Woodville Drinking Water System

2024 Annual Water Report

Drinking Water System Number: 210001077

Drinking Water System Operating Authorities: City of Kawartha Lakes and Ontario Clean Water Agency

Drinking Water System Category: Large Municipal Residential

Reporting Period: January 1 – December 31, 2024

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Annual Drinking Water Report
City of Kawartha Lakes

Kawartha Lakes
Jump In

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2024 Annual Drinking Water System Summary Report

General Information

The City of Kawartha Lakes prepares a report summarizing system operation and water quality for every municipal drinking water system annually. This report has been prepared to satisfy the annual reporting requirements in O. Reg. 170/03 Section 11 and Schedule 22. The annual reports will be available to residents at the City of Kawartha Lakes Public Works Administration Office by appointment and the City's website. Notification that the reports are available free of charge will be made on the City of Kawartha Lakes website. The City of Kawartha Lakes Public Works Administration Office is located at 322 Kent Street West in Lindsay, Ontario.

This system does not serve more than 10,000 residences.

Drinking Water System Number: 210001077
Drinking Water System Name: Woodville Drinking Water System
Drinking Water System Owner: City of Kawartha Lakes
Drinking Water System Category: Large Municipal Residential
Reporting Period: January 1, 2024 – December 31, 2024

Compliance Summary

Table 1. Drinking Water Compliance Summary

	Number of Events	Date	Details
Ministry (MECP) Inspections	2	February 15, 2024 November 28, 2024	2023/2024 Announced Drinking Water Inspection, Inspection Rating 97.67% 2024/2025 Announced Focused Drinking Water Inspection. Final Report received January 20, 2025, Inspection Rating 100%
Adverse Water Quality Incidents (AWQIs)	0		

	Number of Events	Date	Details
Non-Compliances	1	2023/2024 MECP Inspection	Found during the inspection that the turbidity analyzer calibration was not performed within the 90 days as per the manufacturer requirements.
Boil Water Advisories	0		
Health and Safety	0		

Drinking Water System Description

The Woodville drinking water system is a large municipal residential drinking water system that serves the Village of Woodville, in the City of Kawartha Lakes. The drinking water system is classified as a Class I Water Treatment and Class I Water Distribution subsystems under O. Reg. 128/04

Source Water

The water supply for the system comes from two groundwater wells: Well #1 and Well #2. There is an additional well (Well #3) that is a pond makeup well. The wells are designated as GUDI (groundwater under the direct influence of surface water).

Water Treatment Facility

The treatment system consists of two (2) treatment trains in parallel. Each train consists of two (2) cartridge filter assemblies and a sodium hypochlorite disinfection system. There are on-line turbidimeters on each filter effluent line to monitor filter effluent turbidity. There is a 90 m 600 mm diameter watermain that is located from the pumphouse along County Road 46 that serves as a chlorine contact chamber. A building is located at the end of this pipe that houses a chlorine analyzer to ensure proper disinfection.

A diesel generator is onsite to provide standby power to the water treatment facility in the event of a power failure.

Distribution System

The distribution system has approximately 8.7 kilometers of watermains and is not rated for fire protection. The watermains in the Woodville Distribution System are all PVC. Water storage is provided in a standpipe with an approximate capacity of 1160 m^3. The standpipe serves to provide pressure equalization within the distribution system. There are no chlorine boosting or secondary disinfection capabilities within the control of the distribution system.

Table 2. Treatment Chemicals Used

Chemical Name	Use	Supplier
Sodium Hypochlorite	Disinfection	Jutzi

Summary of Non-Compliance

Adverse Water Quality Incidents

There were no adverse water quality incidents reported during the reporting period.

Non-Compliance

There were no non-compliances reported during the reporting period.

Non-Compliance Identified in a Ministry Inspection

Table 3. Non-Compliance Identified in a Ministry Inspection

Legislation	Requirement(s) System Failed to Meet	Duration of Failure (Dates)	Corrective Action	Status
O. Reg. 170/03 Section 6-5	Calibration of Equipment	MECP Inspection 2023/2024	Created a turbidity analyzer record sheet, modified the sample calendar to include turbidity analyzer calibration.	Completed

