Mississippi Mills Drinking Water System

Waterworks # 220001290
System Category – Large Municipal Residential

Annual Water Report

Prepared For: Municipality of Mississippi Mills

Reporting Period of January 1st – December 31st 2020

Issued: February 24, 2021

Revision: 0

Operating Authority:

OCWA
ONTARIO CLEAN WATER AGENCY
AGENCE ONTARIENNE DES EAUX

This report has been prepared to satisfy the annual reporting requirements in O.Reg 170/03 Section 11 and Schedule 22

Table of Contents

Report Availability

This system does not serve more than 10,000 residence and the annual reports will be available to users at the Municipality of Mississippi Mills Office. Notification will be at the Municipal Office and copies provided free of charge if requested. The Municipality of Mississippi Mills is located at 3131 Old Perth Rd., Almonte, Ontario, K0A 1A0. View the Municipalities website at www.mississippimills.ca

There are no additional drinking water systems that receive drinking water from this system.

Compliance Report Card

Compliance Event	# of Events
Ministry of Environment Inspections	• OCWA/Mississippi Mills Distribution - November 27, 2019 – 96.94% • OCWA/Mississippi Mills Distribution - October 29, 2020 – 100%
Ministry of Labour Inspections	No Inspections for the reporting period
QEMS External Audit	OCWA: One (1) External On-Site Audit completed Municipality of Mississippi Mills: One (1) External On-Site Audit completed
AWQI's/BWA	No AWQI's for the reporting period
Non-Compliance	No Non-Compliance's for the reporting period
Spills	There were no Spills during the reporting period.

System Process Description

The Mississippi Mills Drinking Water System consists of 5 drilled wells located throughout the Ward of Almonte. The system supplies water to only the Ward of Almonte and is owned by The Corporation of the Municipality of Mississippi Mills. The Ontario Clean Water Agency is the Operating Authority.

Well 3 is located in the eastern portion of the Town, approximately 60 m north of Ottawa Street and Harold Street. Well 3 is contained in its own brick construction pump house and is equipped with a turbine pump. Disinfection is achieved through injection of sodium hypochlorite into the feeder main prior to the treated water being discharged into a chlorine contact tank.

Well 5 is located along Almonte Street (County Road 16) near the south west end of Town. Well 5 is contained in its own brick construction pump house and is equipped with a vertical turbine pump. Disinfection is achieved through injection of sodium hypochlorite into the feeder main prior to the treated water being discharged into a chlorine contact tank.

Well 6 is located in Gemmill's Park in the south end of Town, immediately east of Highway 29. Well 6 is contained in its own brick construction pump house and is equipped with a turbine pump. Disinfection is achieved through injection of sodium hypochlorite into the feeder main prior to the treated water being discharged into a chlorine contact tank.

Wells 7 and 8 are located within a single pump house near the northeast edge of Town, along the north side of Paterson Street. Well 7 and 8 are enclosed within a single brick and aluminum clad vented watertight pump house. Each well is equipped with a vertical turbine pump. The pumps are located directly on top of the well casings. Disinfection is achieved through injection of liquid sodium hypochlorite into the feeder main of each well, prior to the treated water being discharged into a single chlorine contact chamber.

Treatment Chemicals used during the reporting year:

Chemical Name	Use	Supplier
Sodium Hypochlorite	Disinfection	Brenntag

Summary of Non-Compliance

Adverse Water Quality Incidents

Date	AWQI #	Location	Problem	Details	Legislation	Corrective Action Taken
No AWQI's during the reporting period						

Non-Compliance

Legislation	requirement(s) system failed to meet	duration of the failure (i.e. date(s))	Corrective Action	Status
No Non-Compliance's during the reporting period				

Non-Compliance Identified in a Ministry Inspection:

MECP Inspection Report – November 27, 2020

Legislation	requirement(s) system failed to meet	duration of the failure (i.e. date(s))	Corrective Action	Status
Section 22 of O. Reg. 128/04	Municipality of Mississippi Mills – An operator did not possess the required certification	2020	A review of system certificates of the operators/operational staff and the process to ensure all operators /operational staff f provide accurate/correct information on records and documents	Closed

Section 6-1.1 of Schedule 6 to O. Reg. 170/03	The number of days between the HAA sampling dates of January 8, 2019 and May 27, 2019 is 139 days	2020	A review of the Standard Operating Procedure for Sampling was completed with operations staff. This review covered topics such as receiving the sample calendar, external lab sampling procedures and review of lab results	Closed
O. Reg. 170/03	The 2019 Annual Water Report included a number of errors and/or discrepancies	2020	The 2019 Annual Water Report has been reviewed and updated	Closed
Municipal Drinking Water Licence	CT Worst Case Scenario stating that the minimum free chlorine residual required is 0.22 mg/L as per JLR's letter for Wells 7 & 8 demonstrating compliance with Condition 16.2 of MDWL Number 178-101	2020	A revised SOP for CT Worst Case Scenario	Closed

MECP Inspection Report - October 28, 2020

Legislation	requirement(s) system failed to meet	duration of the failure (i.e. date(s))	Corrective Action	Status
Drinking Water Works Permit	DWWP Condition 2.4 states that the owner shall notify the Director within thirty (30) days of the placing into service or the completion of any addition, modification, replacement or extension of the drinking water system	2020	The Director's Notification was submitted January 18, 2021.	Closed

Flows

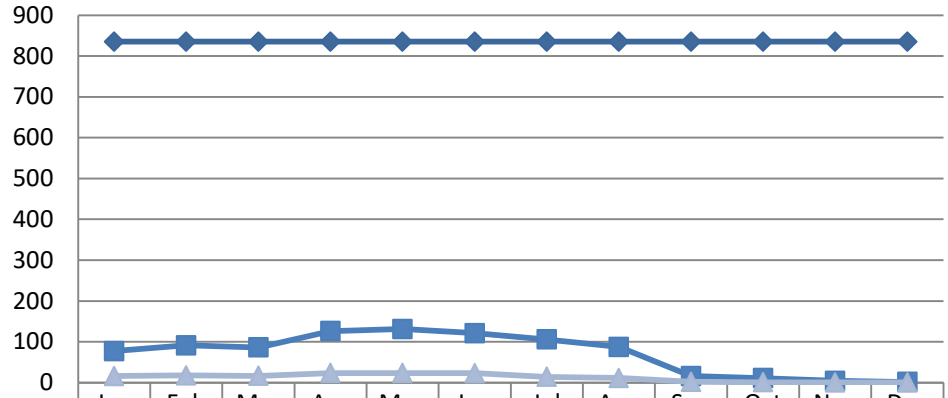
The Mississippi Mills Drinking Water System is operating on average under half the rated capacity.

Raw Water Flows

The Raw Water flows are regulated under the Permit to Take Water. 2020 Raw Flow Data was submitted to the Ministry electronically under permit #0568-9LUL2N. The confirmation is attached in Appendix A.

