# Village of Chalk River

# Drinking Water Quality Management Standard (DWQMS)

# Operational Plan

# Chalk River Water System

*Owned by:*

**The Corporation of the Town of Laurentian Hills**

*Operated by:*

**Veolia Water Canada Inc.**

August 15, 2022

# Table of Contents

## Ownership and Operation

The Corporation of the Town of Laurentian Hills is the Owner and provides governance for all water systems within. Each system is described within Element 6. The Town utilizes the services of an independent contract Operating Authority (Veolia Water Canada Inc.) who operates and maintains all water systems on behalf of the Town. Under the QMS, the Operating Authority is responsible for implementing and maintaining the QMS in partnership with the Town.

## Element 1. Quality Management System (QMS)

This Operational Plan describes the contents of the drinking water Quality Management System for the Chalk River Water System. The contents of this Operational Plan are based upon the requirements of the *Drinking Water Quality Management Standard (Version 2.0 February 2017)*

This Operational Plan has been reviewed and approved by both the Owner and the Operating Authority.

## Element 2. QMS Policy

The QMS Policy is posted at the Chalk River drinking water plant and is also included in Appendix F

Communication of the QMS Policy is described in the Communications Procedure (AW-ADMIN-1200).

## Element 3. Commitment & Endorsement

This Operational Plan has been reviewed and endorsed by the Operating Authority and the Owner. The signature below shows the Operating Authority's commitment to ensuring that the Quality Management System is regularly assessed to confirm its ongoing applicability and relevance.

Owner endorsement is shown in the Council resolution attached (Appendix D). It is obtained when Council changes (i.e. after municipal election). Top Management endorsement can also be found in Appendix D. It is typically obtained after Owner endorsement or when significant changes are made to the operational plan (not the associated procedures)

Top Management ensures the Operating Authority is aware of all applicable legislative and regulatory requirements. Top Management ensures that a QMS is in place that meets the requirements of the Standard, and that the QMS is communicated by following the Communications Procedure.

Top Management can determine, obtain or provide the resources needed to maintain and improve the QMS, as demonstrated through records created under the QMS, and through the Management Review Process. The Review and Provision of Infrastructure procedure describes how a need for resources may be identified, documented, and followed through.

Controlled copies of the related procedures are located on the applicable Veolia Google Drive

| | |
|---|---|
| AW-ADMIN-1200 | Communications Procedure |
| AW-ADMIN-1400 | Review and Provision of Infrastructure Procedure |
| AW-ADMIN-2000 | Management Review Procedure |

# Element 4. QMS Representative

The QMS representative is the Project Manager. Top Management appoints, authorizes and maintains the QMS representative. As the QMS Representative, this person has both the responsibility and authority to:

- Administer the QMS by ensuring that processes and procedures needed for the QMS are established and maintained,
- Report to Top Management and Owner on the performance of the QMS and any need for improvement.
- Ensure that current versions of documents required by the QMS are being used at all times,
- Ensure that all personnel are aware of all applicable legislative and regulatory requirements that pertain to their duties for the operation of the Chalk River Water System, and
- Promote the awareness of the QMS throughout the Operating Authority
- Arranging for internal audits

# Element 5. Document and Records Control

Procedures are in place for QMS Document Control and Record Control. These procedures describe how documents and records are controlled.

| | |
|---|---|
| AW-ADMIN-500 | Document Control Procedure |
| AW-ADMIN-510 | Record Control Procedure |

# Element 6. Drinking-Water System

The Chalk River water system is owned by the Corporation of the Town of Laurentian Hills and operated by Veolia Canada.

### Drinking Water System description

The Chalk River Water Treatment System is located on 73 Railway St in the Village of Chalk River. The system is owned by the Corporation of the Town of Laurentian Hills and is operated by Veolia Canada.

The water supply for the Chalk River drinking water system is Corry Lake which is a shallow lake within the Chalk River drainage basin. The Chalk River drains into Sturgeon Lake which outlets into the Ottawa River. The Chalk River watershed includes Wylie Creek and Moffat Creek and numerous small lakes and wetlands. Potential sources of contamination are limited to forestry activity located throughout the drainage basin and railroad/residential activity adjacent to Corry Lake and Wylie Creek.

Raw water is drawn from Corry Lake south of the community through some 60m of 400mm diameter **and 80m of 300mm** polyethylene pipe. The inlet structure screen is equipped with 25mm x 40mm openings and is located approximately 25m from shore about 2m below the lake surface. There are no recorded problems with frazil ice, zebra mussels or silt/sediment accumulation.