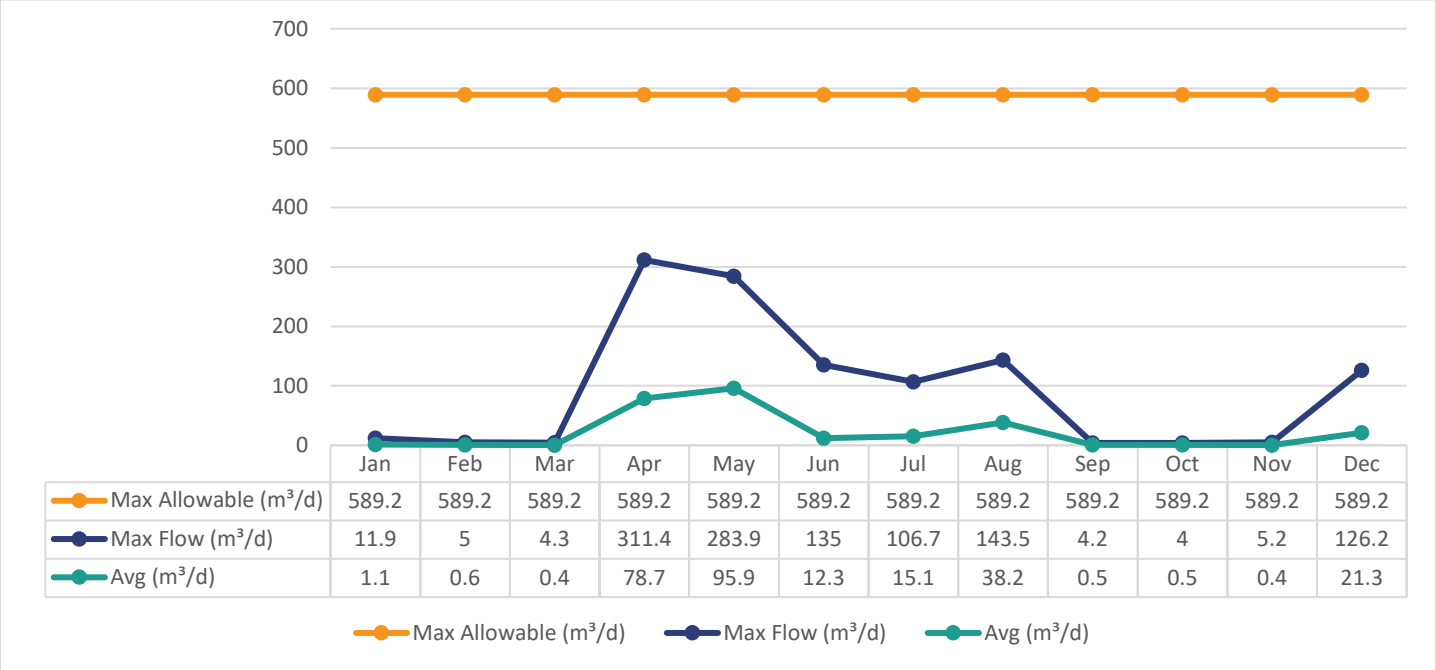
Flows

The Woodville Drinking Water System is operating on average under half the rated capacity. The rated capacity of the system (treated water flows) is 588 m^3/day.

Raw Water Flows

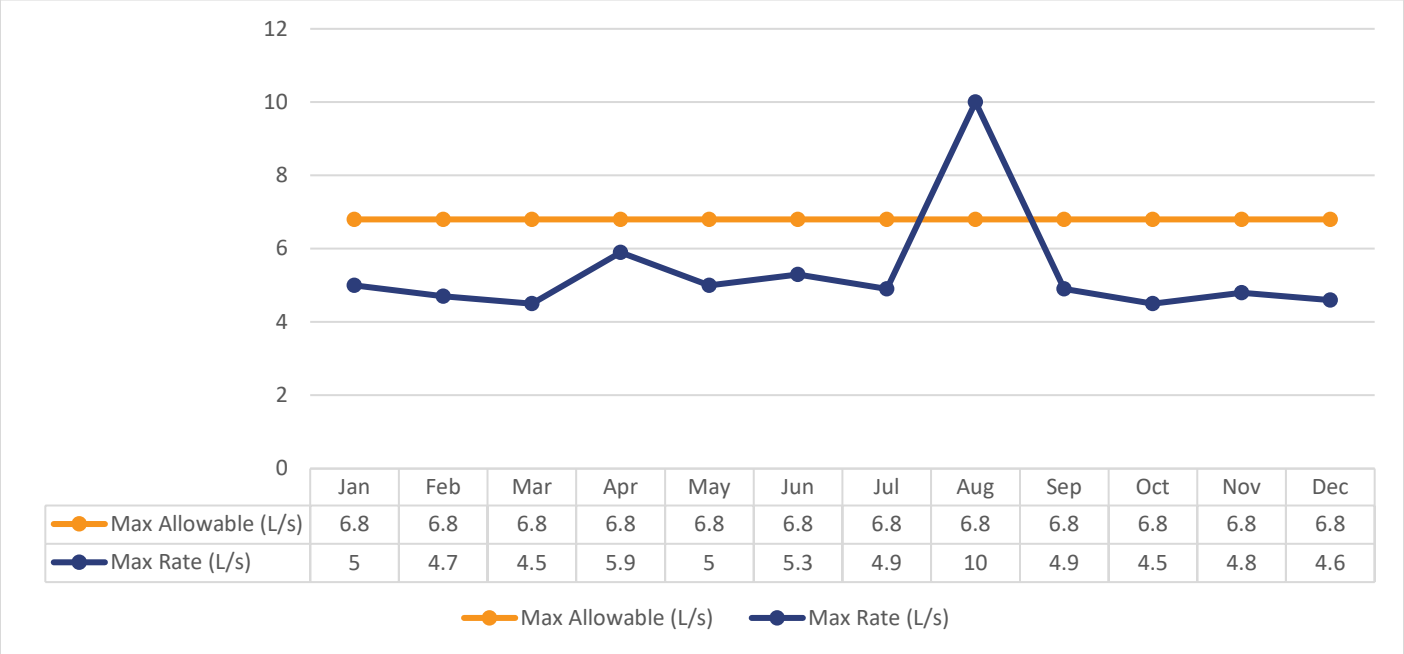
The raw water flows are regulated under the Permit to Take Water. Raw flow data for 2024 was submitted to the Ministry of Environment, Conservation and Parks (MECP) electronically under permit #1207-AHKRXV. The confirmation of the data that was submitted is attached in Appendix A.

Graph 1. Total Monthly Flows (m³/d) – Well #1 (Max Allowable PTTW)



	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Max Allowable (m³/d)	589.2	589.2	589.2	589.2	589.2	589.2	589.2	589.2	589.2	589.2	589.2	589.2
Max Flow (m³/d)	11.9	5	4.3	311.4	283.9	135	106.7	143.5	4.2	4	5.2	126.2
Avg (m³/d)	1.1	0.6	0.4	78.7	95.9	12.3	15.1	38.2	0.5	0.5	0.4	21.3

Graph 2. Monthly Rated Flows (L/s) – Well #1 (Max Allowable Rate PTTW)