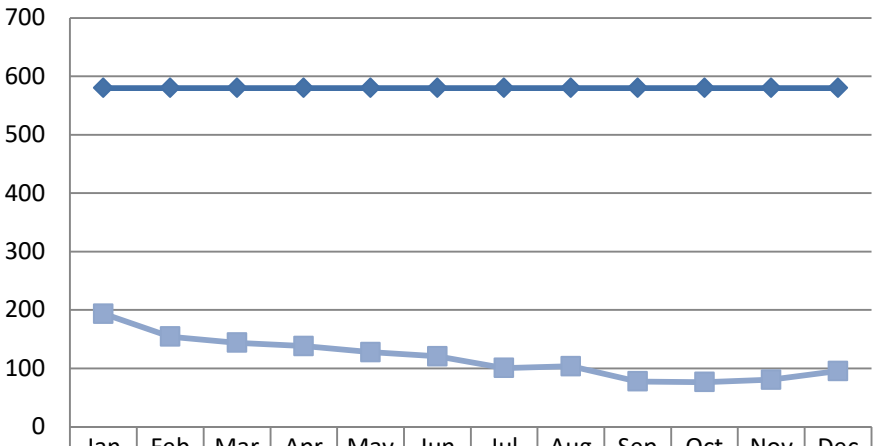
Well 3

Total Monthly Flows (m^3/d)
Max Allowable PTTW



	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Max Allowable (m^3/d)	835.2	835.2	835.2	835.2	835.2	835.2	835.2	835.2	835.2	835.2	835.2	835.2
Max Flow (m^3/d)	77	91	86	126	131	121	106	87	16	11	4	1
Avg (m^3/d)	16	18	16	24	23	23	14	11	2	1	0	0

Monthly Rated Flows (L/min)
Max allowable rate - PTTW

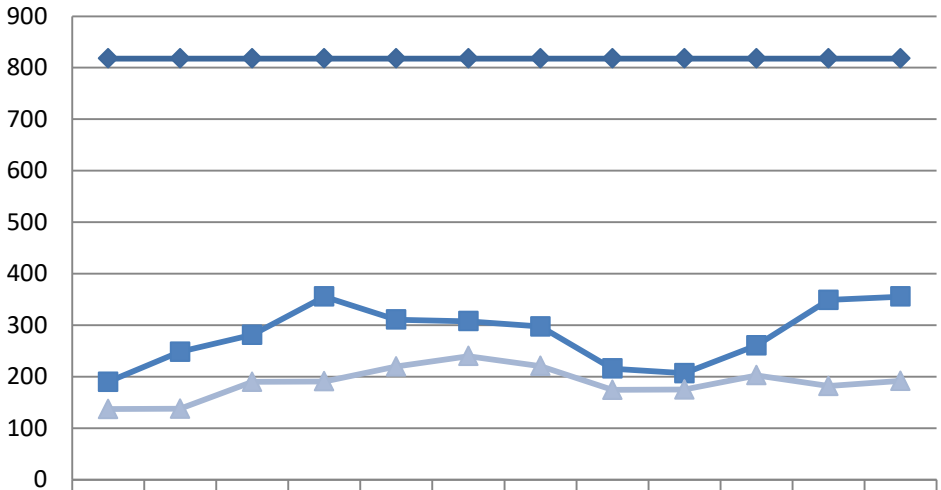


	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Max Allowable Rate (L/min)	580	580	580	580	580	580	580	580	580	580	580	580
Max Rate (L/min)	194	154	144	138	128	121	101	104	78	77	81	95

Well 5

Total Monthly Flows (m³/d)

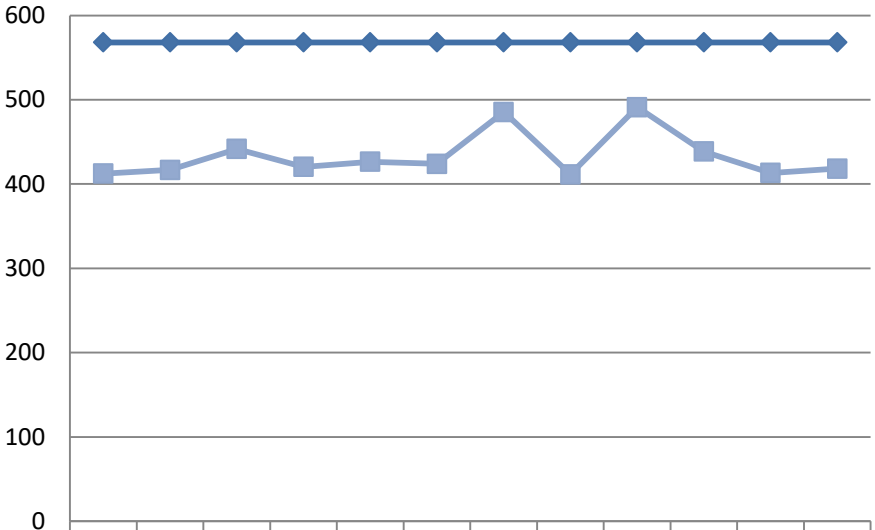
Max Allowable PTTW



	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Max Allowable (m³/d)	817.9	817.9	817.9	817.9	817.9	817.9	817.9	817.9	817.9	817.9	817.9	817.9
Max Flow (m³/d)	190	248	281	356	311	308	297	216	207	261	349	355
Avg (m³/d)	137	138	190	191	220	240	220	174	175	203	182	192

Monthly Rated Flows (L/min)

Max allowable rate – PTTW

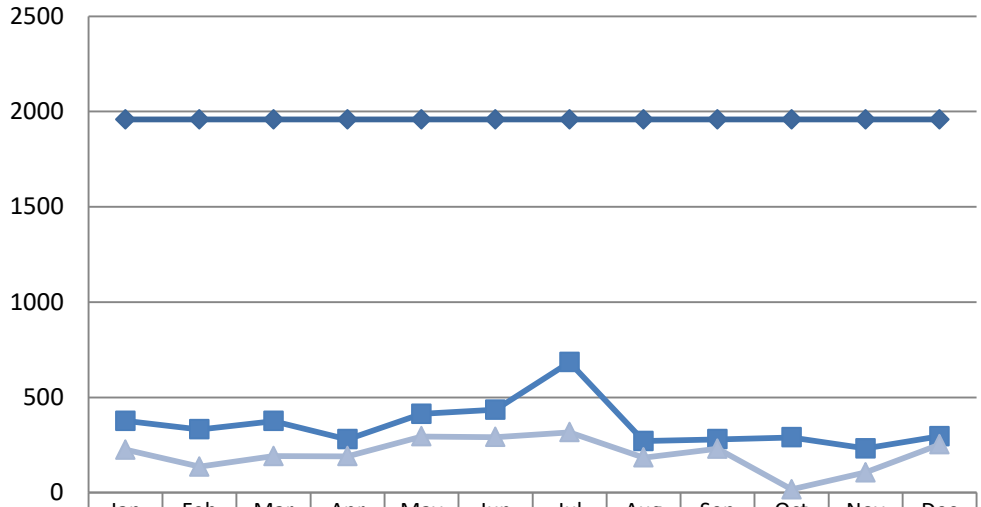


	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Max Allowable Rate (L/min)	568	568	568	568	568	568	568	568	568	568	568	568
Max Rate (L/min)	412	417	442	420	426	424	485	412	491	439	413	418

Well 6

Total Monthly Flows (m³/d)

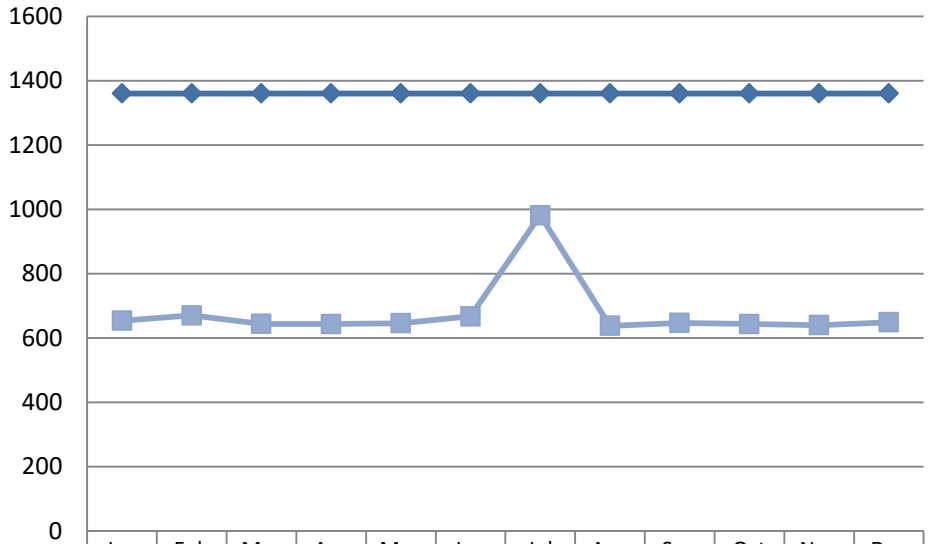
Max Allowable PTTW



	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Max Allowable (m³/d)	1958.4	1958.4	1958.4	1958.4	1958.4	1958.4	1958.4	1958.4	1958.4	1958.4	1958.4	1958.4
Max Flow (m³/d)	376	331	375	280	413	435	685	271	279	290	232	295
Avg (m³/d)	225	136	191	191	295	291	317	184	231	17	106	253

