



Mattawa Drinking Water System

Schedule 22

2020 SUMMARY REPORT

FOR MUNICIPALITIES



Schedule 22 - SUMMARY REPORTS FOR MUNICIPALITIES

1.0 Introduction

Drinking-Water System Name:	MATTAWA DRINKING WATER SYSTEM
Municipal Drinking Water Licence (MDWL) No.:	195-101-2 (issued July 25, 2016)
Drinking Water Work Permit (DWWP) No.:	195-201-2 (issued July 25, 2016)
Permit to Take Water (PTTW) No.:	1546-9GHPLM (issued February 27, 2014)
Period being reported:	January 1, 2020 to December 31, 2020

2.0 Requirements the System Failed to Meet

The last MECP inspection report dated November 17, 2020 identified one non-compliance items from 2020, findings discussed below, all items have been addressed.

According to information kept on record by OCWA; there was one non-compliance issue that occurred during 2020.

Issue Identified in Report/Order	Required Action or Recommendation Identified in Report/Order	Resp. for Action Item? (Client, OCWA, Joint)	Issue Analysis	Status (Complete or In Progress)
There were two instances in 2020 where the UVT analyzer failed to continuously monitor (every five minutes) while plant was in operation. 1239 to 1259 on March 11, 2020 and 1145 to 1343 on July 13, 2020.	UVT prior to and after analyzer failure was in good order. UV intensity and plant ran normally while UVT analyzer was out of service. Optiview (UVT Analyzer) began functioning shortly after failure. Forwarded trends to MECP. Instrument technician visited site and noted programming required to complete. Programming was completed November 2, 2020 to lockout plant upon instrument/analyzer failure or low UVT.	OCWA	There is no limit on UVT; however, it is required to be continuously monitored as per the MDWL. Investigating possibility of installing plant lockout upon instrument/analyzer failure. The plant lockout was installed on November 2, 2020 and will shut down plant upon instrument failure or alarm.	Complete

3.0 Summary of Quantities and Flow Rates

Flow Monitoring

MDWL No. 195-101 requires the owner to install a sufficient number of flow measuring devices to permit the continuous measurement and recording of:



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- the flow rate and daily volume of treated water that flows from the treatment subsystem the distribution system, and
- the flow rate and daily volume of water that flows into the treatment subsystem.

The flow monitoring equipment identified in the MDWL is present and operating as required. The flow meter is calibrated on an annual basis as specified in the manufacturers' instructions.

Water Usage

The following water usage tables summarize the quantities and flow rates of water taken and produced during the 2020 reporting period, including total monthly volumes, average monthly volumes, maximum monthly volumes, and maximum flow rates.

Raw Water

2020 - Monthly Summary of Water Takings from the Source (Well #1)

Regulated by Permit to Take Water (PTTW) #1546-9GHPLM, issued February 27, 2014

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Year to Date
Total Volume (m ³)	45642	47595	47627	39894	42513	44344	47416	35760	36317	33297	26459	31278	478144
Average Volume (m ³ /d)	1472	1641	1536	1330	1371	1478	1530	1154	1211	1074	882	1009	1307
Maximum Volume (m ³ /d)	1748	1832	1799	1572	1703	1858	2332	1547	1525	1503	1096	1265	2332
PTTW - Maximum Allowable Volume (m ³ /day)	4582	4582	4582	4582	4582	4582	4582	4582	4582	4582	4582	4582	4582
Maximum Flow Rate (L/min)	5152	5060	4393	5091	4533	4817	4997	4378	4568	5617	4438	5332	5617
PTTW - Maximum Allowable Flow Rate (L/min)	3183	3183	3183	3183	3183	3183	3183	3183	3183	3183	3183	3183	3183

Well #1 experiences false peaks.

2020 - Monthly Summary of Water Takings from the Source (Well #2)

Regulated by Permit to Take Water (PTTW) #1546-9GHPLM, issued February 27, 2014

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Year to Date
Total Volume (m ³)	10817	13319	12461	11257	7437	7669	6580	5125	4995	5798	5001	6152	96610
Average Volume (m ³ /d)	349	459	402	375	240	256	212	165	166	187	167	198	265
Maximum Volume (m ³ /d)	582	563	539	447	469	410	571	558	623	460	444	455	623
PTTW - Maximum Allowable Volume (m ³ /day)	1964	1964	1964	1964	1964	1964	1964	1964	1964	1964	1964	1964	1964
Maximum Flow Rate (L/min)	1727	1631	1685	1689	1742	1681	1743	1672	1668	1360	1361	1361	1743
PTTW - Maximum Allowable Flow Rate (L/min)	1364	1364	1364	1364	1364	1364	1364	1364	1364	1364	1364	1364	1364

Well #2 continuously exceeded instantaneous limit, until September 22, 2020 when VFD was installed. Well #2 now only has the odd false peak on start up.

