

Staff Report

Community Services Department



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REPORT TO: Community and Infrastructure Services Committee

DATE OF MEETING: March 25, 2024

SUBMITTED BY: Greg St. Louis, Director, Gas & Water Utilities, 519-741-2600 ext. 4538

PREPARED BY: Angela Mick, Manager, Quality Management and Water Programs, 519-741-2600 ext. 4408

WARD(S) INVOLVED: Ward(s)

DATE OF REPORT: January 16, 2024

REPORT NO.: INS-2024-051

SUBJECT: Summary Water Report - 2023

RECOMMENDATION:

That the 2023 City of Kitchener Summary Drinking Water Report be received for information as required by O.Reg. 170/03 Schedule 22 of the Safe Drinking water Act; and,

further that the City of Kitchener provide a copy of the Summary Drinking Water Report to the Township of Woolwich and the City of Waterloo as required by Schedule 22 of O.Reg. 170/03.

REPORT HIGHLIGHTS:

- The key finding of this report is that the City of Kitchener is in compliance with regulatory water sampling requirements of the reporting period of January 1 to December 31, 2023.
- There are no financial implications of this report.
- The report supports the delivery of core services.

BACKGROUND:

As outlined in Schedule 22 of the Drinking Water Systems Regulation (O.Reg.170/03) of the Safe Drinking Water Act, 2002, a Summary Report is to be prepared and given to the members of the municipal council. The following information is required to be included in this report:

(a) list the requirements of the Act, the regulations, the system's approval and any order that the system failed to meet at any time during the period covered by the report and specify the duration of the failures; and

(b) for each failure referred to in (a), describe the measures that were taken to correct the failure.

The report must also include a summary of the quantities and flow rates of the water supplied during the period covered by the report.

REPORT:

The following matters are reported to Council in accordance with the requirements of the Safe Drinking Water Act, for the period from January 1 to December 31, 2023:

- The Kitchener Distribution System is part of an Integrated Urban System, meaning the Regional Municipality of Waterloo is responsible for water treatment and the development and operation of a trunk water network to distribute treated water to Kitchener, Cambridge, Waterloo, Woolwich, and Wilmot. The Region provides annual summaries for each supply and the information is available on their [website](#) with a link from the Kitchener Utilities (KU) website. Reports from the connected systems have been or will be received.
- A portion of Kitchener (River Ridge area) is supplied by the City of Waterloo. Kitchener supplies water to a small section of Waterloo (Ira Needles area) and water travels through the Kitchener distribution system to Breslau. The City of Waterloo's water quality report is available on their [website](#).
- The Ministry of Environment, Conservation and Parks (MECP) completed an annual inspection from June 8-June 20, 2023, which covered June 24, 2022 to June 28, 2023. There were no non-compliances found.
- There were 3,980 chlorine residual samples taken and 2,151 bacteriological samples taken within the distribution system. Of these, there were 20 Adverse Water Quality Incidents (AWQI's) reported in this time period (see **Table 1**) and all resamples were clear.
- The Lead Sampling program was restricted to hydrants only in the spring; however the fall program resumed to pre-pandemic levels. There were three (3) samples from one location with a lead exceedance in the plumbing system and one hydrant within the distribution system. The hydrant resample was below the limit for lead. Homeowners were provided with test results and information about lead from the Health Unit. The customer with the lead exceedance was aware that they had lead piping on their side, but the City side was not lead. They replaced their side of the service. The City is not obligated to complete any additional corrective actions other than reporting, unless directed by the Medical Officer of Health for the residential plumbing exceedances.

Summary of AWQIs

An AWQI does not necessarily mean that the water is a risk to the customer. It means that a potential problem has been identified and corrective actions must be taken to resolve the problem. City staff work with ministry staff and the local public health unit to resolve the issue, which generally includes resampling.

Low Chlorine Residual AWQIs

- Low chlorine AWQIs can occur in areas of new subdivisions with no houses yet built. Along with dead end watermains, KU proactively flushes areas with new watermains until there are homes built and water is being used.

- Dead end watermain and new development flushing is a proactive approach to increase the levels of chlorine in the distribution system. The water is initially disinfected (primary disinfection) at the treatment plant and sufficient chlorine is added to protect the water from microbiological contamination as it travels through the pipes in the distribution system (secondary disinfection). Low chlorine does not pose a threat to human health; to have an impact to human health, there must be microbiological contamination and no, or extremely low, chlorine.

Bacteriological AWQIs

- The presence of total coliform on a test does not necessarily mean the water is unsafe to drink. Coliform bacteria can be found in many different environments. There are several different strains of coliform bacteria. Most are harmless and do not cause illness. Coliform bacteria are used as an “indicator organism” to assess the possibility of other disease-causing organisms, and their detection would prompt further investigation and/or corrective action. It is different than E.coli, which is a bacteria only associated with human or animal faecal matter.
- When total coliform is found, a resample is done using a different technique, which provides a number of total coliforms to analyze in consultation with Public Health and the MECP. Based on a risk assessment of a number of factors including the coliform count, chlorine residuals, and upstream/downstream coliform counts, the requirement for a boil water advisory is determined.
- Twelve (12) total coliform AWQIs were at temporary sampling locations within reconstruction projects. Reconstruction streets have multiple sample ports and sometimes more than one AWQI would occur on the same day. Temporary watermains are particularly sensitive as they are above ground systems influenced by the water heating up in warmer temperatures. This may increase the potential for bacteriological growth. Warmer weather seems to increase the incidences of Total Coliform. The additional challenge with temporary watermains is the sample port is located outside and subject to unsanitary conditions. Many contractors remove the sampling ports when not in use because they are subject to vandalism/theft. These ports need to be maintained in a sanitary condition between uses. The general nature of reconstruction projects often leads to “false positives”, where the results received are more reflective of what is on the sampling tap, rather than what is in the water. Every positive result is reportable, and resampling must occur in accordance with regulations. When the resamples are clear, it is an indication that the issue was with the sampling port, not in the water.
- There were two Self Imposed Boil Water Advisories. The first affected approximately 150 units, on River Road E, was as a result of a watermain break and potential contamination from the sanitary sewer. The second affected a single address, on Belleview Ave, was a private side water service repair with potential sanitary service contamination. Sampling for both were free from contamination.

