

Agenda Item # Page #

--	--

TO:	CHAIR AND MEMBERS CIVIC WORKS COMMITTEE MEETING ON NOVEMBER 25, 2013
FROM:	JOHN LUCAS, P.ENG. DIRECTOR - WATER AND WASTEWATER
SUBJECT:	2013 EXTERNAL AUDIT OF LONDON'S DRINKING WATER QUALITY MANAGEMENT SYSTEM AND 2013 MANAGEMENT REVIEW

RECOMMENDATION

That, on the recommendation of the Director - Water and Wastewater, the following report on the 2013 external audit of London's Drinking Water Quality Management System, and the subsequent Management Review meeting, **BE RECEIVED** for information.

PREVIOUS REPORTS PERTINENT TO THIS MATTER

[Ontario's New Municipal Drinking Water Licensing Program and Endorsement of Operational Plan, November 24, 2008, Environment and Transportation Committee, Agenda Item 14](#)

BACKGROUND

Quality Management Systems (QMSs) can be defined as sets of interrelated elements (e.g. policies and procedures) that direct and control the way a facility operates with regard to quality. A QMS is a way of formally ensuring that an organization is consistently in control of the quality of the product or services that it supplies.

Following the Walkerton tragedy of May 2000, Justice Dennis O'Connor recommended that *"the MOE should initiate the development of a drinking water quality management standard for Ontario."* The Ministry of the Environment (MOE) led the development of a Drinking Water Quality Management Standard (DWQMS) which combined elements of existing ISO 9001 and HACCP standards. Through a new Municipal Drinking Water Licensing Program, the MOE mandated that municipal drinking water systems develop and implement Quality Management Systems that met the requirements of Ontario's DWQMS. Through external audits to ensure compliance, London's Water Operations and Water Engineering Divisions would then become the "accredited operating authority" for the London's water system.

An Operational Plan was developed for the London drinking water system based on the 21 Elements of the DWQMS. London's Operational Plan was endorsed by London City Council and submitted to the MOE in December, 2008.

Accreditation was to have been accomplished by a two step process. First, a Systems Audit would be performed by the Canadian General Standards Board (CGSB) to ensure that London's Operational Plan conformed to the new Standard. A successful Systems Audit would result in the issuance of a "Certificate of Accreditation (Limited Scope)".

Second, within 12 months of the issuance of the Certificate of Accreditation (Limited Scope), an On-Site Verification Audit would be conducted by CGSB. A successful On-Site Verification Audit would result in the issuance of a "Certificate of Accreditation (Full Scope)". Thereafter, the City was to conduct annual internal audits for two consecutive years, followed by On-Site Verification Audits every third year.

The first step of the process was completed successfully, and a Certificate of Accreditation (Limited Scope) was issued to the City of London on April 29, 2009. However, CGSB did not schedule an onsite audit within the original 12-month timeframe, or thereafter. In May of 2012, the MOE announced that CGSB would no longer serve as the accreditation body for operating

Agenda Item #	Page #

authorities of Ontario municipal drinking water systems. Two new auditing firms were contracted to provide this service, and on June 27-28, 2013 the City of London water system received its first On-Site Verification Audit by third-party auditors SAI Global Assurance Services.

DISCUSSION

Following London's On-Site Verification Audit, SAI Global reported that London's QMS "has been established and maintained according to the DWQMS standard and internal requirements as documented in the Operational Plan" and that "The result of the audit indicates that the Corporation of the City of London QMS was effectively implemented."

The audit involved a thorough examination of the water system documents, inspection of water system facilities, and extensive interviews with staff. The purpose of the audit was to ensure conformity with all 21 elements of the approved Operational Plan. Despite the overall positive outcome of the audit, the auditor identified five nonconformities that needed to be addressed before a Certificate of Accreditation (Full Scope) could be issued. Given that this was the first on-site audit of London's QMS, nonconformities were to be expected. The audit identified two "major" nonconformities and three "minor" nonconformities.

The first major nonconformity related to *Element 7 – Risk Assessment* of the Operational Plan. The auditor reported that the annual Risk Assessment review had not been completed in 2011, and that the 36-month Risk Assessment review had not been completed in 2012. This situation was rectified when a 36-month Risk Assessment review was completed on July 16, 2013.