2020 - Monthly Summary of Combined Water Takings from the Source (Well#1 and Well #2)

Regulated by Permit to Take Water (PTTW) #1546-9GHPLM, issued February 27, 2014

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Year to Date
Total Volume (m ³)	56460	60914	60088	51152	49950	52013	53996	40885	41312	39095	31460	37430	574754
Average Volume (m ³ /d)	1821	2100	1938	1705	1611	1734	1742	1319	1377	1261	1049	1207	1572
Maximum Volume (m ³ /d)	2042	2303	2295	2019	1768	2078	2659	1547	1712	1674	1404	1549	2659
PTTW - Maximum Allowable Volume (m ³ /day)	6546	6546	6546	6546	6546	6546	6546	6546	6546	6546	6546	6546	6546



The system's Permit to Take Water #1546-9GHPLM, allows the Municipality to withdraw water at the following rates:

Well No. 1: 4582.08 m³/day / 3183 L/minute

Well No. 2: 1964.16 m³/day / 1364 L/minute

Total Combined Daily Volume: 6546.24 m³/day

The system's Permit to Take Water #1546-9GHPLM allows the municipality to withdraw a maximum volume of 4582.08 m³ from Well No. 1 and 1964.16 m³ from Well No. 2 each day with a maximum of 6456.24 m³/d combined. A review of the raw water flow data indicates that the system never exceeded this allowable limit having a maximum volume of 2659 m³ in July 2020. The Permit also allows a maximum flow rate of 3183 L/minute for Well No. 1 and 1364 L/minute for Well No. 2. The PTTW instantaneous flow rates had been continuously exceeded for Well 2 until September 22, 2020 when a VFD was installed, now Well 2 only has the odd false peak on start up. Well 1 experiences false peaks on start-up and switch over, having a maximum recorded flow of 5617 L/minute in October 2020 for Well 1 and 1743 L/minute in July 2020 for Well 2.

Treated Water

2020 - Monthly Summary of Treated Water Supplied to the Distribution System

Regulated by Municipal Drinking Water Licence (MDWL) #195-101 - Issue 2, issued July 25, 2016

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Year to Date
Total Volume (m ³)	56460	60914	60088	51152	49950	52013	53996	40885	41312	39095	31460	37430	574754
Average Volume (m ³ /d)	1821	2100	1938	1705	1611	1734	1742	1319	1377	1261	1049	1207	1572
Maximum Volume (m ³ /d)	2042	2303	2295	2019	1768	2078	2659	1547	1712	1674	1404	1549	2659
MDWL - Rated Capacity (m ³ /day)	6540	6540	6540	6540	6540	6540	6540	6540	6540	6540	6540	6540	6540

Schedule C, Section 1.1 of MDWL No. 195-101 states that the maximum daily volume of treated water that flows from the treatment subsystem to the distribution system shall not exceed a maximum flow rate of 6540 m³/day. The Mattawa DWS complied with this limit having a recorded maximum volume of 2659 m³ in July 2020, which is 40.7% of the rated capacity.

