

REPORT TO: Community and Infrastructure Services Committee

DATE OF MEETING: February 24, 2025

SUBMITTED BY: Greg St. Louis, Director, Gas & Water Utilities 519-783-8792,

PREPARED BY: Angela Mick, Manager, Quality Management and Water Programs, 519-783-8778

WARD(S) INVOLVED: All Wards

DATE OF REPORT: January 15, 2025

REPORT NO.: INS-2025-009

SUBJECT: Summary Water Report - 2024

RECOMMENDATION:

That the 2024 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, 2024.
- 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, 2024:

- 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 11 to June 17, 2024, which covered June 9, 2023 to June 13, 2024. There were no non-compliances found.
- There were 4,232 chlorine residual samples taken and 2,191 bacteriological samples taken within the distribution system. Of these, there were 18 Adverse Water Quality Incidents (AWQI's) reported in this time period (see **Table 1**) and all resamples were clear.
- There were three (3) samples with lead exceedances in the plumbing system and one hydrant within the distribution system. Plumbing lead exceedances are not reported as AWQIs. Two of the three lead exceedances were at the Rockway Community Centre. Previous tests (2019) were below the limits. Additional sampling was undertaken throughout the facility and the high lead was limited to a single faucet. The faucet and tap supply line was replaced and resamples showed that the lead levels were below the limits. Homeowners were provided with test results and information about lead from the Health Unit. 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.
- There were four (4) low chlorine adverses associated with the same location – a school at 225 Thomas Slee Drive. Lower chlorine levels can sometimes be experienced in schools or facilities when the facility usage and water usage is lower than normal like in the summer. When the chlorine levels didn't increase after

classes started, the school was contacted and an internal flushing program was commenced. There haven't been low chlorines adverses since implementing the flushing program.

- 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.
- Eight (8) total coliform AWQIs were at temporary sampling locations (Temp) 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.

**Table 1 – Adverse Water Quality Incident Summary –
January 1 to December 31, 2024**

#	Adverse Type	AWQI Date (verbal)	AWQI #	Site Name	Site Location	Results/Notes
1	Low Chlorine	May 13	164944	Hydrant 14054	215 Histan Trail	Free=0.04mg/L
2	Total Coliform	June 13	165196	East Ave Temp Main	139 East Ave	TC Present, resample clear
3	Total Coliform	July 19	165665	KID 906	38 Parkview Cres	TC Present, resample clear
4	Total Coliform	Aug. 8	165924	Islington Ave Temp Main	85 Islington Ave	TC Present, resample clear
5	Total Coliform	Aug 13	165995	Wilson Ave Temp Main	221 Wilson Ave	TC Present, resample clear
6	Low Chlorine	Aug 19	166072	KID 124	225 Thomas Slee Dr	Free=0.04mg/L Combined=0.21mg/L
7	Low Chlorine	Aug 23	166077	KID 124	225 Thomas Slee Dr	Free=0.03mg/L Combined=0.20mg/L
8	Low Chlorine	Sept 3	166176	KID 124	225 Thomas Slee Dr	Free=0.04 mg/L Combined=0.08mg/L
9	Low Chlorine	Sept 5	166206	42 Admiral Rd (Reconstruction)	42 Admiral Rd	Free=0.0mg/L Combined=0.0mg/L
10	Low Chlorine	Sept 16	166319	KID 124	225 Thomas Slee Dr	Free=0.02 mg/L Combined=0.25mg/L
11	Total Coliform	Sept 17	166340	Roxborough Temp Main (Stage 2)	15 Admiral Rd	TC Present, resample clear
12	Low Chlorine	Sept 30	166489	KID 141	300 Chicopee Hills Dr	Free = 0.03mg/L, Combined=0.14mg/L
13	Total Coliform	Oct 2	166521	East Ave Temp Main	350 East Ave	TC present, resample clear
14	Total Coliform	Oct 3	166552	Roxborough Temp Main (Stage 2)	15 Admiral Rd	TC present
15	Total Coliform	Oct 4	166566	Roxborough Temp Main (Stage 2)	15 Admiral Rd	TC=1
16	Total Coliform	Oct 5	166578	Roxborough Temp Main (Stage 2)	15 Admiral Rd	TC=1, resamples clear
17	Low Chlorine	Oct 22	166716	Hydrant 2144	40 Dumart Pl	Free=0.03mg/L Combined=0.15mg/L
18	Low Chlorine	Dec 30	167135	KID 140	80 Tartan Ave	Free=0.03mg/L Combined=0.10mg/L

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 2024 water volumes were slightly lower than 2023; 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

	2024 Monthly Total (m³)	Average Day (m³)	2023 Monthly Total (m³)	Variance from Previous Year
January	1,953,983	63,032	1,863,148	5%
February	1,794,185	64,078	1,694,195	6%
March	1,846,881	59,577	1,897,631	-3%
April	1,809,609	60,320	1,862,674	-3%
May	1,982,997	63,968	2,109,735	-6%
June	1,965,512	65,517	2,176,111	-10%
July	2,052,059	66,195	2,096,766	-2%
August	2,072,225	66,846	2,003,517	3%
September	2,063,503	68,783	2,009,712	3%
October	1,907,037	61,517	1,965,537	-3%
November	1,812,135	60,405	1,850,343	-2%
December	1,871,431	60,369	1,941,850	-4%
Purchases from Waterloo	159,195		156,103	2%
Total	23,290,753		23,627,322	-1%

STRATEGIC PLAN ALIGNMENT:

This report supports the delivery of core services.

FINANCIAL IMPLICATIONS:

Capital Budget – The recommendation has no impact on the Capital or Operating Budgets.

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-2024-051

APPROVED BY: Denise McGoldrick, General Manager, Infrastructure Services