Monthly Rated Flows (L/s)

Max allowable rate – PTTW

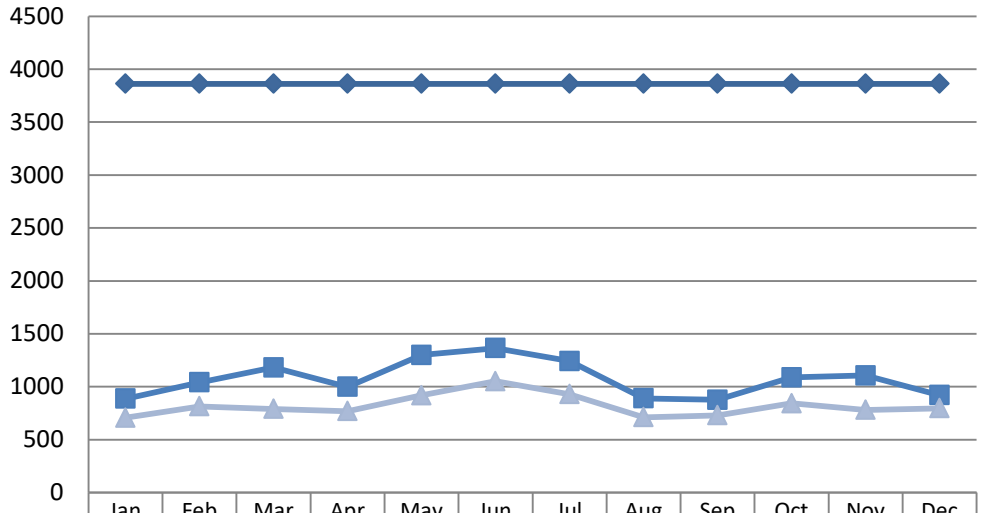


	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Max Allowable Rate (L/sec)	1360	1360	1360	1360	1360	1360	1360	1360	1360	1360	1360	1360
Max Rate (L/s)	654	670	644	643	646	667	982	638	647	643	640	649

Well 7

Total Monthly Flows (m³/d)

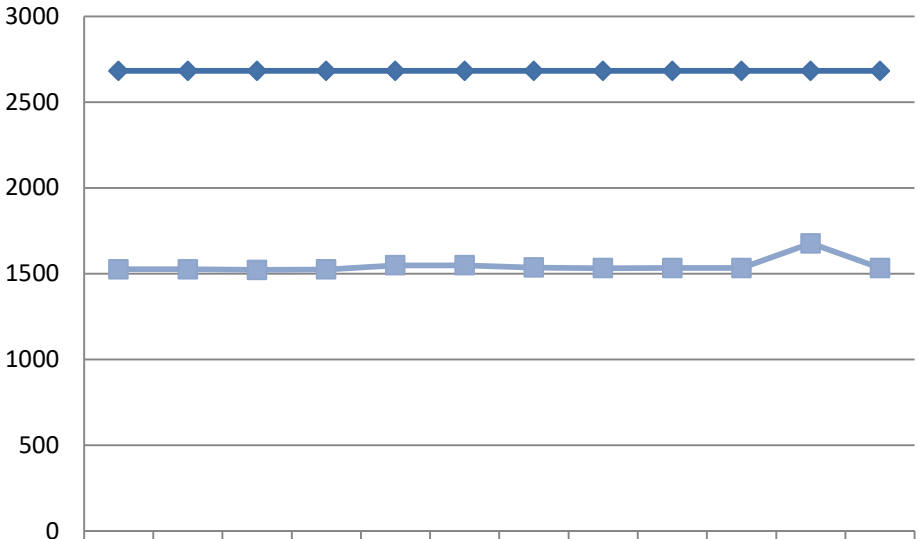
Max Allowable PTTW



	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Max Allowable (m³/d)	3862	3862	3862	3862	3862	3862	3862	3862	3862	3862	3862	3862
Max Flow (m³/d)	888	1042	1182	1000	1300	1366	1242	891	877	1088	1106	921
Avg (m³/d)	708	814	790	770	919	1051	930	713	730	844	782	797

Monthly Rated Flows (L/min)

Max allowable rate - PTTW

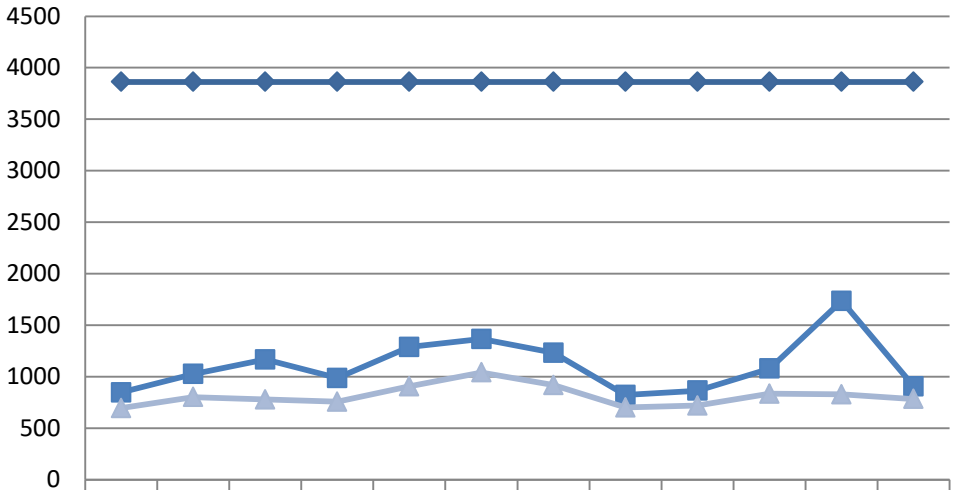


	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Max Allowable Rate (L/min)	2682	2682	2682	2682	2682	2682	2682	2682	2682	2682	2682	2682
Max Rate (L/min)	1525	1525	1521	1524	1548	1549	1535	1532	1533	1533	1676	1533

Well 8

Total Monthly Flows (m³/d)

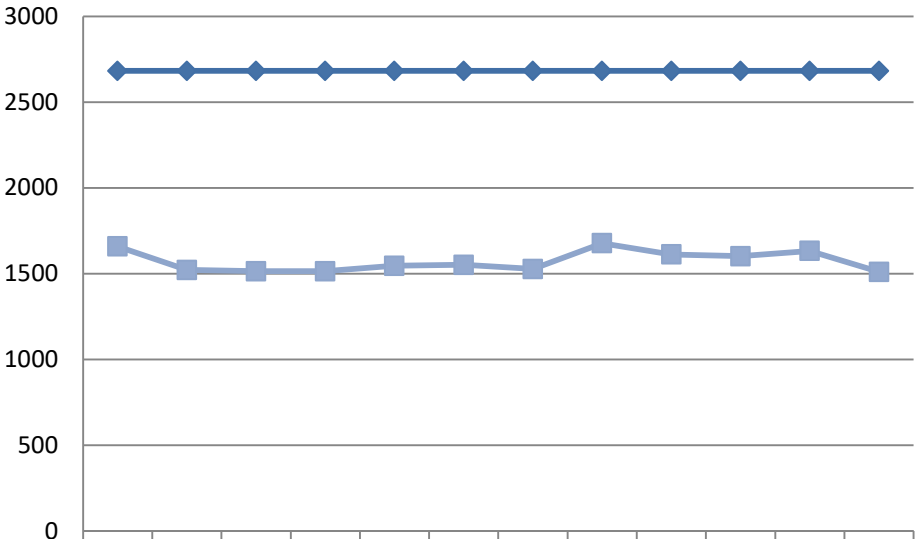
Max Allowable PTTW



	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Max Allowable (m³/d)	3862	3862	3862	3862	3862	3862	3862	3862	3862	3862	3862	3862
Max Flow (m³/d)	846	1025	1167	986	1287	1365	1233	821	864	1078	1736	906
Avg (m³/d)	694	801	778	757	906	1041	918	701	719	834	828	783

