



Annual Summary Report

for the

Aylmer Distribution System

2023

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Aylmer Distribution System – 2023 Summary Report

January 2024

Overview

This Summary Report for the Aylmer Distribution System is generated in accordance with Schedule 22 of Ontario's Drinking Water Systems Regulation for the reporting period of January 1st, 2023 to December 31st, 2023. The Aylmer Distribution System (Waterworks Number 260002136) is categorized as Large Municipal Residential Drinking Water System. It is operated under the Municipal Drinking Water License (MDWL) #044-101 and Drinking Water Works Permit (DWWP) #044-201.

The Town of Aylmer is supplied water by the Aylmer Secondary System which delivers water from the Elgin Middlesex Pumping Station to the town limits by means of a 450mm watermain.

Compliance

The annual audit of the Aylmer Distribution System's Drinking Water Quality Management Standard (DWQMS) was an on-site full scope accreditation audit conducted on August 29, 2023 by NSF auditor Rose Johnson. Four minor nonconformities were identified. The first minor was identified for Document & Records Control – New form that was created to track calibration of new equipment had duplicate name of another form. The second minor was identified for Essential Supplies & Services – Appendix C of the Town's Operating Procedure lists essential supplies and services which was accurate, however, a redacted version was submitted for the audit. The redacted version is posted to the Town's website. The third minor was identified for Management Review – action items and personnel responsible were not fully effective. The fourth minor was identified for Measurement & Recording Equipment, Calibration & Maintenance – SOP #3 needed to be updated to effectively describe new routine calibration practices. The most recent MECP system inspection was conducted on June 6th, 2023. There were no instances of non-compliance, resulting in an inspection rating of 100%.

Requirements

The 2023 Summary Report for the Aylmer Distribution System is submitted to satisfy Schedule 22 of Ontario Regulation 170/03. As described in O. Reg. 170.03, the report must:

- a) List the requirements of the Act, the regulations, the system's approval, drinking water works permit, municipal drinking water license and any orders applicable to the system that were not met at any time during the reporting period, and
- b) For each requirement not met in part a), specify the duration of the failure and the measures that were taken to correct the failures.

The Summary Report must also include the following information to assist the owner in assessing the capability of the system to meet existing and future uses:

- 1) A summary of the quantities and flow rates of the water supplied during this period covered by the report, including monthly average and maximum daily flows.
- 2) A comparison of the summary results to the rated capacity and flow rates approved in the system's approval, drinking water works permit or municipal drinking water license or if the system is receiving all of its water from another system under an agreement, to the flow rates specified in that agreement.

Table 1 lists the requirements that the system failed to meet and the measures taken to correct the failure.

Table 1

Drinking Water Legislation	List of requirements the system failed to meet	Duration of the failure	Measures that were taken to correct problem	Status: (complete or incomplete)
Safe Drinking Water Act	None	N/A	N/A	N/A
Ontario Regulations	None	N/A	N/A	N/A
DWL #044-101. DWWP #044-201 Issue #2 (as of June 7/16)	None	N/A	N/A	N/A
Provincial Officer's Order No.	None	N/A	N/A	N/A
Works permit/ License	None	N/A	N/A	N/A

Water Quantity Summary

Table 2 provides an overview of the quantity of water entering the Aylmer Distribution System at Chamber 16 as recorded by the SCADA system.

