



Report to: General Committee

Date Report Authored: July 30, 2013

SUBJECT: The Ontario Ministry of Environment – Markham
Distribution System – Drinking Water System Inspection
Report, May 2013

PREPARED BY: Stefan Ulman, Ext. 2449
Waterworks, Water Quality Coordinator
Gord Miokovic, Ext 2519
Waterworks, Manager, System Engineering

RECOMMENDATION:

- 1) That the report entitled “The Ontario Ministry of Environment – Markham Distribution System – Drinking Water System Inspection Report, May 2013” be received;
- 2) And that Staff be authorized and directed to do all things necessary to give effect to this resolution.

EXECUTIVE SUMMARY:

Not Applicable.

PURPOSE:

The purpose of this report is to provide Council with an update on the findings of the Ministry of the Environment (MOE)’s inspection of Markham’s Water Distribution System for the period from April 11, 2012 to May 10, 2013.

BACKGROUND:

The Safe Drinking Water Act, 2002 (SDWA) states that a provincial officer may at any reasonable time conduct an inspection for the purpose of determining compliance with regulatory requirements contained within the Act, or any of the associated regulations. Traditionally, the MOE has conducted an annual inspection of Markham’s Water Distribution System.

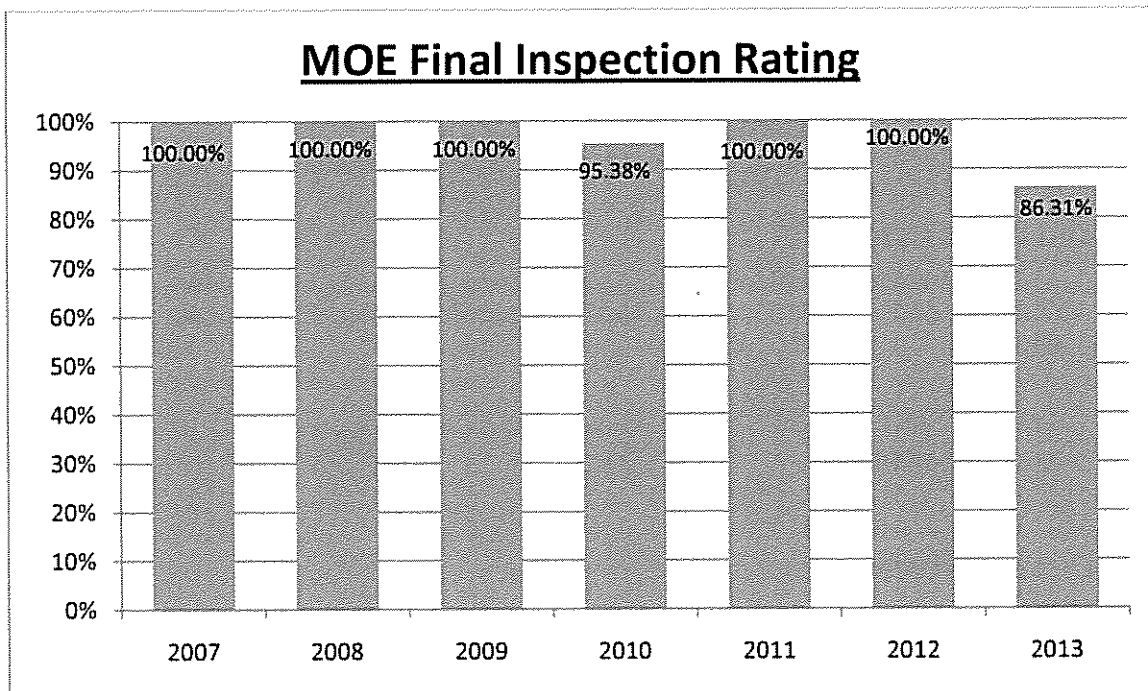
On May 10, 2013, the MOE conducted an announced on-site inspection of Markham’s Water Distribution System. The MOE Inspector reviewed Waterworks procedures, policies and records since the last inspection, held on April 11, 2012.

The MOE inspection report was received on June 26, 2013, see attachment “A”.