Monthly Rated Flows (L/min)

Max allowable rate - PTTW



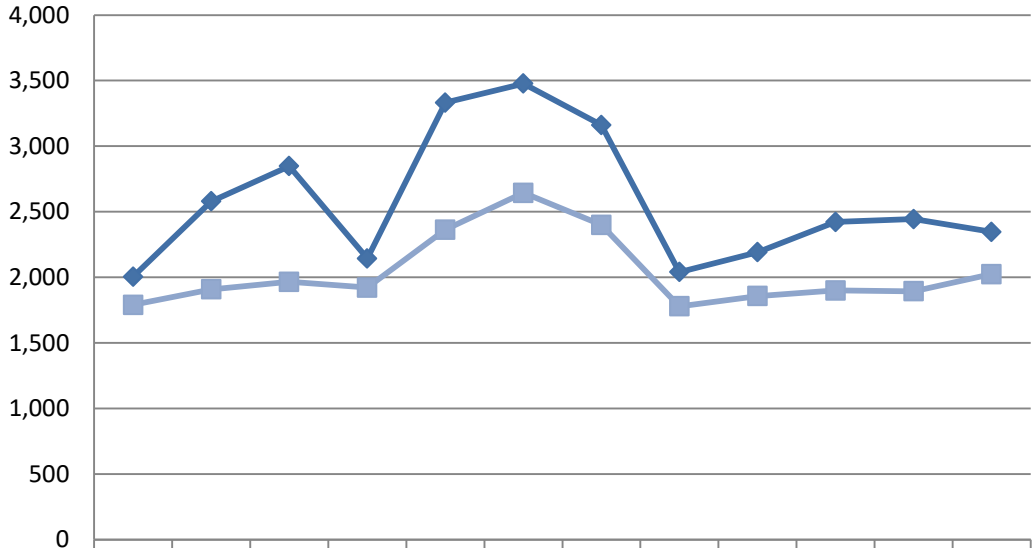
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Max Allowable Rate (L/min)	2682	2682	2682	2682	2682	2682	2682	2682	2682	2682	2682	2682
Max Rate (L/min)	1659	1521	1514	1514	1546	1551	1527	1677	1612	1601	1632	1510

System Water Flows

The System Water flows are regulated under the Municipal Licence.

Monthly Flows

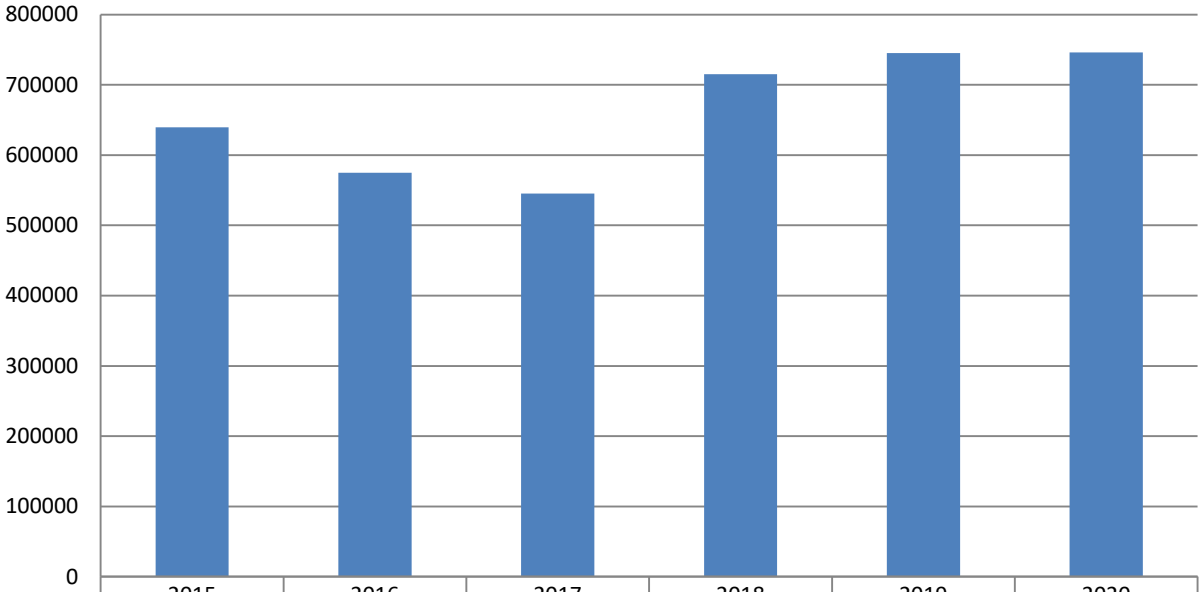
Rated Capacity - MDWL



	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Max Daily Flow (m^3/d)	2,005	2,579	2,849	2,145	3,332	3,477	3,161	2,041	2,192	2,423	2,444	2,347
Avg (m^3/d)	1,791	1,909	1,967	1,922	2,364	2,645	2,401	1,780	1,858	1,900	1,894	2,025

Annual Total Flow Comparison

Total Annual m^3



	2015	2016	2017	2018	2019	2020
WTP (m^3)	639353	574901	545401	715368	745410	745976

Regulatory Sample Results Summary

Microbiological Testing

	No. of Samples Collected *	Range of E.Coli Results		Range of Total Coliform Results		No. of HPC Samples Collected	Range of HPC Results	
		Min	Max	Min	Max		Min	Max
MMills DWS RW Well 3	53	0	0	0	1			
MMills DWS RW Well 5	52	0	0	0	74			
MMills DWS RW Well 6	51	0	0	0	1			
MMills DWS RW Well 7	52	0	0	0	38			
MMills DWS RW Well 8	51	0	0	0	3			
MMills DWS TW Well 3	51	0	0	0	0	51	2	6
MMills DWS TW Well 5	52	0	0	0	0	52	2	8
MMills DWS TW Well 6	51	0	0	0	0	51	2	2
MMills DWS TW Wells 7&8 combined	53	0	0	0	0	53	2	2
Distribution	212	0	0	0	0	212	2	32

* Number of Samples collected varies due to the individual well being Out of Service

Operational Testing

	No. of Samples Collected	Range of Results	
		Minimum	Maximum
Turbidity, On-Line (NTU) - RW6	8760	0.02	2.0
Turbidity, On-Line (NTU) - RW7	8760	0.02	2.0
Turbidity, On-Line (NTU) - RW8	8760	0.02	2.0
Free Chlorine Residual, On-Line (mg/L) - TW3	8760	0.21	1.72
Free Chlorine Residual, In-House (mg/L) – TW3	140	0.58	1.41
Free Chlorine Residual, On-Line (mg/L) - TW5	8760	0.09	2.0
Free Chlorine Residual, In-House (mg/L) – TW5	152	0.82	1.94
Free Chlorine Residual, On-Line (mg/L) - TW6	8760	0.26	2.0
Free Chlorine Residual, In-House (mg/L) – TW6	149	0.70	1.57
Free Chlorine Residual, On-Line (mg/L) - TW7/8	8760	0.68	1.68
Free Chlorine Residual, In-House (mg/L) – TW7/8	155	0.72	1.59
Free Chlorine Residual, On-Line (mg/L) - DW	8760	0.951	2.137
Free Chlorine Residual, DW Field (mg/L) Lab Upload - DW	212	0.6	1.55

NOTE: spikes recorded by on-line instrumentation were a result of air bubbles and various maintenance/calibration activities. All spikes are reviewed for compliance with O.Reg 170/03

Inorganic Parameters

These parameters are tested as a requirement under O.Reg 170/03. Sodium and Fluoride are required to be tested every 5 years. Nitrate and Nitrite are tested quarterly and the metals are tested every 36 months as required under O.Reg 170/03. In the event any of the parameters exceed half of the maximum allowable concentration the parameter is required to be sampled quarterly.