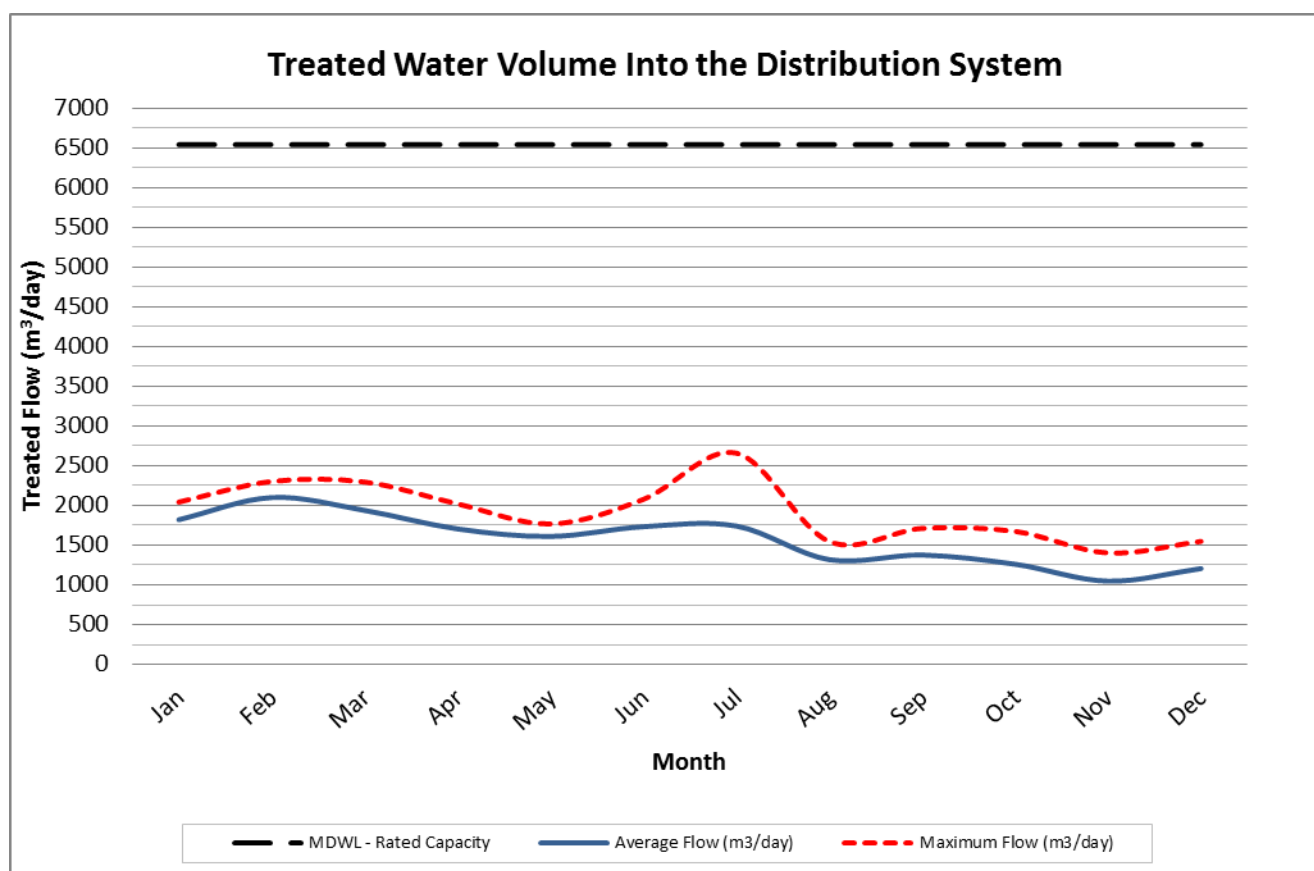
Figure 1 compares the average and maximum flow rates into the distribution system to the rated capacity of the system identified in the MDWL. This information enables the Owner to assess the system's existing and future planned water usage needs.



Comparison of the Flow Summary to the Systems Licence & Permit

Rated Capacity of the Plant (MDWL)	6540 m ³ /day	
Average Daily Flow for 2020	1572 m ³ /day	24.0% of the rated capacity
Maximum Daily Flow for 2020	2659 m ³ /day	40.7% of the rated capacity
Total Treated Water Produced in 2020	574,754 m ³	

The Mattawa Water Treatment Plant is rated to produce 6540 cubic meters of water per day as specified in the system's Municipal Drinking Water Licence. The average daily flow was 1572 m³ per day, which is 24.0% of the rated capacity. This information clearly shows that the plant is well within its rated capacity and is able to meet current demands of consumers.



CONCLUSION

In 2020, according to information kept on record by OCWA, the Mattawa DWS provided safe and reliable drinking water to the community of Mattawa. The system complied with the regulatory requirements of the Safe Drinking Water Act and its Regulations and met the terms and conditions outlined in its site specific drinking water works permit and municipal drinking water licence with the exception of one non-compliance issue during the reporting period. One non-compliance issue occurred in 2020 and was identified in the annual MECP inspection on November 17, 2020. Furthermore, the Mattawa DWS did not have any adverse water quality incidents reported to the MOE's Spills Action Centre.