OPTIONS/ DISCUSSION:

The City of Markham was given a Final Inspection Rating of 86.31% for compliance with the MOE’s Drinking Water Systems Regulation 170/03 during this year’s inspection. This Inspection Rating is used to measure Municipal Residential Drinking Water System Inspection Results. The objective of the MOE Inspection is to provide a rigorous and comprehensive inspection program for municipal residential drinking water systems (MRDWS), to determine compliance under the Safe Drinking Water Act and associated regulations.

Below is a summary of Markham’s Final Inspection Ratings since the rating system was introduced in 2007:



Two Non-Compliances Identified for the April 11, 2012 to May 10, 2013 Period

- 1. Adverse Water Quality Incident (AWQI) Reporting – failed to immediately report an adverse result to MOE**
 1. AWQI # 106702, June 26th, 2012 (reported 18 hours after lab notification)

A) Background to Adverse Reporting Non-Compliance

On June 26th, 2012, York Durham Region Environmental Laboratory notified the Water Quality Coordinator, by telephone, of four adverse water quality incidents in the distribution system. As is standard protocol, the lab also notified the Ministry of Environment Spills Action Center and York Region Medical Officer of Health of the incident at the same time. Adverse water quality incidents may occur from time to time and are usually attributed to a false positive reading.

Below is the chronological order of events for AWQI #106702:

June 26, 2012

1. Lab notifies Water Quality Coordinator (WQC) of 3 of the 4 adverse locations (2:40pm)
2. WQC notifies Water Quality Supervisor (WQS) of the incident (2:45pm)
3. Lab verbally notifies York Region Medical Officer of Health (MOH) (2:46pm)

4. WQC creates work orders to flush & resample at the 3 failed locations as well as their upstream & downstream constituents (9 sample locations in total) (2:50pm)
5. Lab verbally notifies Ministry of Environment (MOE) Spills Action Centre (SAC) by speaking to a Provincial Officer (2:55pm)
6. Lab verbally notifies WQC of the 4th adverse (3:30pm)
7. WQC notifies WQS of the 4th adverse (3:35pm)
8. Lab verbally notifies York Region MOH of the 4th adverse (3:38pm)
9. Lab verbally notifies MOE SAC of the 4th adverse (3:42pm)
10. WQC issues final work orders the last failed location (3 more sample locations) (4:30pm)
11. Written lab Notification received by fax (4:45pm) – after WQC goes home for the day
12. Waterworks Operators take 24hr resamples and submit to lab (7:30pm)

June 27, 2012

13. WQC gives verbal notification to York Region MOH of incident & location(9:53am)
14. MOE SAC calls WQC to ask why verbal notice has not been given (9:55am)
15. WQC completes Written Notification & sends to MOE SAC & MOH (10:10am)
16. Waterworks Operators take 48hr resamples and submit to lab (2:15pm)

June 28, 2012

17. 24hr **and** 48hr resamples test results received from lab – Both Passed (2:40pm)

June 29, 2012

18. AWQI # 106702 declared resolved – Notice of Resolution faxed to MOE SAC & MOH (2:05pm)

We would like to emphasize that the lab had already notified the York Region Medical Officer of Health and the MOE SAC of the adverse, at the same time as we were notified.

B) Corrective Actions for Adverse Reporting Non-Compliance

As per Section 18(1) of the Safe Drinking Water Act and Section 16-6 of Ontario Regulation 170/03, the City of Markham must immediately report an adverse test result to:

- a) the York Region Medical Officer of Health, by speaking with a person at the office, or if the office is closed, by speaking with a person at the on-call system of the health unit;
- b) to the Ministry of Environment (MOE), by speaking with a person at the Spills Action Centre and;
- c) to undertake the necessary corrective actions to rectify the situation.

Under the Drinking Water Quality Management System (DWQMS), we have a continuous improvement methodology. We have recognized the oversight in our process

as the MOE SAC was not immediately notified, and have implemented corrective actions to address it.

The most immediate corrective actions included modifying "*SOP 16b – Response to Adverse Water Quality Test Result*" to incorporate a double check process in the 'Notification Section' at key stages of adverse reporting. This double check is done by the System Engineering (SE) and the Operations & Maintenance (O&M) Managers.

An "*Adverse Notification - Quick Reference Checklist*" form has been created to aid respondents in reporting an adverse incident or test result. This form should help ensure that all necessary steps and reporting protocol are followed. The form is used as a cover page for all adverse incident report packages and signed off by the SE and O&M Managers before being filed. It is a control document and has been used successfully on five adverse water quality incidents since its implementation on June 11, 2013.