The second major nonconformity related to *Element 20 – Management Review*. London's Operational Plan requires that the Top Management of the water system's operating authority conduct an annual meeting to discuss a prescribed agenda relating to the operation of the water system. Results of audits (internal or external) are one of the prescribed agenda items, and Management Review meetings were conducted following the 2010 and 2011 internal QMS audits. Staff mistakenly believed that an On-Site Verification Audit would be scheduled in 2012, and an internal audit was not scheduled in that year. A Management Review meeting was also not scheduled, and this was the cause of the nonconformity. Following the June, 2013 audit, a Management Review meeting was conducted on August 8 and 12, 2013. A summary of the Management Review findings is attached as Appendix 'A'.

The first minor nonconformity related to *Element 5 – Document and Records Control*. The auditor reported that some system documents had not been kept current.

The second minor nonconformity related to *Element 18 – Emergency Management*. The auditor reported that following emergency repairs to the Lake Huron Pipeline in 2010 and 2012, London staff did not review the actual break repair activities against the pipeline break procedure detailed in London's Operations and Maintenance Manual, and that an incident report which reviewed the pipeline break impact was not prepared following the 2012 break.

The third minor nonconformity related to *Element 19 – Internal Audits*. The auditor identified incidents in which non-conformance reports and document changes were not completed following the audit process.

Following reception of the audit report, staff were required to submit Nonconformance Reports (NCRs) to the Auditor for each of the identified nonconformities. In the NCRs, staff were required to detail the root cause of each nonconformity, the action taken to correct the incident and contain the problem, and the systemic (long term) corrective action(s) planned or taken to eliminate the root cause to prevent recurrence.

The common element associated with the five nonconformities was an inadequate provision of resources required to maintain the QMS. The 2014 Business Plan: Water Supply System identified a plan to provide additional resources toward the Drinking Water Quality Management System.

Agenda Item #	Page #

On August 28, 2013, SAI Global informed the City that the “*Corrective actions taken to resolve the non-conformance(s) have been reviewed and found to be fully satisfactory in meeting the requirements of DRINKING WATER QUALITY MANAGEMENT STANDARD*”.

Consequently, a Certificate of Accreditation (Full Scope) was issued to the City of London, a copy of which is attached as Appendix 'B'.

SUMMARY

Section 19 of the *Safe Drinking Water Act, 2012* imposes a statutory standard of care on the “owner of a municipal drinking water system, and every person who, on behalf of the municipality, oversees the accredited operating authority of the system or exercises decision-making authority over the system”. In recommending the Standard of Care provision, Justice O'Connor stated that “*the fact that a municipality has an accredited operating agency will do much to satisfy the standard of care.*”

In June, 2013, the first On-Site Verification Audit was completed for the Quality Management System of London's drinking water system. The auditor reported that London's QMS “*has been established and maintained according to the DWQMS standard and internal requirements as documented in the Operational Plan*” and that “*The result of the audit indicates that the Corporation of the City of London QMS was effectively implemented.*” In addition, five nonconformities were identified, which were subsequently addressed to the satisfaction of the auditor. This process identified the need to commit additional resources toward the maintenance of London's Drinking Water Quality Management System.

As a result of the audit, the City of London has been fully accredited as the operating authority for London's drinking water system under Ontario's Municipal Drinking Water Licensing Program.

PREPARED BY	RECOMMENDED BY:
JOHN SIMON, P.ENG. DIVISION MANAGER, WATER OPERATIONS	JOHN LUCAS, P.ENG. DIRECTOR - WATER AND WASTEWATER
REVIEWED & CONCURRED BY:	
JOHN BRAAM, P.ENG. MANAGING DIRECTOR OF ENVIRONMENTAL AND ENGINEERING SERVICES AND CITY ENGINEER	

CC:

Art Zuidema – City Manager
 Roland Welker – Division Manager – Water Engineering
 Dan Huggins - Water Quality Manager

Agenda Item #	Page #

APPENDIX 'A'