- MAC = Maximum Allowable Concentration as per O.Reg 169/03
- BDL = Below the laboratory detection level

	Sample Date (yyyy/mm/dd)	Sample Result	MAC	No. of Exceedances	
				MAC	1/2 MAC
Treated Water					
Antimony: Sb (ug/L) - TW3	2019/09/09	<MDL 0.1	6.0	No	No
Antimony: Sb (ug/L) - TW5	2019/09/09	<MDL 0.1	6.0	No	No
Antimony: Sb (ug/L) - TW6	2019/09/09	<MDL 0.1	6.0	No	No
Antimony: Sb (ug/L) - TW7/8	2019/09/09	<MDL 0.1	6.0	No	No
Arsenic: As (ug/L) - TW3	2019/09/09	<MDL 0.1	10.0	No	No
Arsenic: As (ug/L) - TW5	2019/09/09	<MDL 0.1	10.0	No	No
Arsenic: As (ug/L) - TW6	2019/09/09	<MDL 0.1	10.0	No	No
Arsenic: As (ug/L) - TW7/8	2019/09/09	<MDL 0.1	10.0	No	No
Barium: Ba (ug/L) - TW3	2019/09/09	120.0	1000.0	No	No
Barium: Ba (ug/L) - TW5	2019/09/09	154.0	1000.0	No	No
Barium: Ba (ug/L) - TW6	2019/09/09	92.0	1000.0	No	No
Barium: Ba (ug/L) - TW7/8	2019/09/09	152.0	1000.0	No	No
Boron: B (ug/L) - TW3	2019/09/09	247.0	5000.0	No	No
Boron: B (ug/L) - TW5	2019/09/09	50.0	5000.0	No	No
Boron: B (ug/L) - TW6	2019/09/09	284.0	5000.0	No	No
Boron: B (ug/L) - TW7/8	2019/09/09	183.0	5000.0	No	No
Cadmium: Cd (ug/L) - TW3	2019/09/09	<MDL 0.02	5.0	No	No
Cadmium: Cd (ug/L) - TW5	2019/09/09	<MDL 0.02	5.0	No	No
Cadmium: Cd (ug/L) - TW6	2019/09/09	<MDL 0.02	5.0	No	No
Cadmium: Cd (ug/L) - TW7/8	2019/09/09	<MDL 0.02	5.0	No	No
Chromium: Cr (ug/L) - TW3	2019/09/09	<MDL 2.0	50.0	No	No
Chromium: Cr (ug/L) - TW5	2019/09/09	<MDL 2.0	50.0	No	No
Chromium: Cr (ug/L) - TW6	2019/09/09	<MDL 2.0	50.0	No	No
Chromium: Cr (ug/L) - TW7/8	2019/09/09	<MDL 2.0	50.0	No	No
Mercury: Hg (ug/L) - TW3	2019/09/09	<MDL 0.02	1.0	No	No
Mercury: Hg (ug/L) - TW5	2019/09/09	<MDL 0.02	1.0	No	No
Mercury: Hg (ug/L) - TW6	2019/09/09	<MDL 0.02	1.0	No	No
Mercury: Hg (ug/L) - TW7/8	2019/09/09	<MDL 0.02	1.0	No	No
Selenium: Se (ug/L) - TW3	2019/09/09	<MDL 1.0	50.0	No	No
Selenium: Se (ug/L) - TW5	2019/09/09	<MDL 1.0	50.0	No	No
Selenium: Se (ug/L) - TW6	2019/09/09	<MDL 1.0	50.0	No	No
Selenium: Se (ug/L) - TW7/8	2019/09/09	<MDL 1.0	50.0	No	No
Uranium: U (ug/L) - TW3	2019/09/09	0.65	20.0	No	No
Uranium: U (ug/L) - TW5	2019/09/09	0.78	20.0	No	No
Uranium: U (ug/L) - TW6	2019/09/09	0.89	20.0	No	No
Uranium: U (ug/L) - TW7/8	2019/09/09	1.05	20.0	No	No
Additional Inorganics					
Fluoride (mg/L) - TW3	2019/02/05	0.1	1.5	No	No
Fluoride (mg/L) - TW5	2019/02/05	<MDL 0.1	1.5	No	No

	Sample Date (yyyy/mm/dd)	Sample Result	MAC	No. of Exceedances	
				MAC	1/2 MAC
Fluoride (mg/L) - TW6	2019/02/05	0.3	1.5	No	No
Fluoride (mg/L) - TW7/8	2019/02/05	0.2	1.5	No	No
Nitrite (mg/L) - TW3	2020/02/12	<MDL 0.1	1.0	No	No
Nitrite (mg/L) - TW3	2020/05/11	0.1	1.0	No	No
Nitrite (mg/L) - TW3	2020/08/10	<MDL 0.1	1.0	No	No
Nitrite (mg/L) - TW3	2020/11/16	<MDL 0.1	1.0	No	No
Nitrite (mg/L) - TW5	2020/02/12	<MDL 0.1	1.0	No	No
Nitrite (mg/L) - TW5	2020/05/11	<MDL 0.1	1.0	No	No
Nitrite (mg/L) - TW5	2020/08/10	<MDL 0.1	1.0	No	No
Nitrite (mg/L) - TW5	2020/11/16	<MDL 0.1	1.0	No	No
Nitrite (mg/L) - TW6	2020/02/12	<MDL 0.1	1.0	No	No
Nitrite (mg/L) - TW6	2020/05/11	<MDL 0.1	1.0	No	No
Nitrite (mg/L) - TW6	2020/08/10	<MDL 0.1	1.0	No	No
Nitrite (mg/L) - TW6	2020/11/16	<MDL 0.1	1.0	No	No
Nitrite (mg/L) - TW7/8	2020/02/12	<MDL 0.1	1.0	No	No
Nitrite (mg/L) - TW7/8	2020/05/11	<MDL 0.1	1.0	No	No
Nitrite (mg/L) - TW7/8	2020/08/10	<MDL 0.1	1.0	No	No
Nitrite (mg/L) - TW7/8	2020/11/16	<MDL 0.1	1.0	No	No
Nitrate (mg/L) - TW3	2020/02/12	0.3	10.0	No	No
Nitrate (mg/L) - TW3	2020/05/11	0.5	10.0	No	No
Nitrate (mg/L) - TW3	2020/08/10	0.6	10.0	No	No
Nitrate (mg/L) - TW3	2020/11/16	0.8	10.0	No	No
Nitrate (mg/L) - TW5	2020/02/12	0.3	10.0	No	No
Nitrate (mg/L) - TW5	2020/05/11	0.4	10.0	No	No
Nitrate (mg/L) - TW5	2020/08/10	0.2	10.0	No	No
Nitrate (mg/L) - TW5	2020/11/16	0.1	10.0	No	No
Nitrate (mg/L) - TW6	2020/02/12	0.3	10.0	No	No
Nitrate (mg/L) - TW6	2020/05/11	0.4	10.0	No	No
Nitrate (mg/L) - TW6	2020/08/10	0.6	10.0	No	No
Nitrate (mg/L) - TW6	2020/11/16	0.4	10.0	No	No
Nitrate (mg/L) - TW7/8	2020/02/12	0.9	10.0	No	No
Nitrate (mg/L) - TW7/8	2020/05/11	0.8	10.0	No	No
Nitrate (mg/L) - TW7/8	2020/08/10	0.8	10.0	No	No
Nitrate (mg/L) - TW7/8	2020/11/16	0.9	10.0	No	No
Sodium: Na (mg/L) - TW3	2019/07/03	41.4	20*	Yes	Yes
Sodium: Na (mg/L) - TW5	2019/07/03	60.9	20*	Yes	Yes
Sodium: Na (mg/L) - TW6	2019/07/03	44.6	20*	Yes	Yes
Sodium: Na (mg/L) - TW7/8	2019/07/03	43.5	20*	Yes	Yes

*There is no "MAC" for Sodium. The aesthetic objective for sodium in drinking water is 200 mg/L. The local Medical Officer of Health should be notified when the sodium concentration exceeds 20 mg/L so that this information may be communicated to local physicians for their use with patients on sodium restricted diets.