**Table 1 – Adverse Water Quality Incident Summary –
January 1 to December 31, 2023**

#	Adverse Type	AWQI Date (verbal)	AWQI #	Site Name	Site Location	Results/Notes
1	Lead	March 27	161585	Hydrant 1230	205 Brandon Ave	10.6ug/L
2	Total Coliform	May 10	161921	Patricia St Temp main	Sp4	TC=present
3	Self Imposed Boil Water Advisory	May 17-20	161969	River Rd E between Victoria St N and Frederick St (139 residential units plus 11 commercial units)	86 River Rd E	Precautionary, sample results were free from contamination.
4	Low Chlorine	June 7	162126	Hydrant 12765	75 Otterbein Rd	F=0.01mg/L T=0.08mg/L C=0.07mg/L
5	Total Coliform	June 29	162357	Westwood Cres Stage 2 Temp main	S2-Lot 87	TC=present
6	Total Coliform	June 30	162373	Westwood Cres Stage 2 Temp main	S2-Lot 87	TC=1
7	Total Coliform	July 6	162432	Rossford Cres Stage 2 Temp main	S5-Lot 107	TC=present
8	Total Coliform	July 6	162452	Sherwood Ave Stage 2 Temp main	T2-4-Lot 558	TC=present
9	Total Coliform	July 12	162532	Bruce St Temp main	SP4 - 70 Heather Ave	TC=present
10	Total Coliform	July 12	162537	Bruce St Temp main	SP2 – 169 Bruce	TC=present
11	Total Coliform	July 18	162625	Westwood Cres Stage 2 Temp main	S2-Lot 87	TC=present
12	Total Coliform	July 18	162627	Westwood Cres Stage 2 Temp main	S4-Lot 86	TC=present
13	Total Coliform	July 28	162812	KID 15	600 Heritage Dr	TC=present
14	Total Coliform	August 17	163055	Sherwood Ave Stage 2 Temp main	T2-4-Lot 558	TC=present
15	Total Coliform	August 31	163260	McKenzie Ave Temp Main	T1-3 97 McKenzie	TC=present
16	Total Coliform	August 31	163265	McKenzie Ave Temp Main	T1-5 113 McKenzie	TC=present
17	Total Coliform	Oct. 13	163788	34 Lancaster St W (new service)	34 Lancaster St W	TC=present
18	Low Chlorine	Oct. 23	163858	KID 140	80 Tartan Ave	F=0.04mg/L T=0.22mg/L C=0.18mg/L
19	Low Chlorine	Nov 9	164008	Hydrant 1848	89 Maple Hill Dr	F=0.03mg/L T=0.17m/L C=0.14mg/L
20	Self-Imposed Boil Water	Nov 13-17	164020	273 Belleview Ave	273 Belleview Ave	Potential contamination – 2 sample rounds were

Advisory Nov 14-17					free from contamination
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A summary of the quantities of the water supplied by the Regional Municipality of Waterloo during the period covered by the report is noted in **Table 2**. Overall, the water 2023 water volumes were slightly higher than 2022; however there are variations on a monthly basis, largely due to weather.

Table 2 - Kitchener Distribution System				
Volume of Water Conveyed from the Region of Waterloo Supply System				
	2023 Monthly Total (m³)	Average Day (m³)	2022 Monthly Total (m³)	Variance from Previous Year
January	1,863,148	60,102	1,828,218	2%
February	1,694,195	60,507	1,682,407	1%
March	1,897,631	61,214	1,843,857	3%
April	1,862,674	62,089	1,790,389	4%
May	2,109,735	68,056	2,005,562	5%
June	2,176,111	72,537	2,116,758	3%
July	2,096,766	67,638	2,202,117	-5%
August	2,003,517	64,630	2,068,490	-3%
September	2,009,712	66,990	1,936,868	4%
October	1,965,537	63,404	1,920,074	2%
November	1,850,343	61,678	1,790,295	3%
December	1,941,850	62,640	1,847,662	5%
Purchases from Waterloo	156,103		160,633	-3%
Total	23,627,322		23,193,330	2%

STRATEGIC PLAN ALIGNMENT:

This report supports the delivery of core services.

FINANCIAL IMPLICATIONS:

Capital Budget – The recommendation has no impact on the Capital Budget.

Operating Budget – The recommendation has no impact on the Operating Budget.

COMMUNITY ENGAGEMENT:

INFORM – This report has been posted to the City’s website with the agenda in advance of the council / committee meeting. Water Quality Information is posted on the Kitchener Utilities website.

PREVIOUS REPORTS/AUTHORITIES:

There are no previous reports/authorities related to this matter, however the summary reports are provided on an annual basis with the last report being INS-2023-010.

APPROVED BY: Denise McGoldrick, General Manager, Infrastructure Services