Report on QMS to Council

Date: Management Review Meeting of August 8 and 12, 2013

RESULTS OF MANAGEMENT REVIEW	REPORT (where applicable include Personnel Responsible & Due Date)
Summary of Management Review	The 2013 Management Review meeting was held between 8:00 am and 12:00 pm on August 8, and August 12, 2013. The meeting was attended by John Lucas, Director – Water and Wastewater, Roland Welker, Division Manager – Water engineering, John Simon, Division Manager – Water Operations, and Dan Huggins, Water Quality Manager and QMS Representative. The agenda items discussed were, a) Incidents of regulatory non-compliance, b) Incidents of adverse drinking water tests, c) Deviations from critical control point limits and response actions, d) Efficacy of the risk assessment process, e) Results of audits (internal and external), f) Results of relevant emergency response testing, g) Operational performance, h) Drinking water quality trends, i) Follow-up action items from previous management reviews, j) Status of management action items identified between reviews, k) Changes that could affect the QMS, l) Summary of consumer feedback, m) Resources needed to maintain the QMS, n) Results of the infrastructure review, o) Operational Plan currency, content and updates, and p) Summary of staff suggestions.
Deficiencies Identified	<ol style="list-style-type: none"> 1) It was noted that the gas chlorination equipment at the Springbank Reservoir Complex is approximately 20 years old, and that there have been recent maintenance and control issues related to this equipment. 2) The June 2013 On-site Verification Audit of the QMS identified 5 nonconformities (NCs), and several opportunities for improvement (OFIs). 3) The internal and external audits have indicated that the QMS is effective, but is not being maintained as well as it could be. The underlying cause of the NCs and OFIs appears to be that the QMS Rep has several other responsibilities that limit his ability to address the maintenance needs of the QMS.
Decisions Made / Action Items	<ol style="list-style-type: none"> 1) It was agreed that it may be prudent to enlist the services of an Engineering Consultant to review the entire chlorination process at the reservoirs. John Simon to investigate further. 2) Dan Huggins to complete the Nonconformance Reports and submit to SAI Global prior to the August 28, 2013 deadline. Following satisfactory closure of the Nonconformance Reports, Dan Huggins to update the Operational Plan accordingly, incorporating the suggested opportunities for improvement where appropriate 3) It was suggested that a full time “Compliance Coordinator” position be established, who would report to the QMS Rep and undertake functions required to maintain the QMS. John Lucas to discuss the resources necessary to maintain the QMS with the City Engineer, and include the outcome decision(s) in the 2014 Water Business Plan.
Other QMS Issues Identified (including summary of corrective actions)	N/A

Agenda Item #	Page #

APPENDIX 'B'

Certificate of Accreditation



CERTIFICATE OF ACCREDITATION

This is to certify that the following operating authority:

The Corporation of the City of London
663 Bathurst St, London, Ontario N5Z 1P8 Canada

Additional Drinking Water System
City of London Distribution System

operates a

Quality Management System

which conforms with the requirements of

Drinking Water Quality Management Standard (DWQMS):2006

for the following scope of registration

Full Scope - Entire DWQMS

Certificate No.:	CERT-0065602	Original Certification Date:	August 29, 2013
File No.:	1631756	Current Certification Date:	August 29, 2013
Issue Date:	August 29, 2013	Certificate Expiry Date:	August 28, 2016



Chris Jouppi
President,
QMI-SAI Canada Limited



Guillaume Gignac, Ing.f
Vice President, Corporate Operations, Accreditation & Quality
QMI-SAI Canada Limited



Accredited by:
SAI Global Certification Services Pty Ltd, 208 Sussex Street, Sydney NSW 2000 Australia with QMI-SAI Canada Limited, 30 Carlton Court, Suite 200,
Toronto, Ontario M5W 7Y3 Canada (SAI GLOBAL). This registration is subject to the SAI Global Terms and Conditions for Certification. While all due care
and skill was exercised in carrying out this assessment, SAI Global accepts responsibility only for proven negligence. This certificate remains the property
of SAI Global and must be returned to them upon request.
To verify that this certificate is current, please refer to the SAI Global On-Line Certification Register: www.qmi-saiglobal.com/online_certificate