In addition to the SOP modification and the adverse notification form, SE has worked with Business Compliance and Training to set up additional annual training sessions for all Waterworks Operators. The goal of this training is to refresh staff on procedures specific to reporting indicators of adverse water quality as directed by the Ontario Drinking Water System Regulation (O. Reg 170/03). This training was conducted on July 31st and August 13th, 2013. Training completion records have been documented and provided to the MOE Inspector as part of our corrective action plan (See Attachment B).

2. Lead Sampling – failed to take 10 system lead samples within the required time frame (June 15, 2012 – October 15, 2012)

A) Background to Lead Sampling Non-Compliance

On August 18th, 2011, the City of Markham sought regulatory relief from lead sampling requirements under Schedule 15.1 of Regulation 170/03, *Safe Drinking Water Act*. The basis was that results of seven consecutive rounds of sampling were well below MOE DWQS limit of 0.001 mg/L for lead.

The "Conditions for Relief from Regulatory Requirements" received from the MOE stipulates that 10 lead samples are required in the distribution system. It also stipulates that these are to be taken in the 12 month sampling timeframe listed below:

1. The period from December 15 to April 15
2. The period from June 15 to October 15

During Round 10 of Lead Sampling, samples should have been taken between June 15th & October 15th, 2012. The 10 lead samples were actually collected on November 6th, 2012, outside of the specified timeframe.

B) Corrective Actions for Lead Sampling Non-Compliance

All required regulatory sampling work orders for the specific year are created at the beginning of each year, in bulk, with no reminders for completion. This can lead to overlooking certain sampling that may occur on an infrequent basis. Consequently,

Round 10 of lead sampling was overlooked and the samples were taken 3 weeks past the specified timeframe. An automated trigger process has now been implemented that will remind O&M to take lead samples at the beginning of each sample period timeframe, along with follow up reminders each week until the sampling activity has been completed. The automated trigger reminders have been successfully implemented and the latest round of lead sampling was completed, on June 18th, 2013. This change in operation has been incorporated into SOP 16a that deals with the Lead Testing Program.

In Summary

Overhauls of work instructions and flagging procedures have been implemented, and the non-compliances have been rectified. The root cause analysis process has assisted us in the development of our corrective action steps.

Additional staff refresher training on adverse water quality incident responding has been completed and documented. We have improved related work instructions and Standard Operating Procedures to better assist associated staff and operators in completing the tasks at hand promptly and fully. We are working towards a more automated approach to ensure that there are no future oversights of sampling or notification requirements. The letter to MOE has been sent on August 14th responding to the corrective actions (see Attachment B).

MOE BEST PRACTICE ISSUES AND RECOMMENDATIONS

There were no best practice issues or recommendations identified during this inspection period.

FINANCIAL CONSIDERATIONS AND TEMPLATE: (external link)

Not applicable.

HUMAN RESOURCES CONSIDERATIONS

Not applicable.

ALIGNMENT WITH STRATEGIC PRIORITIES:

Not applicable.

BUSINESS UNITS CONSULTED AND AFFECTED:

Not applicable.

The report presented herein, communicates the results of the 2012 MOE Inspection held on May 10, 2013.

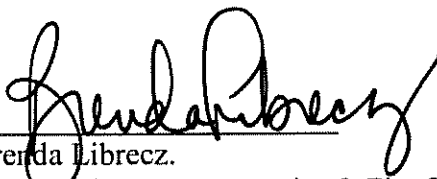
The undersigned represent the Top Management of the City of Markham's Drinking Water Distribution System and by signing below the Top Management of the Operating Authority have reviewed the MOE Inspection.

RECOMMENDED

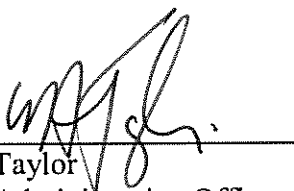
BY:



Peter Loukes, P. Eng.
Director, Environmental Services



Brenda Librecz.
Commissioner, Community & Fire Services



Andy Taylor
Chief Administrative Officer

ATTACHMENTS:

Attachment "A" – Ontario Ministry of the Environment, Markham Distribution System – Drinking Water System Inspection Report, May 2013.

Attachment "B" – Letter to MOE – Responding to Two Non-Compliances, August 14, 2013