APPENDIX A

Monthly Summary of Microbiological Test Results

Mattawa Drinking Water System
Monthly Summary of Microbiological Test Results

From: 01/01/2020 to 31/12/2020

Report extracted 01/13/2021 14:18

Facility Org Number: 1517
Facility Works Number: 210001905
Facility Name: MATTAWA DRINKING WATER SYSTEM
Total Design Capacity: 6540.0 m3/day

	01/2020	02/2020	03/2020	04/2020	05/2020	06/2020	07/2020	08/2020	09/2020	10/2020	11/2020	12/2020	Total	Avg	Max	Min
DW / E. Coli - cfu/100mL																
Count Lab	12	12	15	12	12	15	12	12	15	15	12	15	159			
Max Lab	0	0	0	0	0	0	0	0	0	0	0	0			0	
Mean Lab	0	0	0	0	0	0	0	0	0	0	0	0		0		
Min Lab	0	0	0	0	0	0	0	0	0	0	0	0				0
DW / HPC - cfu/mL																
Count Lab	3	3	3	3	3	3	3	3	3	3	3	3	36			
Max Lab	57	2	36	1	0	0	83	600	12	2	0	26			600	
Mean Lab	19.667	0.667	12	0.667	0	0	29	200.667	4	0.667	0	8.667		21.846		
Min Lab	0	0	0	0	0	0	0	0	0	0	0	0				0
DW / Total Coliform: TC - cfu/100mL																
Count Lab	12	12	15	12	12	15	12	12	15	15	12	15	159			
Max Lab	0	0	0	0	0	0	0	0	0	0	0	0			0	
Mean Lab	0	0	0	0	0	0	0	0	0	0	0	0		0		
Min Lab	0	0	0	0	0	0	0	0	0	0	0	0				0
TW / E. Coli: EC - cfu/100mL																
Count Lab	4	4	5	4	4	5	4	4	5	5	4	5	53			
Max Lab	0	0	0	0	0	0	0	0	0	0	0	0			0	
Mean Lab	0	0	0	0	0	0	0	0	0	0	0	0		0		
Min Lab	0	0	0	0	0	0	0	0	0	0	0	0				0
TW / HPC - cfu/mL																
Count Lab	4	4	5	4	4	5	4	4	5	5	4	5	53			
Max Lab	1	1	2	1	2	1	0	0	0	0	1	6			6	
Mean Lab	0.25	0.25	0.4	0.25	1	0.2	0	0	0	0	0.25	1.4		0.34		
Min Lab	0	0	0	0	0	0	0	0	0	0	0	0				0
TW / Total Coliform: TC - cfu/100mL																
Count Lab	4	4	5	4	4	5	4	4	5	5	4	5	53			
Max Lab	0	0	0	0	0	0	0	0	0	0	0	0			0	
Mean Lab	0	0	0	0	0	0	0	0	0	0	0	0		0		
Min Lab	0	0	0	0	0	0	0	0	0	0	0	0				0
Well #1 / E. Coli: EC - cfu/100mL																
Count Lab	4	4	5	4	4	5	4	4	5	5	4	5	53			
Max Lab	0	0	0	0	0	0	0	0	0	0	0	0			0	
Mean Lab	0	0	0	0	0	0	0	0	0	0	0	0		0		
Min Lab	0	0	0	0	0	0	0	0	0	0	0	0				0
Well #1 / Total Coliform: TC - cfu/100mL																
Count Lab	4	4	5	4	4	5	4	4	5	5	4	5	53			
Max Lab	0	0	0	0	0	0	0	1	0	1	0	0			1	
Mean Lab	0	0	0	0	0	0	0	0.25	0	0.2	0	0		0.038		
Min Lab	0	0	0	0	0	0	0	0	0	0	0	0				0
Well #2 / E. Coli: EC - cfu/100mL																
Count Lab	4	4	5	4	4	5	4	4	5	5	4	5	53			
Max Lab	0	0	0	0	0	0	0	0	0	0	0	0			0	
Mean Lab	0	0	0	0	0	0	0	0	0	0	0	0		0		
Min Lab	0	0	0	0	0	0	0	0	0	0	0	0				0
Well #2 / Total Coliform: TC - cfu/100mL																
Count Lab	4	4	5	4	4	5	4	4	5	5	4	5	53			
Max Lab	0	0	0	0	0	0	0	0	0	2	1	0			2	
Mean Lab	0	0	0	0	0	0	0	0	0	0.4	0.25	0		0.057		
Min Lab	0	0	0	0	0	0	0	0	0	0	0	0				0



APPENDIX B

Monthly Summary of Operational Data

Mattawa Drinking Water System
Monthly Operational Data

From: 01/01/2020 to 31/12/2020

Report extracted 01/18/2021 16:43

Facility Org Number: 1517
Facility Works Number: 210001905
Facility Name: MATTAWA DRINKING WATER SYSTEM
Total Design Capacity: 6540.0 m3/day