Since the source is surface water, there can be bacteriological contamination but counts are not typically significant. There is no regulatory requirement for the monitoring of surface water turbidity. The summer months see an increase in the daily taking volumes but these volumes are still well within the system capacity of 1987$m^3$/d. Recent flow data can be found in the regulatory annual reports. There are seasonal pH and alkalinity issues throughout the year that cause some adjustments in chemical dosages. Major operational challenges would occur if there was artificial contamination of the lake or other locations within the watershed upstream of Corry Lake.

The raw water is directed through approximately two kilometers of 200mm diameter asbestos-concrete pipe to the water treatment facility on Railway Street via two 25 HP variable speed centrifugal pumps, each rated at 23L/s.

The plant has two parallel treatment trains, each consisting of coagulation, flocculation, settling and dual media (sand and anthracite) filtration. Each filter has two compartments. The newer treatment train has improved operational characteristics including a more efficient solids contact tank which consists of a proprietary flocculator/clarifier providing a mixing zone, a reaction well cone with baffles, a clarification zone and a concentric sludge collector. The splitter box is designed to divide the water flow equally between the two flocculator/clarifier units. It is intended that the system be operated with the two trains, however the needs of the system can be met with only one train.

The water treatment facility contains flow monitoring equipment and analyzers for pH, turbidity, chlorine residual and fluoride. There are also duty and standby pumps for the chemical feed systems. Chemicals used in the treatment system include:

- Sodium hypochlorite for disinfection
- Soda ash for pH and alkalinity control
- Aluminum chloride (PAX-XL1900) as a primary coagulant
- Polyelectrolyte used as a coagulant aid
- Hydrofluosilicic acid for fluoridation

Process data is recorded by a SCADA system. All pump flows, run hours, tank levels, chlorine residuals, turbidities, chemical residuals, etc. are monitored continuously. Alarm set points are monitored and the system will shut down when numbers drop below the setpoints. It will also notify staff for some types of equipment failures and will shut the plant down. There are daily and monthly reports that are generated for operations staff to review.

There are backup gensets at Corry Lake, the WTP and the water tower.

Water leaving the treatment plant is pumped via one of three 15HP high lift pumps to the elevated storage tank through a 470m long, 250mm diameter pipe, in order to complete its primary disinfection process. The elevated tank has a storage capacity of **1380**$m^3$.

Water from the tower is conducted to Main Street via a 320m long, 200mm diameter pipe. The distribution system consists of approximately 12km of watermain (equal to or less than 10 inch diameter) with at least ten dead-ends. There are approximately 70 fire hydrants on the system.

For process diagrams for the Chalk River water system, refer to Appendix A

# Element 7. Risk Assessment

The procedure entitled Risk Assessment describes the method of hazard identification, risk assessment, and critical control point determination for the Chalk River water system.

| | |
|---|---|
| AW-ADMIN-700 | Risk Assessment Procedure |

# Element 8. Risk Assessment Outcomes

The results of the Risk Assessment are documented in the Risk Assessment spreadsheet.