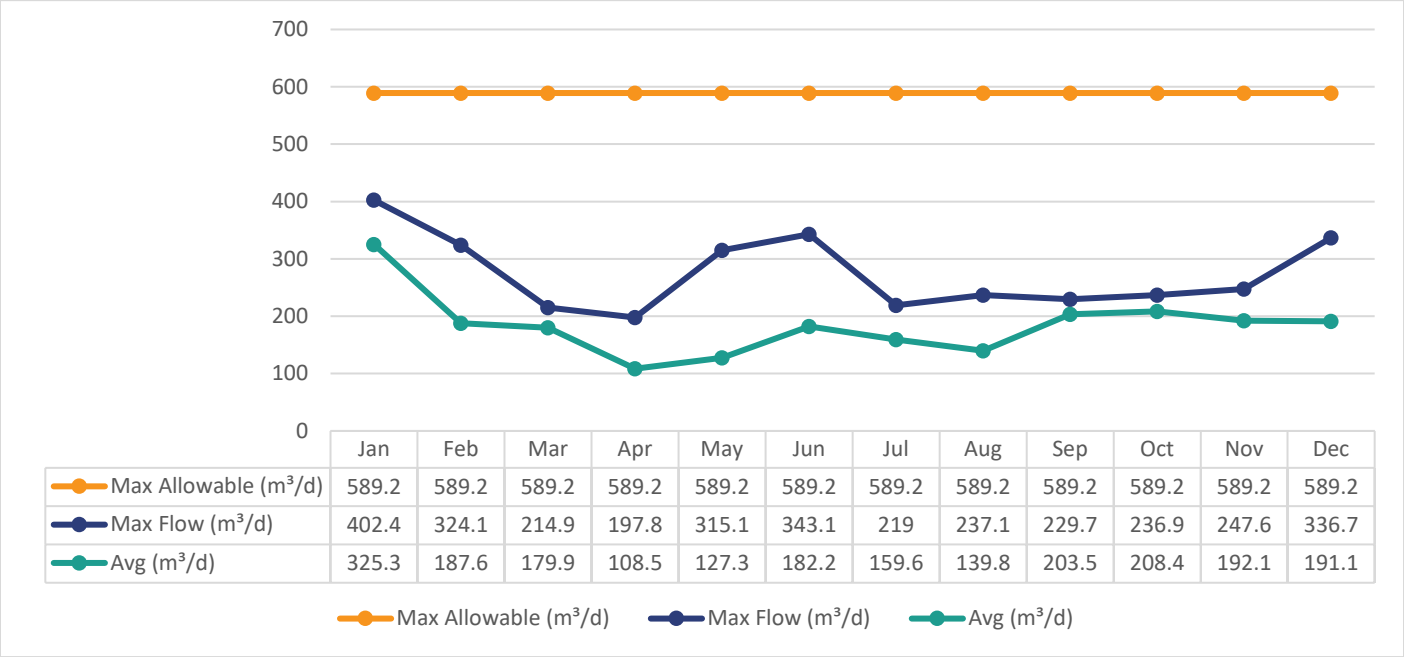


	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Max Allowable (L/s)	6.8	6.8	6.8	6.8	6.8	6.8	6.8	6.8	6.8	6.8	6.8	6.8
Max Rate (L/s)	5	4.7	4.5	5.9	5	5.3	4.9	10	4.9	4.5	4.8	4.6

Note: The above table shows there were exceedances in instantaneous peak flow rate (L/s) but these exceedances were short in duration. Spikes recorded by on-line instrumentation were a result of air bubbles and various maintenance/calibration activities. The significant spike in August

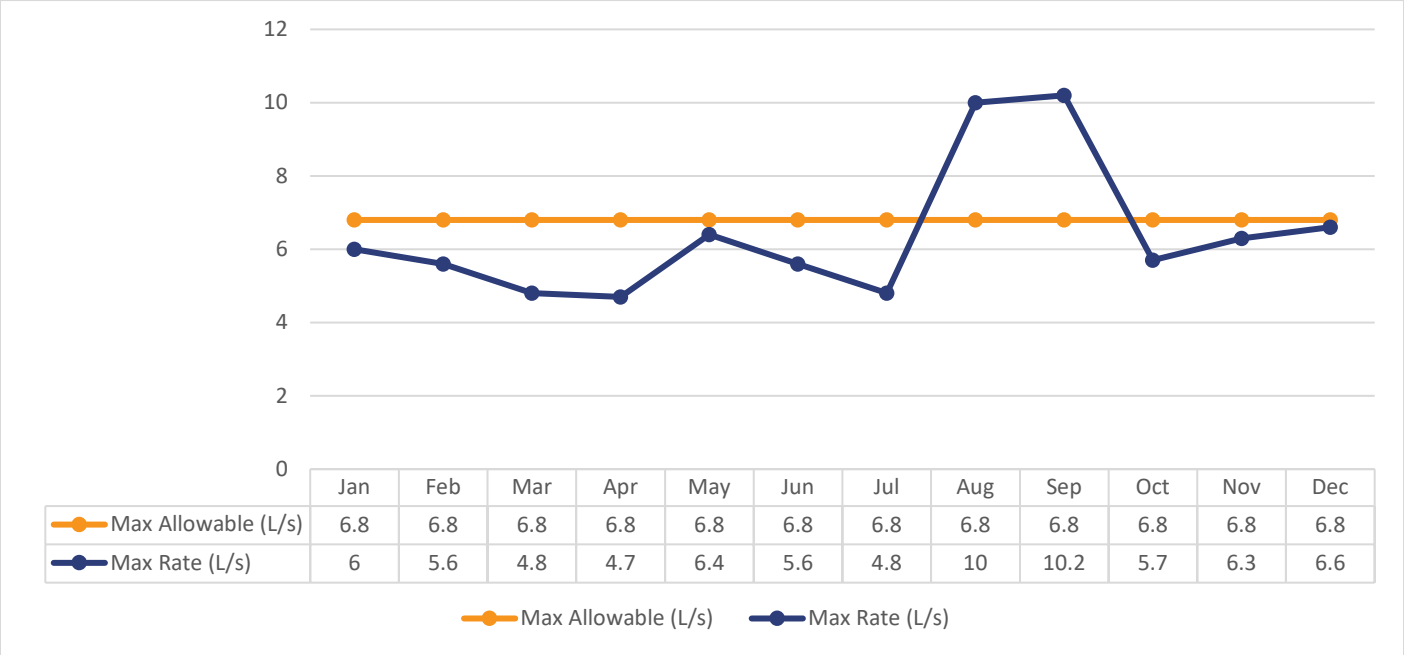
was due to scheduled flow meter calibration. All spikes are reviewed for compliance with O. Reg. 170/03.