	01/2020	02/2020	03/2020	04/2020	05/2020	06/2020	07/2020	08/2020	09/2020	10/2020	11/2020	12/2020	Total	Avg	Max	Min
DW / CI Residual: Free DW1 - mg/L																
Count IH	9	8	9	9	8	9	9	8	9	9	8	10	105			
Total IH	5.68	4.07	6.03	6.56	4.61	6.04	4.85	3.94	5.42	4.71	5.45	6.6	63.96			
Max IH	0.87	0.79	1.03	0.85	0.81	0.98	0.72	0.98	0.98	0.8	0.86	0.94			1.03	
Mean IH	0.631	0.509	0.67	0.729	0.576	0.671	0.539	0.492	0.602	0.523	0.681	0.66		0.609		
Min IH	0.37	0.2	0.51	0.47	0.33	0.35	0.29	0.24	0.38	0.3	0.48	0.37				0.2
DW / CI Residual: Free DW2 - mg/L																
Count IH	9	8	9	9	8	9	9	8	9	9	8	10	105			
Total IH	6.21	5.21	6.08	8	5.81	6.53	6.81	5.39	6.4	5.75	5.67	6.17	74.03			
Max IH	0.97	0.81	0.89	1.18	0.88	1.1	1.15	0.95	1.05	0.91	0.89	1.07			1.18	
Mean IH	0.69	0.651	0.676	0.889	0.726	0.726	0.757	0.674	0.711	0.639	0.709	0.617		0.705		
Min IH	0.43	0.45	0.47	0.57	0.43	0.34	0.31	0.35	0.45	0.33	0.39	0.29				0.29
DW / CI Residual: Free DW3 - mg/L																
Count IH	9	8	9	9	8	9	9	8	9	9	8	10	105			
Total IH	6.73	4.94	6.86	6.63	4.91	6.45	7.11	6.69	6.92	6.75	5.8	6.93	76.72			
Max IH	0.95	0.84	0.95	1.07	0.85	0.97	1.1	1	0.98	1.08	1.04	1.24			1.24	
Mean IH	0.748	0.617	0.762	0.737	0.614	0.717	0.79	0.836	0.769	0.75	0.725	0.693		0.731		
Min IH	0.5	0.48	0.44	0.38	0.48	0.45	0.55	0.52	0.37	0.3	0.44	0.35				0.3
DW / CI Residual: Free DW4 - mg/L																
Count IH	4	4	5	4	4	5	4	4	5	4	4	5	52			
Total IH	2.28	1.88	3	3.12	2.03	3.24	3.34	2.86	3.47	2.1	2.32	2.91	32.55			
Max IH	0.8	0.6	0.75	0.95	0.77	0.89	1.05	0.99	0.84	0.68	0.76	0.84			1.05	
Mean IH	0.57	0.47	0.6	0.78	0.508	0.648	0.835	0.715	0.694	0.525	0.58	0.582		0.626		
Min IH	0.43	0.32	0.5	0.7	0.33	0.44	0.58	0.35	0.46	0.41	0.38	0.33				0.32
Well #1 / Turbidity - NTU																
Count IH	1	1	1	1	1	1	1	1	1	1	1	1	12			
Total IH	0.27	0.5	0.38	0.37	0.35	0.31	0.28	0.31	0.29	0.33	0.45	0.25	4.09			
Max IH	0.27	0.5	0.38	0.37	0.35	0.31	0.28	0.31	0.29	0.33	0.45	0.25			0.5	
Mean IH	0.27	0.5	0.38	0.37	0.35	0.31	0.28	0.31	0.29	0.33	0.45	0.25		0.341		
Min IH	0.27	0.5	0.38	0.37	0.35	0.31	0.28	0.31	0.29	0.33	0.45	0.25				0.25
Well #2 / Turbidity - NTU																
Count IH	1	1	1	1	1	1	1	1	1	1	1	1	12			
Total IH	0.3	0.76	0.22	0.26	0.28	0.27	0.27	0.28	0.3	0.29	0.27	0.21	3.71			
Max IH	0.3	0.76	0.22	0.26	0.28	0.27	0.27	0.28	0.3	0.29	0.27	0.21			0.76	
Mean IH	0.3	0.76	0.22	0.26	0.28	0.27	0.27	0.28	0.3	0.29	0.27	0.21		0.309		
Min IH	0.3	0.76	0.22	0.26	0.28	0.27	0.27	0.28	0.3	0.29	0.27	0.21				0.21