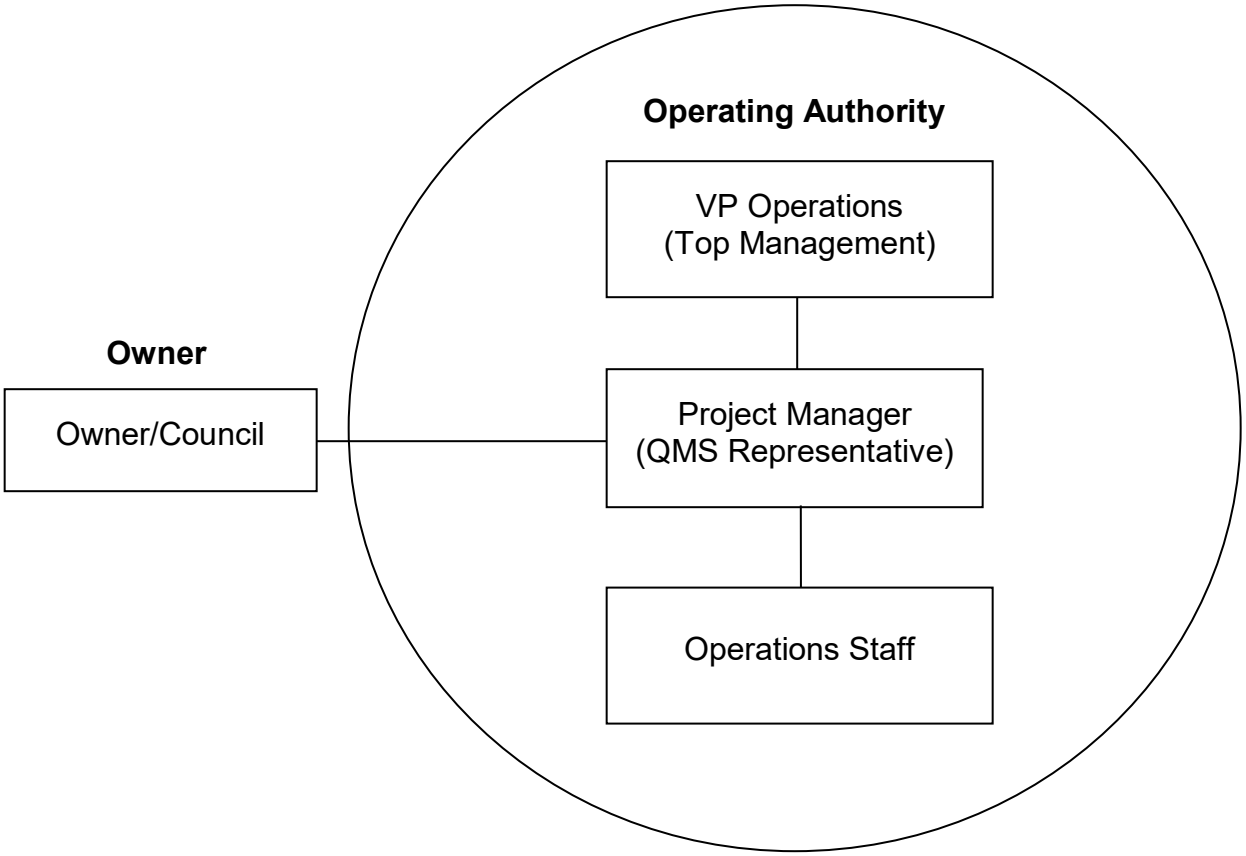
Controlled conditions for each CCP identified in the Risk Assessment spreadsheet are described in detail in the CCP procedures.

| | |
|---|---|
| Risk Assessment Spreadsheets (Appendix B) | Chalk River Water System |
| CCP procedures | designated by a 'CR-CCP" prefix in their title, |

# Element 9. Organizational Structure, Roles, Responsibilities & Authorities

The organizational structure, roles, responsibilities and authorities for the Operating Authority, corporate oversight Operating Authority roles, and Top Management are described in the Structure and Responsibilities Procedure.

**QMS Organizational Chart**




AW-ADMIN-900 Organizational Structure, Roles, Responsibilities & Authorities Procedure

## Element 10. Competencies

The training procedure describes how competencies are identified, maintained, and documented. It also describes activities to ensure personnel are aware of the relevance of their duties and how they affect safe drinking water.

AW-ADMIN-1000 Competencies

## Element 11. Personnel Coverage

The method to ensure sufficient personnel coverage at all sites is documented in the procedure:

CR-ADMIN-1100 Personnel Coverage

## Element 12. Communications

The Communication Procedure, AW-ADMIN-1200, describes how the QMS is communicated between Top Management and the Owner, Operating Authority personnel, suppliers, and the public.

## Element 13. Essential Supplies & Services

A list of all supplies and services deemed essential to the delivery of safe drinking water can be found in CR-ADMIN-1300. The list typically includes a primary and a secondary supplier to ensure the procurement of essential and critical supplies and services. Standard order quantities and order set points may also be included.

Where applicable, supplies must meet NSF and ANSI 60 standards. Supplies are verified against the order requisition when received. In the case of any discrepancies, the delivery may not be accepted. Integrity of the supplies is also checked at time of delivery.

## Element 14. Review & Provision of Infrastructure

A procedure has been created to review the adequacy of infrastructure and the resources necessary to operate and maintain the drinking water system safely and effectively.

CR-ADMIN-1400 Review and Provision of Infrastructure

## Element 15. Infrastructure Maintenance, Rehabilitation & Renewal

Maintenance of the raw water and treatment facilities is the responsibility of the Operating Authority, depending on the type and cost of maintenance.

Infrastructure maintenance, rehabilitation, and renewal are addressed by the following:

***Planned Maintenance:*** Planned maintenance is set up by the Operating Authority using the JobCal computerized maintenance management system (CMMS). Scheduled tasks, and their frequency, are typically defined by manufacturer's literature when available and revised (or created) as needed according to operator experience/observations. Planned maintenance tasks are communicated from the OA to the Owner only if the work falls outside the scope of the O&M contract between the Owner and the OA. Completed tasks are recorded in the operator's log book and task work orders are closed out in JobCal.