Graph 3. Total Monthly Flows (m³/d) – Well #2 (Max Allowable PTTW)



	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Max Allowable (m³/d)	589.2	589.2	589.2	589.2	589.2	589.2	589.2	589.2	589.2	589.2	589.2	589.2
Max Flow (m³/d)	402.4	324.1	214.9	197.8	315.1	343.1	219	237.1	229.7	236.9	247.6	336.7
Avg (m³/d)	325.3	187.6	179.9	108.5	127.3	182.2	159.6	139.8	203.5	208.4	192.1	191.1

Graph 4. Monthly Rated Flows (L/s) – Well #2 (Max Allowable Rate PTTW)

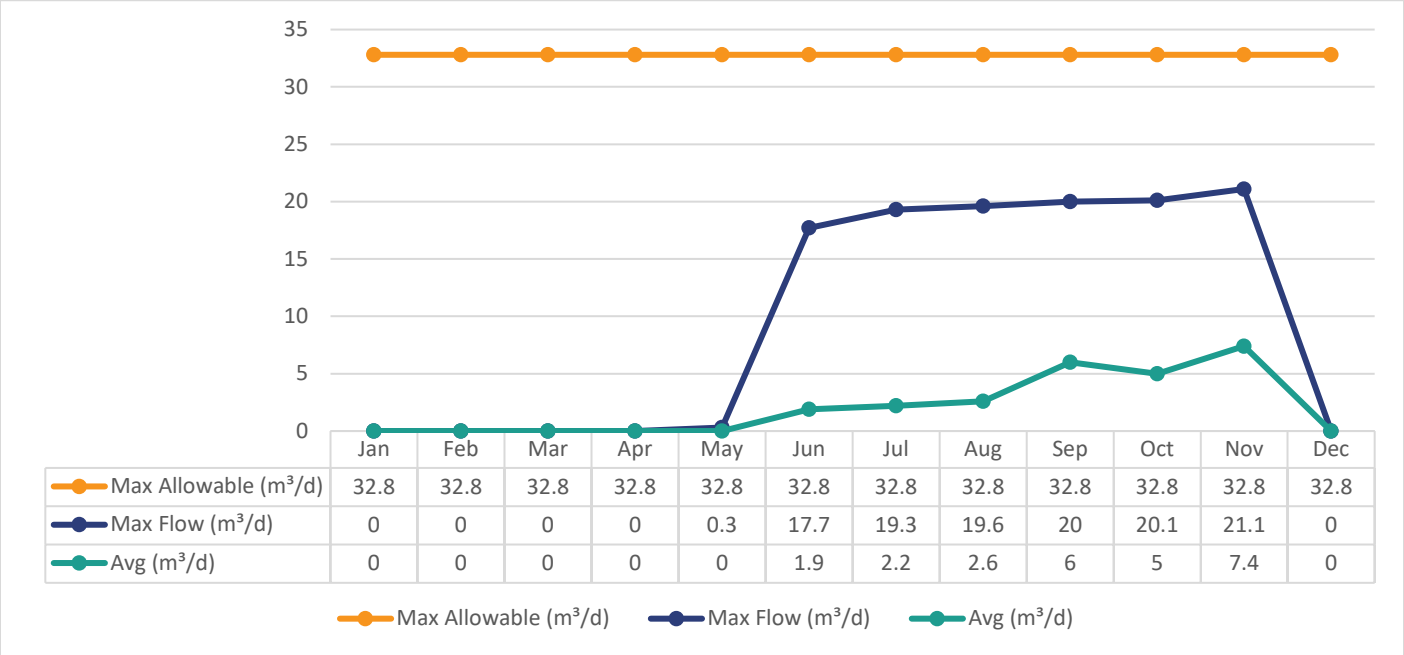


	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Max Allowable (L/s)	6.8	6.8	6.8	6.8	6.8	6.8	6.8	6.8	6.8	6.8	6.8	6.8
Max Rate (L/s)	6	5.6	4.8	4.7	6.4	5.6	4.8	10	10.2	5.7	6.3	6.6

Note: The above table shows there were exceedances in instantaneous peak flow rate (L/s) but these exceedances were short in duration. Spikes recorded by on-line instrumentation were a

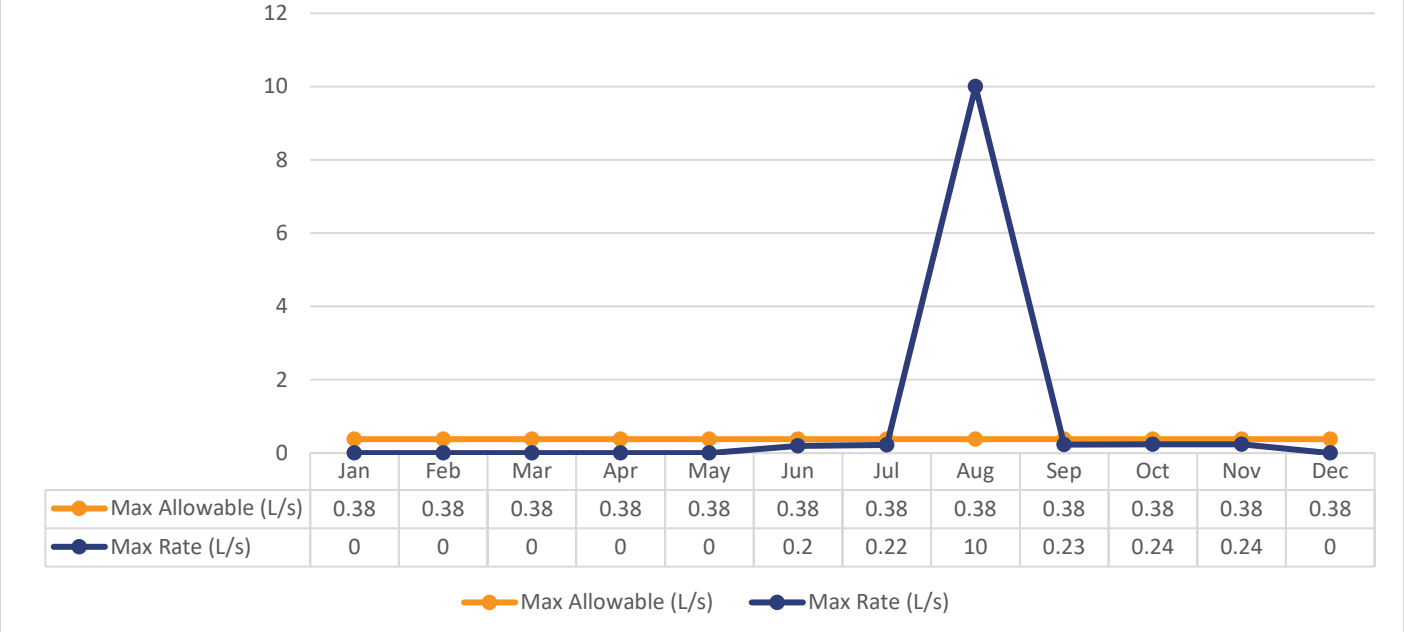
result of air bubbles and various maintenance/calibration activities. The significant spike in August was due to scheduled flow meter calibration. All spikes are reviewed for compliance with O. Reg. 170/03.

