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| <p><b>1. 2015 DRINKING WATER QUALITY MANAGEMENT SYSTEM ANNUAL REPORT</b></p> <p><b>RAPPORT ANNUEL 2015 DU SYSTÈME DE GESTION DE LA QUALITÉ DE L'EAU POTABLE</b></p> |
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**COMMITTEE RECOMMENDATION**

**That Council receive the 2015 Drinking Water Quality Management System Annual Report.**

**RECOMMANDATION DU COMITÉ**

**Que le Conseil municipal prenne connaissance du Rapport Annuel 2015 du système de gestion de la qualité de l'eau potable.**

**DOCUMENTATION / DOCUMENTATION**

- 1. Acting Deputy City Manager's report, City Operations, dated 14 June 2016 (ACS2016-COS-ESD-0021).**

**Rapport de la directrice municipale adjointe par intérim, Opérations municipales, daté le 14 juin 2016 (ACS2016-COS-ESD-0021).**

**ENVIRONMENT COMMITTEE  
REPORT 10  
13 JULY 2016**

**2**

**COMITÉ DE L'ENVIRONNEMENT  
RAPPORT 10  
LE 13 JUILLET 2016**

**Report to  
Rapport au:**

**Environment Committee  
Comité de l'environnement  
21 June 2016 / 21 juin 2016**

**and Council  
et au Conseil  
13 July 2016 / 13 juillet 2016**

**Submitted on June 14, 2016  
Soumis le 14 juin 2016**

**Submitted by  
Soumis par:  
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**Ward: CITY WIDE / À L'ÉCHELLE DE LA VILLE      File Number: ACS2016-COS-ESD-0021**

**SUBJECT: 2015 Drinking Water Quality Management System Annual Report**

**OBJET: Rapport annuel 2015 du système de gestion de la qualité de l'eau  
potable**

## **REPORT RECOMMENDATIONS**

**That the Environment Committee and Council receive the 2015 Drinking Water Quality Management System Annual Report.**

## **RECOMMANDATIONS DU RAPPORT**

**Que le Comité de l'environnement et le Conseil municipal prennent connaissance du Rapport Annuel 2015 du système de gestion de la qualité de l'eau potable.**

## **BACKGROUND**

Justice Dennis O'Connor, in Part Two of the Report of the Walkerton Inquiry, recommended the adoption of quality management for municipal drinking water systems. It was also recommended that a quality management standard specifically designed for drinking water systems be developed and implemented in Ontario, thus leading to the creation of the Drinking Water Quality Management Standard (DWQMS). The requirement to implement the DWQMS is now mandated through the *Safe Drinking Water Act (2002)*.

Council, as the Owner of the municipal drinking water systems, has a number of duties and responsibilities under the *Safe Drinking Water Act (2002)*, which are described in sections 11, 13, 16 and 17 of the Act. The duties of the Owner related to the Standard of Care are described under section 19, which came into force on December 31, 2012. In order to ensure that new city councillors were aware of their duties and responsibilities under the Act, staff organized a Technical Briefing of Council on October 5, 2015.

Justice O'Connor further commented that municipalities who had an accredited Operating Authority and an Operational Plan that meets the DWQMS would be a significant step in meeting the Standard of Care under the Act. One of the primary tools that the Owner has in place to satisfy the Standard of Care under the Act is to have Municipal Drinking Water Licences for all its drinking water systems. The elements of each Licence include:

- A permit to take water;
- A drinking water works permit;

- An operational plan;
- A financial plan; and
- An accredited operating authority.

The City of Ottawa has valid licences for all 7 of its drinking water systems:

- Central System (Britannia and Lemieux water purifications plants and water distribution system;
- Carp Communal Well System;
- Vars Communal Well System;
- Kings Park (Richmond) Communal Well System;
- Munster Hamlet Communal Well System; and
- Shadow Ridge (Greely) Communal Well System.

It should be noted that Shadow Ridge is not owned by the City, but the City of Ottawa is the Operating Authority.

The City of Ottawa was successfully re-accredited as an Operating Authority on September 4, 2014. In August 2015, the third party accreditation body conducted their surveillance audit of the City's Quality Management System (QMS). Results were provided on October 2, 2015, and the audit demonstrated zero findings of non-conformance. This is the fourth consecutive year that the City has been in 100% full conformance with its QMS.

A requirement of the DWQMS is to conduct an annual management review and to ensure that the results of this review are communicated to the Owner (Council) by Top Management. Top Management is a term defined in the DWQMS and in the case of the City, it includes the General Manager and Managers of Environmental Services. Top Management is responsible to make recommendations to the Owner regarding the drinking water systems and the QMS.