** Sodium was reported as an AWQI in 2018. No regulatory reporting requirements in 2019.

Schedule 15 Sampling:

The Schedule 15 Sampling is required under O.Reg 170/03. This system is under the plumbing exemption. No plumbing samples were collected.

Distribution System	Number of Sampling Points	Number of Samples	Range of Results		MAC (ug/L)	Number of Exceedances
			Minimum	Maximum		
Alkalinity (mg/L)	12	12	260	305	N/A	N/A
pH	6	6	7.84	7.94	N/A	N/A
Lead (ug/l)	6	6	0.12	1.35	10	0

Organic Parameters

These parameters are tested every 36 months as a requirement under O.Reg 170/03. In the event any of the parameters exceed half of the maximum allowable concentration the parameter is required to be sampled quarterly.

	Sample Date (yyyy/mm/dd)	Sample Result	MAC	Number of Exceedances	
				MAC	1/2 MAC
Treated Water					
Alachlor (ug/L) - TW3	2019/09/09	<MDL 0.3	5.00	No	No
Alachlor (ug/L) - TW5	2019/09/09	<MDL 0.3	5.00	No	No
Alachlor (ug/L) - TW7/8	2019/09/09	<MDL 0.3	5.00	No	No
Alachlor (ug/L) - TW6	2019/09/09	<MDL 0.3	5.00	No	No
Azinphos-methyl (ug/L) - TW3	2019/09/09	<MDL 1.0	20.00	No	No
Azinphos-methyl (ug/L) - TW5	2019/09/09	<MDL 1.0	20.00	No	No
Azinphos-methyl (ug/L) - TW7/8	2019/09/09	<MDL 1.0	20.00	No	No
Azinphos-methyl (ug/L) - TW6	2019/09/09	<MDL 1.0	20.00	No	No
Benzene (ug/L) - TW3	2019/09/09	<MDL 0.5	1.00	No	No
Benzene (ug/L) - TW5	2019/09/09	<MDL 0.5	1.00	No	No
Benzene (ug/L) - TW7/8	2019/09/09	<MDL 0.5	1.00	No	No
Benzene (ug/L) - TW6	2019/09/09	<MDL 0.5	1.00	No	No
Benzo(a)pyrene (ug/L) - TW3	2019/09/09	<MDL 0.005	0.01	No	No
Benzo(a)pyrene (ug/L) - TW5	2019/09/09	<MDL 0.005	0.01	No	No
Benzo(a)pyrene (ug/L) - TW7/8	2019/09/09	<MDL 0.005	0.01	No	No
Benzo(a)pyrene (ug/L) - TW6	2019/09/09	<MDL 0.005	0.01	No	No
Bromoxynil (ug/L) - TW3	2019/09/09	<MDL 0.5	5.00	No	No
Bromoxynil (ug/L) - TW5	2019/09/09	<MDL 0.5	5.00	No	No
Bromoxynil (ug/L) - TW7/8	2019/09/09	<MDL 0.5	5.00	No	No
Bromoxynil (ug/L) - TW6	2019/09/09	<MDL 0.5	5.00	No	No
Carbaryl (ug/L) - TW3	2019/09/09	<MDL 3.0	90.00	No	No
Carbaryl (ug/L) - TW5	2019/09/09	<MDL 3.0	90.00	No	No
Carbaryl (ug/L) - TW7/8	2019/09/09	<MDL 3.0	90.00	No	No
Carbaryl (ug/L) - TW6	2019/09/09	<MDL 3.0	90.00	No	No
Carbofuran (ug/L) - TW3	2019/09/09	<MDL 1.0	90.00	No	No
Carbofuran (ug/L) - TW5	2019/09/09	<MDL 1.0	90.00	No	No

	Sample Date (yyyy/mm/dd)	Sample Result	MAC	Number of Exceedances	
				MAC	1/2 MAC
Carbofuran (ug/L) - TW7/8	2019/09/09	<MDL 1.0	90.00	No	No
Carbofuran (ug/L) - TW6	2019/09/09	<MDL 1.0	90.00	No	No
Carbon Tetrachloride (ug/L) - TW3	2019/09/09	<MDL 0.2	2.00	No	No
Carbon Tetrachloride (ug/L) - TW5	2019/09/09	<MDL 0.2	2.00	No	No
Carbon Tetrachloride (ug/L) - TW7/8	2019/09/09	<MDL 0.2	2.00	No	No
Carbon Tetrachloride (ug/L) - TW6	2019/09/09	<MDL 0.2	2.00	No	No
Chlorpyrifos (ug/L) - TW3	2019/09/09	<MDL 0.5	90.00	No	No
Chlorpyrifos (ug/L) - TW5	2019/09/09	<MDL 0.5	90.00	No	No
Chlorpyrifos (ug/L) - TW7/8	2019/09/09	<MDL 0.5	90.00	No	No
Chlorpyrifos (ug/L) - TW6	2019/09/09	<MDL 0.5	90.00	No	No
Diazinon (ug/L) - TW3	2019/09/09	<MDL 1.0	20.00	No	No
Diazinon (ug/L) - TW5	2019/09/09	<MDL 1.0	20.00	No	No
Diazinon (ug/L) - TW7/8	2019/09/09	<MDL 1.0	20.00	No	No
Diazinon (ug/L) - TW6	2019/09/09	<MDL 1.0	20.00	No	No
Dicamba (ug/L) - TW3	2019/09/09	<MDL 10.0	120.00	No	No
Dicamba (ug/L) - TW5	2019/09/09	<MDL 10.0	120.00	No	No
Dicamba (ug/L) - TW7/8	2019/09/09	<MDL 10.0	120.00	No	No
Dicamba (ug/L) - TW6	2019/09/09	<MDL 10.0	120.00	No	No
1,2-Dichlorobenzene (ug/L) - TW3	2019/09/09	<MDL 0.5	200.00	No	No
1,2-Dichlorobenzene (ug/L) - TW5	2019/09/09	<MDL 0.5	200.00	No	No
1,2-Dichlorobenzene (ug/L) - TW7/8	2019/09/09	<MDL 0.5	200.00	No	No
1,2-Dichlorobenzene (ug/L) - TW6	2019/09/09	<MDL 0.5	200.00	No	No
1,4-Dichlorobenzene (ug/L) - TW3	2019/09/09	<MDL 0.5	5.00	No	No
1,4-Dichlorobenzene (ug/L) - TW5	2019/09/09	<MDL 0.5	5.00	No	No
1,4-Dichlorobenzene (ug/L) - TW7/8	2019/09/09	<MDL 0.5	5.00	No	No
1,4-Dichlorobenzene (ug/L) - TW6	2019/09/09	<MDL 0.5	5.00	No	No
1,2-Dichloroethane (ug/L) - TW3	2019/09/09	<MDL 0.5	5.00	No	No
1,2-Dichloroethane (ug/L) - TW5	2019/09/09	<MDL 0.5	5.00	No	No
1,2-Dichloroethane (ug/L) - TW7/8	2019/09/09	<MDL 0.5	5.00	No	No
1,2-Dichloroethane (ug/L) - TW6	2019/09/09	<MDL 0.5	5.00	No	No
1,1-Dichloroethylene (ug/L) - TW3	2019/09/09	<MDL 0.1	14.00	No	No
1,1-Dichloroethylene (ug/L) - TW5	2019/09/09	<MDL 0.1	14.00	No	No
1,1-Dichloroethylene (ug/L) - TW7/8	2019/09/09	<MDL 0.1	14.00	No	No
1,1-Dichloroethylene (ug/L) - TW6	2019/09/09	<MDL 0.1	14.00	No	No
Dichloromethane (Methylene Chloride) (ug/L) - TW3	2019/09/09	<MDL 5.0	50.00	No	No
Dichloromethane (Methylene Chloride) (ug/L) - TW5	2019/09/09	<MDL 5.0	50.00	No	No
Dichloromethane (Methylene Chloride) (ug/L) - TW7/8	2019/09/09	<MDL 5.0	50.00	No	No
Dichloromethane (Methylene Chloride) (ug/L) -	2019/09/09	<MDL 5.0	50.00	No	No