Graph 5. Total Monthly Flows (m³/d) – Well #3 Pond Makeup Well (Max Allowable PTTW)



	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Max Allowable (m³/d)	32.8	32.8	32.8	32.8	32.8	32.8	32.8	32.8	32.8	32.8	32.8	32.8
Max Flow (m³/d)	0	0	0	0	0.3	17.7	19.3	19.6	20	20.1	21.1	0
Avg (m³/d)	0	0	0	0	0	1.9	2.2	2.6	6	5	7.4	0

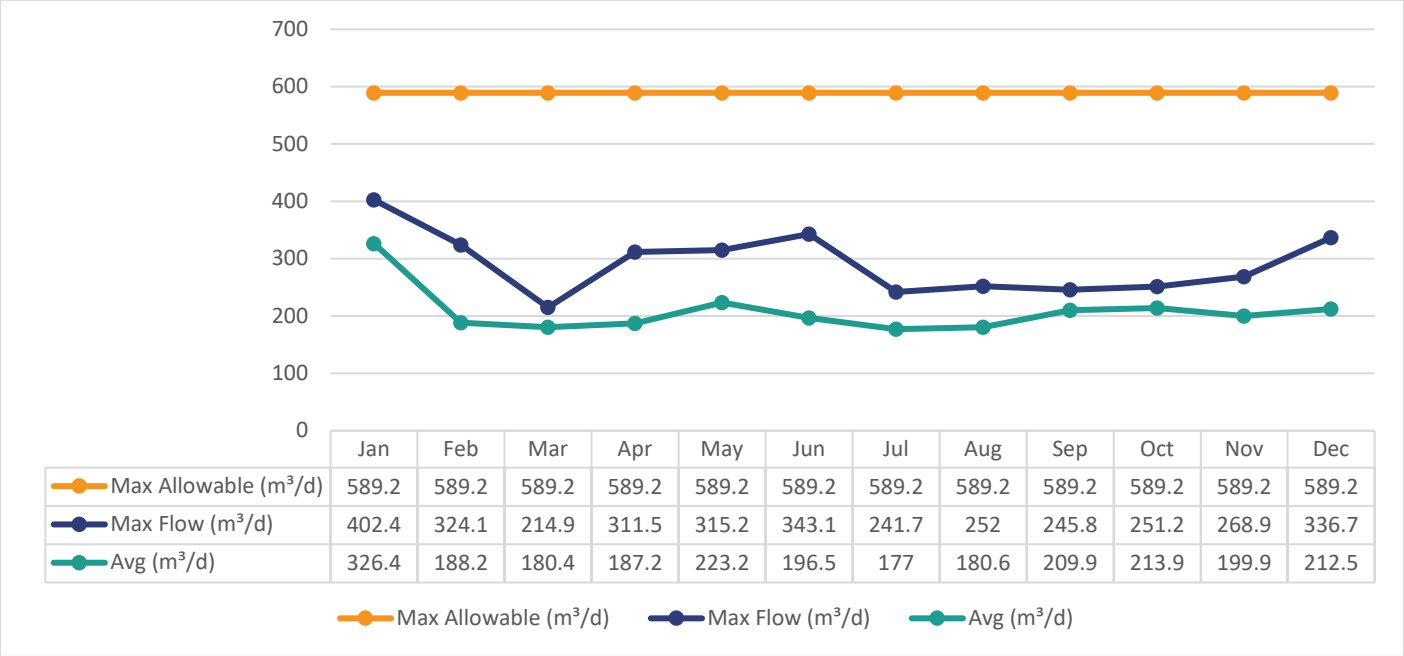
Graph 6. Monthly Rated Flows (L/s) – Well #3 Pond Makeup Well (Max Allowable Rate PTTW)



	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Max Allowable (L/s)	0.38	0.38	0.38	0.38	0.38	0.38	0.38	0.38	0.38	0.38	0.38	0.38
Max Rate (L/s)	0	0	0	0	0	0.2	0.22	10	0.23	0.24	0.24	0

Note: The above table shows there were exceedances in instantaneous peak flow rate (L/s) but these exceedances were short in duration. Spikes recorded by on-line instrumentation were a result of air bubbles and various maintenance/calibration activities. The significant spike in August was due to scheduled flow meter calibration. All spikes are reviewed for compliance with O. Reg. 170/03.

