

TO:	CHAIR AND MEMBERS CIVIC WORKS COMMITTEE MEETING ON FEBRUARY 6, 2018
FROM:	KELLY SCHERR, P.ENG., MBA, FEC MANAGING DIRECTOR, ENVIRONMENTAL & ENGINEERING SERVICES AND CITY ENGINEER
SUBJECT:	2017 MINISTRY OF THE ENVIRONMENT AND CLIMATE CHANGE INSPECTION REPORT FOR THE CITY OF LONDON WATER DISTRIBUTION SYSTEM

RECOMMENDATION

That on the recommendation of the Managing Director – Environmental & Engineering Services and City Engineer, this report regarding the findings of the 2017 Ministry of the Environment and Climate Change Inspection of the City of London Water Distribution System **BE RECEIVED** for information.

PREVIOUS REPORTS PERTINENT TO THIS MATTER

“2015 Ministry of the Environment and Climate Change Inspection Report for the City of London Water Distribution System”, Civic Works Committee, February 2, 2016, Agenda item #7.

“2016 Ministry of the Environment and Climate Change Inspection Report for the City of London Water Distribution System”, Civic Works Committee, February 7, 2017, Agenda item #8.

2015-2019 STRATEGIC PLAN

This report supports the Strategic Plan in the following areas:

- Building a Sustainable City: robust infrastructure; strong and healthy environment; responsible growth.
- Strengthening our community: healthy, safe, and accessible City.

BACKGROUND

Purpose

The purpose of this report is to outline the results of the 2017 MOECC City of London Water Distribution System inspection, which was conducted in November, 2017.

Context

Municipal drinking water systems in Ontario are held to very high standards. The Ontario Ministry of the Environment and Climate Change (MOECC) ensures that these standards are being met through two separate mechanisms.

For water system management, the MOECC developed a Drinking Water Quality Management Standard (DWQMS) which combined elements of existing ISO 9001 and

HACCP standards. The 2017 QMS audit results were reported to the Civic Works Committee on December 4, 2017. In addition, the MOECC performs annual inspections to ensure that municipalities are operating water systems in compliance with all applicable legal requirements. Water system operations are governed by provincial regulations, and by the conditions prescribed in MOECC-issued Drinking Water Works Permits and Municipal Drinking Water Licences.

DISCUSSION

MOECC inspections can be in the form of rigorous “detailed” inspections, or less stringent “focused” inspections. For London’s 2017 inspection, the MOECC conducted a focused inspection, and explained the decision as follows:

“This system was chosen for a focused inspection because the system’s performance met the ministry’s criteria, most importantly that there were no deficiencies as identified in O. Reg. 172/03 over the past 3 years.”

O. Reg. 172/03 defines a deficiency as a violation that poses a drinking water health hazard. MOECC inspections include staff interviews and facility inspections, as well as a review of operating procedures, water analysis reports, operational records, and staff certification and training records. Where an Inspector finds that the water system operators did not properly comply with the applicable requirements, these are recorded as non-compliance incidents.

The results of the annual MOECC Inspections are used to generate Ministry of the Environment Drinking Water System Inspection Rating Records. Each incident of non-compliance results in a subtraction from a possible score of 100%. Each year, these rating records (or “report cards”) for Ontario drinking water systems are compiled and made available to the public.

On December 22, 2017, the MOECC issued the *City of London Distribution System Inspection Report* for the 2017 inspection. Four incidents of non-compliance were identified as follows:

1. *“According to the documentation provided for review, there were occasions when the free chlorine residual was measured during new watermain installations, but the time over which the chlorination occurred was not recorded on the logsheets.”*

When new watermains are installed, stringent disinfection procedures must be followed before the new main can be used to supply water to consumers. These procedures are prescribed by Ontario’s “*Watermain Disinfection Procedure*”, and includes a 24-hour disinfection period using a strong chlorine solution. Bacteriological sampling is subsequently performed to verify the effectiveness of the disinfection process. City of London Waterworks Inspectors oversee the disinfection processes that are performed by the contractors that install the watermains. London’s Inspectors ensure that Ontario’s Watermain Disinfection Procedure is followed, and the Inspectors also perform the follow-up bacteriological sampling.