	Sample Date (yyyy/mm/dd)	Sample Result	MAC	Number of Exceedances	
				MAC	1/2 MAC
TW6					
2,4-Dichlorophenol (ug/L) - TW3	2019/09/09	<MDL 0.1	900.00	No	No
2,4-Dichlorophenol (ug/L) - TW5	2019/09/09	<MDL 0.1	900.00	No	No
2,4-Dichlorophenol (ug/L) - TW7/8	2019/09/09	<MDL 0.1	900.00	No	No
2,4-Dichlorophenol (ug/L) - TW6	2019/09/09	<MDL 0.1	900.00	No	No
2,4-Dichlorophenoxy acetic acid (2,4-D) (ug/L) - TW3	2019/09/09	<MDL 10.0	100.00	No	No
2,4-Dichlorophenoxy acetic acid (2,4-D) (ug/L) - TW5	2019/09/09	<MDL 10.0	100.00	No	No
2,4-Dichlorophenoxy acetic acid (2,4-D) (ug/L) - TW7/8	2019/09/09	<MDL 10.0	100.00	No	No
2,4-Dichlorophenoxy acetic acid (2,4-D) (ug/L) - TW6	2019/09/09	<MDL 10.0	100.00	No	No
Diclofop-methyl (ug/L) - TW3	2019/09/09	<MDL 0.9	9.00	No	No
Diclofop-methyl (ug/L) - TW5	2019/09/09	<MDL 0.9	9.00	No	No
Diclofop-methyl (ug/L) - TW7/8	2019/09/09	<MDL 0.9	9.00	No	No
Diclofop-methyl (ug/L) - TW6	2019/09/09	<MDL 0.9	9.00	No	No
Dimethoate (ug/L) - TW3	2019/09/09	<MDL 1.0	20.00	No	No
Dimethoate (ug/L) - TW5	2019/09/09	<MDL 1.0	20.00	No	No
Dimethoate (ug/L) - TW7/8	2019/09/09	<MDL 1.0	20.00	No	No
Dimethoate (ug/L) - TW6	2019/09/09	<MDL 1.0	20.00	No	No
Diquat (ug/L) - TW3	2019/09/09	<MDL 5.0	70.00	No	No
Diquat (ug/L) - TW5	2019/09/09	<MDL 5.0	70.00	No	No
Diquat (ug/L) - TW7/8	2019/09/09	<MDL 5.0	70.00	No	No
Diquat (ug/L) - TW6	2019/09/09	<MDL 5.0	70.00	No	No
Diuron (ug/L) - TW3	2019/09/09	<MDL 5.0	150.00	No	No
Diuron (ug/L) - TW5	2019/09/09	<MDL 5.0	150.00	No	No
Diuron (ug/L) - TW7/8	2019/09/09	<MDL 5.0	150.00	No	No
Diuron (ug/L) - TW6	2019/09/09	<MDL 5.0	150.00	No	No
Glyphosate (ug/L) - TW3	2019/09/09	<MDL 25.0	280.00	No	No
Glyphosate (ug/L) - TW5	2019/09/09	<MDL 25.0	280.00	No	No
Glyphosate (ug/L) - TW7/8	2019/09/09	<MDL 25.0	280.00	No	No
Glyphosate (ug/L) - TW6	2019/09/09	<MDL 25.0	280.00	No	No
Malathion (ug/L) - TW3	2019/09/09	<MDL 5.0	190.00	No	No
Malathion (ug/L) - TW5	2019/09/09	<MDL 5.0	190.00	No	No
Malathion (ug/L) - TW7/8	2019/09/09	<MDL 5.0	190.00	No	No
Malathion (ug/L) - TW6	2019/09/09	<MDL 5.0	190.00	No	No
Metolachlor (ug/L) - TW3	2019/09/09	<MDL 3.0	50.00	No	No
Metolachlor (ug/L) - TW5	2019/09/09	<MDL 3.0	50.00	No	No
Metolachlor (ug/L) - TW7/8	2019/09/09	<MDL 3.0	50.00	No	No
Metolachlor (ug/L) - TW6	2019/09/09	<MDL 3.0	50.00	No	No

	Sample Date (yyyy/mm/dd)	Sample Result	MAC	Number of Exceedances	
				MAC	1/2 MAC
Metribuzin (ug/L) - TW3	2019/09/09	<MDL 3.0	80.00	No	No
Metribuzin (ug/L) - TW5	2019/09/09	<MDL 3.0	80.00	No	No
Metribuzin (ug/L) - TW7/8	2019/09/09	<MDL 3.0	80.00	No	No
Metribuzin (ug/L) - TW6	2019/09/09	<MDL 3.0	80.00	No	No
Monochlorobenzene (Chlorobenzene) (ug/L) - TW3	2019/09/09	<MDL 0.5	80.00	No	No
Monochlorobenzene (Chlorobenzene) (ug/L) - TW5	2019/09/09	<MDL 0.5	80.00	No	No
Monochlorobenzene (Chlorobenzene) (ug/L) - TW7/8	2019/09/09	<MDL 0.5	80.00	No	No
Monochlorobenzene (Chlorobenzene) (ug/L) - TW6	2019/09/09	<MDL 0.5	80.00	No	No
Paraquat (ug/L) - TW3	2019/09/09	<MDL 1.0	10.00	No	No
Paraquat (ug/L) - TW5	2019/09/09	<MDL 1.0	10.00	No	No
Paraquat (ug/L) - TW7/8	2019/09/09	<MDL 1.0	10.00	No	No
Paraquat (ug/L) - TW6	2019/09/09	<MDL 1.0	10.00	No	No
PCB (ug/L) - TW3	2019/09/09	<MDL 0.05	3.00	No	No
PCB (ug/L) - TW5	2019/09/09	<MDL 0.05	3.00	No	No
PCB (ug/L) - TW7/8	2019/09/09	<MDL 0.05	3.00	No	No
PCB (ug/L) - TW6	2019/09/09	<MDL 0.05	3.00	No	No
Pentachlorophenol (ug/L) - TW3	2019/09/09	<MDL 0.1	60.00	No	No
Pentachlorophenol (ug/L) - TW5	2019/09/09	<MDL 0.1	60.00	No	No
Pentachlorophenol (ug/L) - TW7/8	2019/09/09	<MDL 0.1	60.00	No	No
Pentachlorophenol (ug/L) - TW6	2019/09/09	<MDL 0.1	60.00	No	No
Phorate (ug/L) - TW3	2019/09/09	<MDL 0.3	2.00	No	No
Phorate (ug/L) - TW5	2019/09/09	<MDL 0.3	2.00	No	No
Phorate (ug/L) - TW7/8	2019/09/09	<MDL 0.3	2	No	No
Phorate (ug/L) - TW6	2019/09/09	<MDL 0.3	2	No	No
Picloram (ug/L) - TW3	2019/09/09	<MDL 20.0	190	No	No
Picloram (ug/L) - TW5	2019/09/09	<MDL 20.0	190	No	No
Picloram (ug/L) - TW7/8	2019/09/09	<MDL 20.0	190	No	No
Picloram (ug/L) - TW6	2019/09/09	<MDL 20.0	190	No	No
Prometryne (ug/L) - TW3	2019/09/09	<MDL 0.1	1	No	No
Prometryne (ug/L) - TW5	2019/09/09	<MDL 0.1	1	No	No
Prometryne (ug/L) - TW7/8	2019/09/09	<MDL 0.1	1	No	No
Prometryne (ug/L) - TW6	2019/09/09	<MDL 0.1	1	No	No
Simazine (ug/L) - TW3	2019/09/09	<MDL 0.5	10	No	No
Simazine (ug/L) - TW5	2019/09/09	<MDL 0.5	10	No	No
Simazine (ug/L) - TW7/8	2019/09/09	<MDL 0.5	10	No	No
Simazine (ug/L) - TW6	2019/09/09	<MDL 0.5	10	No	No
Terbufos (ug/L) - TW3	2019/09/09	<MDL 0.3	1	No	No
Terbufos (ug/L) - TW5	2019/09/09	<MDL 0.3	1	No	No
Terbufos (ug/L) - TW7/8	2019/09/09	<MDL 0.3	1	No	No
Terbufos (ug/L) - TW6	2019/09/09	<MDL 0.3	1	No	No