Graph 7. Total Monthly Raw Flows (m³/day) –Max Allowable Rate PTTW

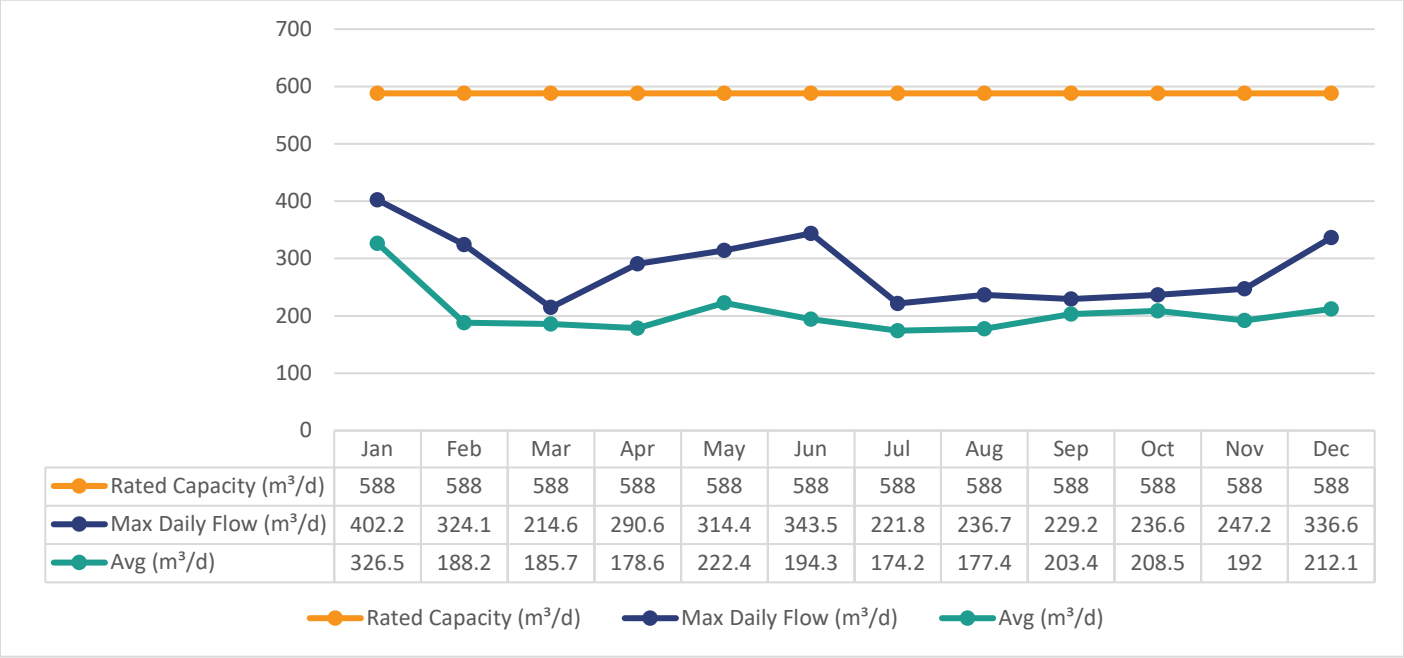


	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Max Allowable (m³/d)	589.2	589.2	589.2	589.2	589.2	589.2	589.2	589.2	589.2	589.2	589.2	589.2
Max Flow (m³/d)	402.4	324.1	214.9	311.5	315.2	343.1	241.7	252	245.8	251.2	268.9	336.7
Avg (m³/d)	326.4	188.2	180.4	187.2	223.2	196.5	177	180.6	209.9	213.9	199.9	212.5

Treated Water Flows

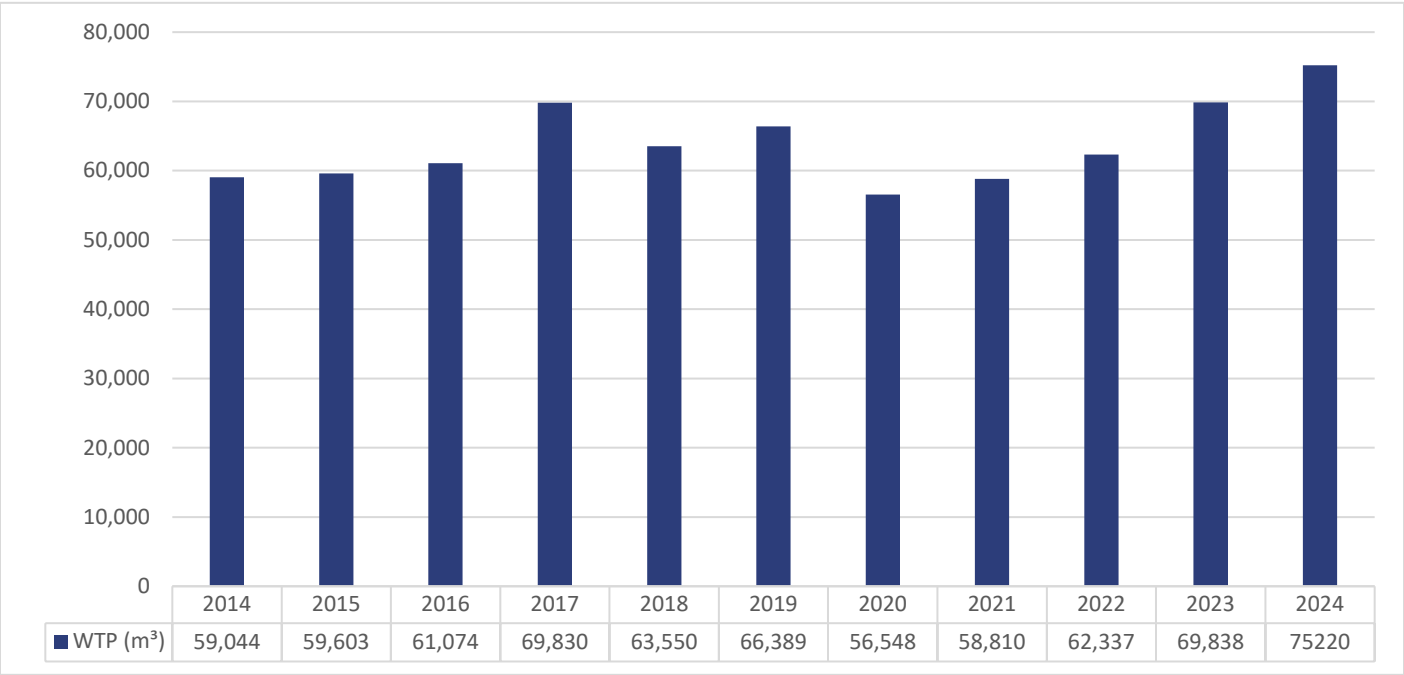
The Treated Water flows are regulated under the Municipal Drinking Water Licence 141-115.

Graph 8. Monthly Rated Flows (m³/d) – Rated Capacity - MDWL



	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Rated Capacity (m³/d)	588	588	588	588	588	588	588	588	588	588	588	588
Max Daily Flow (m³/d)	402.2	324.1	214.6	290.6	314.4	343.5	221.8	236.7	229.2	236.6	247.2	336.6
Avg (m³/d)	326.5	188.2	185.7	178.6	222.4	194.3	174.2	177.4	203.4	208.5	192	212.1

Graph 9. Annual Total Flow Comparison (m³)



	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
WTP (m³)	59,044	59,603	61,074	69,830	63,550	66,389	56,548	58,810	62,337	69,838	75220

Regulatory Sample Results Summary

Microbiological Testing

Table 4. Microbiological Test Results

	No. of Samples Collected	Range of E. Coli Results	Range of E. Coli Results	Range of Total Coliform Results	Range of Total Coliform Results	Range of HPC Results	Range of HPC Results
		Min	Max	Min	Max	Min	Max
Raw Well 1	52	0	0	0	4	N/A	N/A
Raw Well 2	54	0	1	0	2	N/A	N/A
Treated	54	0	0	0	0	0	3
Distribution	159	0	0	0	0	0	15

OG = Overgrowth
HPC = Heterotrophic Plate Count

Operational Testing

Table 5. Operational Test Results

Parameter	Number of Samples Collected	Range of Results Minimum	Range of Results Maximum
Turbidity Well 1 (NTU)	52	0.17	0.95
Turbidity Well 2 (NTU)	52	0.08	0.89
Turbidity – Filter 1/2 (NTU)	8760	0	2.00
Turbidity – Filter 3/4 (NTU)	8760	0	2.00
Chlorine	8760	0	3.40
Fluoride (If the DWS provides fluoridation)	N/A	N/A	N/A

Note: Record the unit of measurement if it is **not** milligrams per litre.
Note: For continuous monitors 8760 is used as the number of samples. Spikes recorded by online 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 five years. Nitrate and Nitrate are tested quarterly and the metals are

tested annually as required under O. Reg. 170/03. In the event any of the parameters listed in Schedule 23 or 24 of O. Reg. 170/03 exceed half of the maximum allowable concentration the parameter is required to be samples quarterly. Based on the latest test results no additional testing is required.