When the MOECC Inspector reviewed the field records of London’s Waterworks Inspectors, it was noted that London’s Inspectors recorded the dates that the chlorination processes began and the initial chlorine concentrations, as well as the dates that the chlorination processes were completed, along with the final chlorine concentrations. However, London’s Inspectors did not always record the exact time that the chlorination began and the time that the chlorination ended. Although London’s Inspectors satisfied themselves that the contractors followed Ontario’s Watermain

Disinfection Procedure (for a full 24-hour period), their records did not demonstrate to the MOECC Inspector that the chlorine solution remained in the new watermains for a full 24 hours. It should be noted that for all watermain installations, the final bacteriological testing confirmed that the disinfection procedures were effective. For 2018 and beyond, the start and stop times will be recorded for all watermain disinfection processes.

This incident resulted in a 6.56% deduction on London's Inspection Rating.

2. *"The operations and maintenance manuals did not meet the requirements of the Drinking Water Works Permit and Municipal Drinking Water Licence."*

The MOECC requires that municipalities maintain accurate, up-to-date operations and maintenance manuals for their water systems. London's water system underwent significant changes in the fall of 2017, just prior to the 2017 inspection. The new Southeast Reservoir and Pumping Station (SERPS) became operational on September 11, 2017, and the process to fully commission this new station is ongoing. With the addition of the new Southeast Reservoir, London's last remaining emergency well fields were disconnected from London's distribution system in October, 2017. At the time of the MOECC inspection in November, 2017, London's Operations and Maintenance Manual had not been updated to reflect these changes. The MOECC Inspector has required that an up-to-date Operations and Maintenance Manual be submitted to the MOECC before March 31, 2018, and staff are currently reviewing and updating the manual.

This incident resulted in a 4.38% deduction on London's Inspection Rating.

3. *"All water quality monitoring requirements imposed by the Municipal Drinking Water Licence and/or Drinking Water Works Permit were not being met."*

The City of London collects thousands of water samples each year for various analyses. One of the mandated requirements was that 10 water samples be collected from representative points throughout the distribution system between December 15, 2016 and April 15, 2017, and tested for pH, alkalinity, and lead. These samples are collected from fire hydrants, as they present direct connections to the distribution system. When fire hydrants are operated in winter months, the discharged water can pool, freeze, and create slip hazards, so the sampling was planned for the second week of April, 2017. However, due to a staff oversight, the planned sampling was not performed. The samples were collected on April 19, 2017, but this was four days later than required.

This incident resulted in a 3.75% deduction on London's Inspection Rating.

4. *"All changes to the system registration information were not provided within ten (10) days of the change."*

The MOECC maintains a contact database for all municipal water systems in Ontario. When municipal contact information changes, municipalities are responsible for notifying the MOECC within 10 days of the change. In 2017 there were two changes to London's contact information that were not reported to the MOECC within 10 days. The first was the City of London's phone number changing from 661-2500 to 661-2489. The second was the retirement of John Lucas, Director – Water and Wastewater on August 31, 2017.

This incident resulted in a 1.25% deduction on London's Inspection Rating.

Due to the four incidents of non-compliance reported above, the City of London received a Final Inspection Rating of 84.06% for 2017. Corrective actions have been

developed to eliminate the causes of these non-conformances. It should be noted that all of the incidents were administrative in nature and did not pose a drinking water health hazard.

The following summarizes London’s Final Inspection Ratings for the last 5 years:

- 2013 – 100.00%
- 2014 – 98.98%
- 2015 – 100.00%
- 2016 – 96.05%
- 2017– 84.06%

The complete 2017 *City of London Distribution System Inspection Report* has been included as Appendix ‘A’: Inspection Report, and is also available at:

www.london.ca/residents/Water/Water-System/Pages/Summary-and-Annual-Reports.aspx

CONCLUSIONS

The Ontario Ministry of the Environment and Climate Change (MOECC) performs rigorous annual inspections to ensure that municipalities are operating water systems in compliance with all applicable legal requirements. The MOECC recently completed the 2017 inspection of London’s drinking water system, and outlined the findings in the *City of London Distribution System Inspection Report*.

London received a Final Inspection Rating of 84.06% for the 2017 MOECC inspection.

Acknowledgements

This report has been prepared with input from Dan Huggins, Water Quality Manager and QMS Representative.

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Attach: Appendix ‘A’: Inspection Report
 CC: Martin Hayward – City Manager
 Aaron Rozentals – Division Manager, Water Engineering
 Dan Huggins - Water Quality Manager