The main purpose of this report is to provide Council, as the Owner of the municipal drinking water systems, with an update on the implementation and the performance of the QMS.

## **DISCUSSION**

As a requirement of the Operational Plan, a comprehensive review of the QMS must be undertaken annually by Top Management. Top Management is defined as a person, persons, or a group of people at the highest management level within the Operating Authority that makes decisions respecting the QMS and recommendations to the Owner respecting the drinking water systems. At the City of Ottawa, the leader of Top Management is the General Manager of the Environmental Services Department.

Overall, the City of Ottawa has implemented its Operational Plan successfully. Some examples that demonstrate this achievement in 2015 include:

- The most recent MOECC inspections have rated all drinking water systems at 100% for the sixth year in a row for municipally owned drinking water systems.
- Each year, a third-party accreditation body conducts an external audit of the Operational Plan. This is the fourth consecutive year that the City has been in 100% full conformance with its QMS.
- There has been a 75% reduction in annual “deviations from critical control point limits” set by the Water Production Unit between 2008 and 2015. These limits are set well within the regulatory standards for safe drinking water. These deviations indicate opportunities for making improvements to the water treatment process and for improving the monitoring of safe drinking water. The cycle of continuous improvement is the foundation of the DWQMS, and since 2009, staff have closed out 90% of Priority 1 action items associated with these opportunities.
- In 2015, significant improvements were made in customer service by reducing the time to resolve water quality investigations. Every year, DWS responds to about 340 requests to conduct water quality tests at a customer’s home. The time to provide the initial call back to the customer went from a high of 3 days in 2012, to about 4 hours in 2015. DWS invested in smart phones allowing field staff to receive e-mail notifications directly when a Service Request was logged in the Department’s maintenance management system. DWS easily exceeded its own internal target of 1 day for a call back to the customer. DWS also improved the overall time to provide the follow-up water quality test results. The average time to provide test results went from a high of 8 days in 2012 to 3 days in 2015. This improvement was made with

modest changes to the business process, and further improvements are expected in 2016.

- A Key Performance Indicator of Water Distribution systems is the number of watermain breaks per 100 km of watermain. The 5-year rolling average has been steadily decreasing since 2011 from 9.58 to 8.42 in 2015. This represents an overall reduction of 12%. The City invests in watermain renewal projects each year and in 2015 over \$35 million was invested in various capital programs aimed at system renewal initiatives. The City also invests about \$2 million annually in its Cathodic Protection Program which helps to extend the service life of metallic watermain by reducing corrosion.
- The average time customers were out of service during repairs to the water distribution system decreased from a high of 9 hours in 2011 to 6.6 hours in 2015. These results were achieved by improving the planning and monitoring process of component repairs.

All these efforts reinforce the fact that the City of Ottawa produces and delivers some of the best quality and safest drinking water in the world.

There are a total of 16 topics that must be considered in the annual management review (Table 1). This report will provide an update only on those items that require attention. All other items not discussed have either been reported to Council previously or the items have been reviewed and determined to be in compliance with all regulations or in conformance with the Operational Plan. A full list of recommended action items as a result of the 2015 Management Review can be found in Document 1.

**Table 1 – List of items for annual review that will be discussed in this report**

<b>QMS Topic</b>	<b>Summary provided in this report (yes or no)</b>
Incidents of regulatory non-compliance	No issues (ACS2016-COS-ESD-0011)
Incidents of adverse drinking water tests	No issues (ACS2016-COS-ESD-0011)

<b>QMS Topic</b>	<b>Summary provided in this report (yes or no)</b>
Deviations from critical control point limits and response actions	No issues
Efficacy of the risk assessment process	No issues
Results of audits (internal and external)	No issues
Results of relevant emergency response testing	No issues
Operational performance	No issues
<b>Raw water supply and drinking water quality trends</b>	<b>Yes – requires discussion</b>
<b>Follow-up action items from previous management reviews</b>	<b>Yes – requires discussion</b>
Status of management action items identified between reviews	No issues
Changes that could affect the QMS	No issues
Summary of consumer feedback	No issues
Resources needed to maintain the QMS	No issues
<b>Results of the infrastructure review</b>	<b>Yes – requires discussion</b>
Operational plan currency, content and updates	No issues
Summary of staff suggestions	No issues

#### **Raw water supply and drinking water quality trends**

As previously reported in the 2014 DWQMS Annual Report (ACS2015-COS-ESD-0017), there is evidence of an increasing trend in nitrate concentration in the ground water wells in Shadow Ridge. While nitrate levels are still well below the Maximum Allowable Concentration (MAC) for Ontario Drinking Water Standards, if the increasing trend continues without any remedial action by the City, nitrate concentrations could reach the MAC in approximately 10 to 15 years. It should be noted that the MAC for nitrate in Ontario is 10 mg/L and the 2015 average concentration for Shadow Ridge was 4.0 mg/L, which is well below the standard. The City's Planning and Growth Management Department has developed a risk mitigation plan to address this issue.