Table 6. Inorganic Parameters Test Results

	Sample Date (yyyy/mm/dd)	Sample Result	Unit of Measure	MAC	Exceedance
Treated Water					
Antimony	2024 01 08	<MDL 0.6	µg/L	6.0	No
Arsenic	2024 01 08	<MDL 0.2	µg/L	10.0	No
Barium	2024 01 08	42.6	µg/L	1000.0	No
Boron	2024 01 08	11.0	µg/L	5000.0	No
Cadmium	2024 01 08	0.006	µg/L	5.0	No
Chromium	2024 01 08	0.19	µg/L	50.0	No
Mercury	2024 01 08	<MDL 0.01	µg/L	1.0	No
Selenium	2024 01 08	0.21	µg/L	50.0	No
Uranium	2024 01 08	0.663	µg/L	20.0	No
Additional Organics					
Fluoride	2023 01 04	<MDL 0.06	mg/L	1.5	No
Nitrite	2024 01 02	<MDL 0.003	mg/L	1.0	No
Nitrite	2024 04 02	<MDL 0.003	mg/L	1.0	No
Nitrite	2024 07 02	<MDL 0.003	mg/L	1.0	No
Nitrite	2024 10 07	<MDL 0.003	mg/L	1.0	No
Nitrate	2024 01 02	1.77	mg/L	10.0	No
Nitrate	2024 04 02	1.58	mg/L	10.0	No
Nitrate	2024 07 02	1.44	mg/L	10.0	No
Nitrate	2024 10 07	1.57	mg/L	10.0	No
Sodium	2023 01 04	11.0	mg/L	20*	No

MAC = Maximum Allowable Concentration as per O. Reg. 169/03
MDL = Method Detection Limit

*There is no "MAC" for Sodium. The aesthetic objective for sodium in drinking water is 200 mg/L. Sodium results exceeding 20 mg/L are to be reported to the Medical Officer of Health as per Schedule 16-3 (8) of O. Reg. 170/03.

Schedule 15 Sampling (Lead)

The Schedule 15 sampling is required under O. Reg. 170/03. This system is under reduced sampling. Only distribution samples were collected, and no plumbing samples were collected.

Table 7. Schedule 15 Test Results (Lead)

	Number of Sampling Points	Number of Samples	Range of Results Minimum	Range of Results Maximum	MAC (µg/L)	Number of Exceedances
Alkalinity (mg/L)	4	4	256	287	N/A	N/A
pH	4	4	7.08	7.34	N/A	N/A
Lead (µg/L)	0	0	N/A	N/A	10	

Organic Parameters

These parameters are tested as a requirement under O. Reg. 170/03. In the event any of the parameters listed in Schedule 23 or 24 of O. Reg. 170/03 exceed half of the maximum allowable concentration the parameter is required to be samples quarterly. Based on the latest test results no additional testing is required.

Table 8. Organic Parameters Test Results

	Sample Date (yyyy/mm/dd)	Sample Result	Unit of Measure	MAC	Exceedance
Treated Water					
Alachlor	2024 01 08	<MDL 0.02	µg/L	5.0	No
Atrazine + N-dealkylated metabolites	2024 01 08	<MDL 0.01	µg/L	5.0	No
Azinphos-methyl	2024 01 08	<MDL 0.05	µg/L	20.0	No
Benzene	2024 01 08	<MDL 0.32	µg/L	1.0	No
Benzo(a)pyrene	2024 01 08	<MDL 0.004	µg/L	0.01	No
Bromoxynil	2024 01 08	<MDL 0.33	µg/L	5.0	No
Carbaryl	2024 01 08	<MDL 0.05	µg/L	90.0	No
Carbofuran	2024 01 08	<MDL 0.01	µg/L	90.0	No
Carbon Tetrachloride	2024 01 08	<MDL 0.17	µg/L	2.0	No

	Sample Date (yyyy/mm/dd)	Sample Result	Unit of Measure	MAC	Exceedance
Chlorpyrifos	2024 01 08	<MDL 0.02	µg/L	90.0	No
Diazinon	2024 01 08	<MDL 0.02	µg/L	20.0	No
Dicamba	2024 01 08	<MDL 0.2	µg/L	120.0	No
1,2-Dichlorobenzene	2024 01 08	<MDL 0.41	µg/L	200.0	No
1,4-Dichlorobenzene	2024 01 08	<MDL 0.36	µg/L	5.0	No
1,2-Dichloroethane	2024 01 08	<MDL 0.35	µg/L	5.0	No
1,1-Dichloroethylene	2024 01 08	<MDL 0.33	µg/L	14.0	No
Dichloromethane (Methylene Chloride)	2024 01 08	<MDL 0.35	µg/L	50.0	No
2,4-Dichlorophenol	2024 01 08	<MDL 0.15	µg/L	900.0	No
2,4-Dichlorophenoxy acetic acid (2,4-D)	2024 01 08	<MDL 0.19	µg/L	100.0	No
Diclofop-methyl	2024 01 08	<MDL 0.4	µg/L	9.0	No
Dimethoate	2024 01 08	<MDL 0.06	µg/L	20.0	No
Diquat	2024 01 08	<MDL 1.0	µg/L	70.0	No
Diuron	2024 01 08	<MDL 0.03	µg/L	150.0	No
Glyphosate	2024 01 08	<MDL 1.0	µg/L	280.0	No
Malathion	2024 01 08	<MDL 0.02	µg/L	190.0	No
2-Methyl-4chlorophenoxyacetic Acid (MCPA)	2024 01 08	<MDL 0.12	µg/L	100.0	No
Metolachlor	2024 01 08	<MDL 0.01	µg/L	50.0	No
Metribuzin	2024 01 08	<MDL 0.02	µg/L	80.0	No
Monochlorobenzene (Chlorobenzene)	2024 01 08	<MDL 0.3	µg/L	80.0	No
Paraquat	2024 01 08	<MDL 1.0	µg/L	10.0	No
PCB	2024 01 08	<MDL 0.04	µg/L	3.0	No
Pentachlorophenol	2024 01 08	<MDL 0.15	µg/L	60.0	No
Phorate	2024 01 08	<MDL 0.01	µg/L	2.0	No
Picloram	2024 01 08	<MDL 1.0	µg/L	190.0	No
Prometryne	2024 01 08	<MDL 0.03	µg/L	1.0	No
Simazine	2024 01 08	<MDL 0.01	µg/L	10.0	No
Terbufos	2024 01 08	<MDL 0.01	µg/L	1.0	No
Tetrachloroethylene	2024 01 08	<MDL 0.35	µg/L	10.0	No
2,3,4,6-Tetrachlorophenol	2024 01 08	<MDL 0.2	µg/L	100.0	No
Triallate	2024 01 08	<MDL 0.01	µg/L	230.0	No
Trichloroethylene	2024 01 08	<MDL 0.44	µg/L	5.0	No
2,4,6-Trichlorophenol	2024 01 08	<MDL 0.25	µg/L	5.0	No
Trifluralin	2024 01 08	<MDL 0.02	µg/L	45.0	No
Vinyl Chloride	2024 01 08	<MDL 0.17	µg/L	1.0	No
Distribution Water					

