water System Annual and Summary Report
- Alx DWS Council Presentation

Comments:
N/A

Reviewed by Sarah Huskinson – CAO/Clerk