	Sample Date (yyyy/mm/dd)	Sample Result	MAC	Number of Exceedances	
				MAC	1/2 MAC
Tetrachloroethylene (ug/L) - TW3	2019/09/09	<MDL 0.5	10	No	No
Tetrachloroethylene (ug/L) - TW5	2019/09/09	<MDL 0.5	10	No	No
Tetrachloroethylene (ug/L) - TW7/8	2019/09/09	<MDL 0.5	10	No	No
Tetrachloroethylene (ug/L) - TW6	2019/09/09	<MDL 0.5	10	No	No
2,3,4,6-Tetrachlorophenol (ug/L) - TW3	2019/09/09	<MDL 0.1	100	No	No
2,3,4,6-Tetrachlorophenol (ug/L) - TW5	2019/09/09	<MDL 0.1	100	No	No
2,3,4,6-Tetrachlorophenol (ug/L) - TW7/8	2019/09/09	<MDL 0.1	100	No	No
2,3,4,6-Tetrachlorophenol (ug/L) - TW6	2019/09/09	<MDL 0.1	100	No	No
Triallate (ug/L) - TW3	2019/09/09	<MDL 10.0	230	No	No
Triallate (ug/L) - TW5	2019/09/09	<MDL 10.0	230	No	No
Triallate (ug/L) - TW7/8	2019/09/09	<MDL 10.0	230	No	No
Triallate (ug/L) - TW6	2019/09/09	<MDL 10.0	230	No	No
Trichloroethylene (ug/L) - TW3	2019/09/09	<MDL 0.5	5	No	No
Trichloroethylene (ug/L) - TW5	2019/09/09	<MDL 0.5	5	No	No
Trichloroethylene (ug/L) - TW7/8	2019/09/09	<MDL 0.5	5	No	No
Trichloroethylene (ug/L) - TW6	2019/09/09	<MDL 0.5	5	No	No
2,4,6-Trichlorophenol (ug/L) - TW3	2019/09/09	<MDL 0.1	5	No	No
2,4,6-Trichlorophenol (ug/L) - TW5	2019/09/09	<MDL 0.1	5	No	No
2,4,6-Trichlorophenol (ug/L) - TW7/8	2019/09/09	<MDL 0.1	5	No	No
2,4,6-Trichlorophenol (ug/L) - TW6	2019/09/09	<MDL 0.1	5	No	No
2-methyl-4-chlorophenoxyacetic acid (MCPA) (ug/L) - TW3	2019/09/09	<MDL 10.0	100	No	No
2-methyl-4-chlorophenoxyacetic acid (MCPA) (ug/L) - TW5	2019/09/09	<MDL 10.0	100	No	No
2-methyl-4-chlorophenoxyacetic acid (MCPA) (ug/L) - TW7/8	2019/09/09	<MDL 10.0	100	No	No
2-methyl-4-chlorophenoxyacetic acid (MCPA) (ug/L) - TW6	2019/09/09	<MDL 10.0	100	No	No
Trifluralin (ug/L) - TW3	2019/09/09	<MDL 0.5	45	No	No
Trifluralin (ug/L) - TW5	2019/09/09	<MDL 0.5	45	No	No
Trifluralin (ug/L) - TW7/8	2019/09/09	<MDL 0.5	45	No	No
Trifluralin (ug/L) - TW6	2019/09/09	<MDL 0.5	45	No	No
Vinyl Chloride (ug/L) - TW3	2019/09/09	<MDL 0.2	1	No	No
Vinyl Chloride (ug/L) - TW5	2019/09/09	<MDL 0.2	1	No	No
Vinyl Chloride (ug/L) - TW7/8	2019/09/09	<MDL 0.2	1	No	No
Vinyl Chloride (ug/L) - TW6	2019/09/09	<MDL 0.2	1	No	No
Distribution Water					
Trihalomethane: Total (ug/L) Annual Average - DW	2020	8.3	100	No	No
HAA Total (ug/L) Annual Average - DW	2020	5.3	80.0	No	No

MAC = Maximum Allowable Concentration as per O.Reg 169/03
BDL = Below the laboratory detection level

Additional Legislated Samples

The following two tables are the sample results from additional sample collected at Well 5:

The first table contains the results of sample collected because the adjoining lands where once used for storage of electrical transformers. The transformers are no longer stored at the adjoining lands but sampling will continue. Please note the samples are collected on raw water. There is no MAC / IMAC (Maximum Acceptable Concentration / Interim Maximum Acceptable Concentration) for raw water but the treated water MAC /IMAC have been provided for reference.

The second table contains the results of sample collected because of the wells' proximity to the wastewater treatment lagoons. These results help to assess the integrity of the lagoon cells.

Raw Water: Well 5 Parameter	Unit of Measure	Sample Date	Result Value	ODWS	
				MAC	IMAC
Arsenic	ug/L	July 6, 2020	<0.0001		25.0
Chromium	ug/L	July 6, 2020	<0.002	50	
PCBs (Polychlorinated Biphenyls)	ug/L	July 6, 2020	<0.05		3.0

Treated Water Parameter	Unit of Measure	Treated Water: Well 5 Annual Average 2020
TKN (Total Kjeldahl Nitrogen)	mg/L	0.225
Total Phosphorus	mg/L	0.013
o-Phosphate (O-PO4)	mg/L	0.024
Dissolved Reactive Phosphorus	mg/L	0.016
NH3 + NH4 as N	mg/L	0.225

Major Maintenance Summary

WO #	Description
1584710	Capital Well 3 Surefeed Touchscreen Fail
1623775	Capital Blanket Items under $200
1751641	Capital SAI Global DWQMS external audit
1873053	Capital replace spool piece Well 7 & 8 Mississippi Mills
1916761	Capital Cl_2 Tank Level Sensor
1962436	Capital Remote Operated Vehicle Tower inspection Almonte
1963271	Capital Annual chlorine parts order for wells
1663109	Capital Communication tower install
2036570	Capital manufacture a shaft holding clamp for Well 7&8 pump shaft

Distribution Highlights

Distribution Highlights were provided by the Munipalitiy of Mississippi Mills.

Compliance Report Card

- MECP Inspections – Distribution - October 28, 2020 – on-site inspection of the Drinking Water System for 2020; Final Inspection Report Rating 100%
- QEMS External Audit – One (1) External On-Site Audit completed; no non-conformance

Distribution Highlights

Maintenance & Operations

- Water main flushing program completed
- Valve turning program ongoing; ¼ completed in 2020
- Fire flow testing throughout the entire system completed in 2020
- Several repairs – valves, hydrants, services, and curb stops
- New water mains commissioned on Martin Street, White Tail Ridge Phase 2 Subdivision, Mill Run Phase 5 Subdivision

Planning Initiatives

- Schedule 'B' Class EA - Water Storage – commenced Fall 2020, included foundation, infrastructure, structure installation. Anticipated completion Fall 2021
- Radio Frequency Meter Upgrades
- Annual Infiltration and Inflow Program
- Well Site Mechanical/Electrical/Instrumentation upgrades in 2020

Appendix A

WTRS Data and Submission Confirmation