Table 2

	Total Flow (m3)	Average Daily Flow (m3/day)	Max Daily Flow (m3/day)	Min Daily Flow (m3/day)	Total Reverse Flow (m3)
January	139502.9	4500.1	4840.4	4062.0	2308.7
February	122151.6	4362.6	4995.8	3311.3	2975.2
March	140523.9	4533.0	7175.0	3828.8	3461.4
April	124718.4	4157.3	4982.9	2355.1	2514.6
May	156541.7	5049.7	6235.1	4174.2	3580.8
June	165051.8	5501.7	6457.5	4629.5	3111.3
July	157148.8	5069.3	5651.8	4266.5	3310.5
August	157364.7	5076.3	5652.5	4552.8	3354.1
September	138513.8	4617.1	6031.9	2159.7	3732.7
October	149496.0	4821.9	5481.3	4194.0	4034.9
November	140605.8	4686.9	5182.2	3672.9	4446.9
December	143886.7	4641.5	5064.5	4283.4	5070.7
Total	1735506.0				41901.8

Flow data for the period January 1, 2023 to December 31, 2023

The maximum daily flow to the system occurred on March 21, 2023 with a daily total of 7175.0 m3. The total flow from the EMPS to Aylmer averaged 4751.5 m3/day. Total flow for the year 2023 was 1735506.0 m3. The numbers change when one considers the reverse flow through the meter at Chamber 16. When the reverse flow is subtracted from the total flow, the annual flow drops to 1693604.2 m3 for the year 2023. This also changes the average daily flow from 4751.5 m3/day to 4640.0 m3/day for 2023. Using the figure 130 l/sec as the EMPS pump capacity, the total daily flow capacity for the Aylmer Secondary line is 11232 m3/day. The current average daily flow (4640.0 m3/day) uses 41.3% of the system's capacity. This number has gone down from the previous year's total of 42% capacity. As expected, water usage was higher during the warmer months.

Table 3 compares the flows from 2022 to those of 2023. There were considerable variations in water usage on a month to month basis. High water consumption in the months of May to September are a common trend as people complete more outdoor tasks that require water usage. Irrigation and exterior cleaning of property always increase the total volume of water used. Colder months saw less water consumption.

Table 3

Month	Total Flow 2022 (m3)	Total Flow 2023 (m3)	Average Daily Flow 2022 (m3/day)	Average Daily Flow 2023 (m3/day)	Difference between 2022 and 2023 (%)
January	127250.6	139502.9	4104.9	4500.1	+8.8
February	117065.6	122151.6	4180.9	4362.6	+4.2
March	136473.3	140523.9	4402.4	4533.0	+2.9
April	118275.3	124718.4	3942.5	4157.3	+5.2
May	152772.1	156541.7	4928.1	5049.7	+2.4
June	162735.4	165051.8	5424.5	5501.7	+1.4
July	172279.6	157148.8	5557.4	5069.3	-8.8
August	161221.8	157364.7	5200.7	5076.3	-2.4
September	137176.6	138513.8	4572.6	4617.1	+1.0
October	151447.2	149496.0	4885.4	4821.9	-1.3
November	141633.9	140605.8	4721.1	4686.9	-0.7
December	136721.2	143886.7	4410.4	4641.5	+5.0
total flow (m3)	1715052.6	1735506.0			+1.2
Average (m3/day)			4694.2	4751.5	+1.2

Table 4 shows the various flow parameters for 2023 and compares the daily average flow rates for 2023 to those of 2022.

Table 4: Flow Rates

Month	2023 Daily Average Flow Rate (L/s)	Max Flow Rate/Day (L/s)	Min. Flow Rate/Day (L/s)	Highest Hourly Average (L/s)	2022 Daily Average Flow Rate (L/s)
January	52.1	128.0	0	56.0	47.5
February	50.6	128.4	0	56.7	48.4
March	52.5	162.5	0	83.1	51.2
April	48.1	128.5	0	57.7	45.3
May	58.4	151.2	0	72.2	57.1
June	63.4	129.5	0	74.7	63.4
July	58.7	129.8	0	65.4	64.3
August	58.8	129.6	0	65.5	60.2
September	54.0	130.0	0	69.8	52.9
October	55.8	129.3	0	63.4	56.5
November	54.2	128.2	0	60.0	55.1
December	53.7	127.4	0	58.6	51.1

This information is collected in order to assist the owner in assessing the present capacity of the water system. A copy of this report shall be submitted to Council no later than March 31, 2023.