### **Follow-up action items from previous management reviews**

An outstanding Priority 1 action item relates to the adoption by Council of a Backflow Prevention Program and by-law. On October 14, 2015, Council carried the following recommendation from the staff report on the Backflow Prevention Program (ACS2015-COS-ESD-0013):

That Council approve the development of a Backflow Prevention Program in accordance with the parameters and consultation strategy described in this report, and report back to Committee and Council with program details in Q1 2016.

Staff will submit the follow-up report to Environment Committee in the Fall. Once Council adopts the new program and by-law, this action item will be considered closed.

### **Results of the Infrastructure Review**

The City has continued to move forward with the large-diameter condition assessment program. The main benefit of this program is the ability to proactively assess and identify deficiencies that can be corrected in a planned and controlled manner. There are about 237 km of large-diameter watermains (greater than or equal to 610 mm in diameter) in the City.

In 2015, the program exceeded its 5 km inspection target by assessing 10 km of watermain. Each inspection provides unique information upon which repair, rehabilitation and replacement decisions are made. Completion of a comprehensive condition assessment often takes multiple years to complete. The Department intends to provide a status report to Council in 2017 documenting the program's results to date



and identify opportunities to further improve the large-diameter condition assessment program. ESD staff will continue to report through the established reporting on the Term of Council 2015-2018 Priorities, in the City Balanced Scorecard Report to Council scheduled for early in 2017.

### **RURAL IMPLICATIONS**

There is evidence of an increasing trend in nitrate concentration in the ground water wells in Shadow Ridge. While nitrate levels are still well below the MAC for Ontario Drinking Water Standards, the City's Planning and Growth Management Department has developed a risk mitigation plan to address this issue.

### **CONSULTATION**

Public consultation or notification is not required as this report is administrative in nature.

### **COMMENTS BY THE WARD COUNCILLOR(S)**

This is a City-wide report.

### **ADVISORY COMMITTEE(S) COMMENTS**

This section is not applicable.

### **LEGAL IMPLICATIONS**

There are no legal impediments to receiving the report for information.

### **RISK MANAGEMENT IMPLICATIONS**

There is evidence of an increasing trend in nitrate concentration in the ground water wells in Shadow Ridge. While nitrate levels are still well below the MAC for Ontario Drinking Water Standards, the City's Planning and Growth Management Department has developed a risk mitigation plan to address this issue.

### **ASSET MANAGEMENT IMPLICATIONS**

This report is consistent with the City's Comprehensive Asset Management (CAM) Program ([City of Ottawa Comprehensive Asset Management Program](#)) objectives. To

fulfill its obligation to deliver quality services to the community, the City must ensure that assets supporting City services are managed in a way that balances service levels, risk and affordability. Quality management and performance reporting are components of an advanced system to manage assets (CAM). The City's Drinking Water Quality Management System Annual Report provides line of sight to senior management and key indicators of the strength of the City's seven drinking water systems and service delivery.

### **FINANCIAL IMPLICATIONS**

This report has no financial implications.

### **ACCESSIBILITY IMPACTS**

There are no accessibility impacts associated with this report.

### **ENVIRONMENTAL IMPLICATIONS**

The development of the QMS is provincially legislated under the *Safe Drinking Water Act (2002)*. The QMS has been reviewed by a third-party accreditation body and the City of Ottawa has obtained its Operating Authority Accreditation. This report also fulfills the legislative requirement to report on the Annual Management Review of the QMS to the Owner.

### **TECHNOLOGY IMPLICATIONS**

There are no direct technical implications associated with this report.

### **TERM OF COUNCIL PRIORITIES**

The DWQMS is the key tool that supports and assures Council, as the Owner of the drinking water systems, that it is meeting its duties and responsibilities under the *Safe Drinking Water Act (2002)*, and the Statutory Standard of Care (section 19).

The implementation of the Operational Plan also supports the Sustainable Environmental Services and Service Excellence Strategic Priorities. The Operational Plan ensures the commitment to provide a reliable supply of safe drinking water to the consumer; meet or exceed applicable legislation and regulations; implement, maintain

and continually improve the QMS, infrastructure and technology; and deliver excellent customer service through responsiveness, accountability and innovation.

**SUPPORTING DOCUMENTATION** *(Previously distributed to all Members of Council and held on file with the City Clerk)*

Document 1: 2015 Management Review Action Items

**DISPOSITION**

Staff will continue to work to provide safe drinking water, following all legislation. Staff will implement any direction received as a result of this report.