	Sample Date (yyyy/mm/dd)	Sample Result	Unit of Measure	MAC	Exceedance
Trihalomethane Total Annual Average Q1	2024 01 02	23.5	µg/L	100.0	No
Trihalomethane Total Annual Average Q2	2024 04 02	23.75	µg/L	100.0	No
Trihalomethane Total Annual Average Q3	2024 07 02	24	µg/L	100.0	No
Trihalomethane Total Annual Average Q4	2024 10 01	24	µg/L	100.0	No
HAA Total Annual Average Q1	2024 01 02	10.78	µg/L	80.0	No
HAA Total Annual Average Q2	2024 04 02	11.23	µg/L	80.0	No
HAA Total Annual Average Q3	2024 07 02	9.5	µg/L	80.0	No
HAA Total Annual Average Q4	2024 10 01	9.5	µg/L	80.0	No

MAC = Maximum Allowable Concentration as O. Reg. 169/03
MDL = Method Detection Limit

Additional Legislated Samples

Summary of additional testing and sampling carried out in accordance with the requirement of an approval, order or other legal instrument.

Additional samples are required under Permit to Take Water #1207-AHKRZV

Table 9. Additional Permit to Take Water Sampling Test Results

Parameter	Location	No. of Samples Collected	Range of Results Minimum	Range of Results Maximum
Nitrite (mg/L)	Well 1	14	<MDL 0.003	<MDL 0.003
Nitrite (mg/L)	Well 2	14	<MDL 0.003	<MDL 0.003
Nitrate (mg/L)	Well 1	14	1.26	1.84
Nitrate (mg/L)	Well 2	14	1.31	1.78
Nitrites + Nitrates (mg/L)	Well 1	14	1.26	1.84
Nitrites + Nitrates (mg/L)	Well 2	14	1.31	1.78
Calcium (mg/L)	Well 1	2	96.5	102
Calcium (mg/L)	Well 2	2	92.7	103

Parameter	Location	No. of Samples Collected	Range of Results Minimum	Range of Results Maximum
Magnesium (mg/L)	Well 1	2	11.0	11.2
Magnesium (mg/L)	Well 2	2	11.0	11.6
Sodium (mg/L)	Well 1	2	4.78	6.57
Sodium (mg/L)	Well 2	2	6.24	8.27
Potassium (mg/L)	Well 1	2	1.55	1.57
Potassium (mg/L)	Well 2	2	1.72	1.73
Chloride (mg/L)	Well 1	2	7.90	12.0
Chloride (mg/L)	Well 2	2	11.0	56.0
Sulphate (mg/L)	Well 1	2	16	22
Sulphate (mg/L)	Well 2	2	18	24
Alkalinity (mg/L as $CaCO_3$)	Well 1	2	261	288
Alkalinity (mg/L as $CaCO_3$)	Well 2	2	257	287
pH	Well 1	2	7.73	7.75
pH	Well 2	2	7.63	7.75
Ammonia + Ammonium (N) (mg/L)	Well 1	14	<MDL 0.04	0.06
Ammonia + Ammonium (N) (mg/L)	Well 2	14	<MDL 0.04	0.04
Total Kjeldahl Nitrogen (mg/L)	Well 1	14	<MDL 0.05	0.22
Total Kjeldahl Nitrogen (mg/L)	Well 2	14	<MDL 0.05	0.33
Conductivity (uS/cm)	Well 1	2	521	535
Conductivity (uS/cm)	Well 2	2	526	534
Total Dissolved Solids (mg/L)	Well 1	2	346	366
Total Dissolved Solids (mg/L)	Well 2	2	346	349
Hydrogen Sulphide (mg/L)	Well 1	2	<MDL 0.006	<MDL 0.006

Parameter	Location	No. of Samples Collected	Range of Results Minimum	Range of Results Maximum
Hydrogen Sulphide (mg/L)	Well 2	2	<MDL 0.006	<MDL 0.006
Ion Ratio	Well 1	2	1.13	2.25
Ion Ratio	Well 2	2	0.530	1.87

Minor Maintenance

- Private well data logger replacement
- Compliance analyzer feedline repair
- Filter to waste valve replacement
- Well #1 datalogger replacement
- Chlorine discharge lines replacement
- Well #1 conduit repair
- Standpipe cell sump pump replacement
- Filter ¾ turbidity analyzer desiccant replacement
- Greywater tank sump pump replacement
- Well #3 interlock issue repair
- UPS replacement
- Outpost panel battery replacement

Major Maintenance Expense (above $10,000)

Under Section 11 of O. Reg. 170/03, a description of any major expenses incurred during this reporting period to install, repair or replace required equipment must be included in the annual report. The details of the major expenses for this drinking water system are as follows:

- Woodville Standpipe Improvements - $967,833

APPENDIX A

WTR Submission Confirmation