***Unplanned Maintenance:*** Unplanned maintenance tasks result from equipment malfunction or breakage.

Major (coordinated between Owner and OA) unplanned maintenance is authorized by the Owner. Minor unplanned maintenance can be performed without the consent of the Owner, but

notification is made to the Owner, typically in the quarterly operating report. The OIC typically responds to unplanned maintenance during normal working hours while the on-call operator responds during off-hours. Documentation of unplanned maintenance tasks is recorded in the logbooks and can also be recorded in the CMMS as a corrective work order.

Measures to prepare for and expedite unplanned maintenance include equipment redundancy (back-up units), spare parts inventory, as well as documented repair and safety procedures.

The Owner maintains a budget for unplanned maintenance items. The OA does not have any control over this budget.

***Rehabilitation/Renewal/Capital Upgrades:*** All capital expenditures/improvements are the responsibility of the Owner. Replacement of aging fixed heavy equipment, as well as upgrades, expansions, and in-ground systems improvements are planned by the Owner, in discussion with the operations staff and the Project Manager. Financial responsibility for this maintenance also lies with the Owner. Long-term major infrastructure maintenance, rehabilitation and renewal activities are conducted at least annually, either via discussion with Owner and/or in operations reports.

A system maintenance review and relevant infrastructure items (i.e. infrastructure review) are communicated to the Owner via an operations report, typically issued quarterly.

Effectiveness of the CMMS is determined by how frequently preventative maintenance is required. If it is found that maintenance is being conducted too frequently, or not often enough, the task schedule can be adjusted. This would be done by the QMS Rep. after communication from operations staff

## Element 16. Sampling, Testing & Monitoring

Please refer to CR-ADMIN-1600 for the Sampling, Testing and Monitoring procedure

## Element 17. Measurement & Recording Equipment Calibration & Maintenance

Methods of measurement and recording equipment calibration and maintenance are described in detail in the procedure CR-ADMIN-1700.

CR-ADMIN-1700 Measurement & Recording Equipment Calibration & Maintenance

## Element 18. Emergency Management

Please refer to procedure CR-ADMIN-1800 for Emergency Management.

## Element 19. Internal Audits

The Internal Audit Procedure AW-ADMIN-1900 describes how conformity of the QMS is evaluated on an annual basis. The procedure describes how audit criteria, frequency, scope, methodology and records are identified. It also describes how corrective actions are initiated as a result of an internal audit, and provides references to the Continual Improvement Procedure.

Other procedures relating to the Internal Audit are:

AW-ADMIN-1910 Internal Audit Checklist

AW-ADMIN-1920 Continual Improvement Procedure

## Element 20. Management Review

The Management Review Procedure describes the procedure for management review, including instructions related to all of the required inputs to the meeting. The procedure also describes how Top Management considers results, identifies deficiencies, and records and forwards results to the Owner and to other key personnel.

AW-ADMIN-2000 Management Review Procedure

AW-ADMIN-2010 Management Review Checklist

## Element 21. Continual Improvement

The Operating Authority and Owner of the Chalk River Water System strive to continually improve the Quality Management System through the use of the QMS Policy, Internal Audits, Corrective Actions, Management Review, and the Analysis of Process Data.

The Continual Improvement Procedure AW-ADMIN-1920 describes how QMS-related corrective or preventive actions are documented, and how steps are followed when implementing corrective and preventive actions.

***Table of Revisions***

| ***Date*** | ***Description of Revision*** |
|---|---|
| Mar. 1, 2010 | Initial issue of Plan |
| Feb. 7, 2011 | Updated Element 15 as per CAR 616<br>Updated how Owner Endorsement is shown |

| | |
|---|---|
| Mar. 24, 2011 | Updated flow information (system description) for 2010 |
| Mar. 15, 2012 | Updated Element 15 to accurately describe actual events |
| Jan. 23, 2013 | Removed old Top Management signature and included new TM endorsement in Appendix D<br>Updated infrastructure review and CMMS effectiveness |
| Mar. 28, 2014 | Updated drinking water system description-event driven fluctuations, removed reference to 2009 flows; changed single speed pumps to variable speed pumps<br>Removed reference to Correction Action From (AW-ADMIN-1930) in Element 19 |
| April 29, 2014 | Changed reference in Element 16 to CR-ADMIN-1600 |
| Sept. 23, 2015 | Changes made to the drinking water system description and Unplanned Maintenance (bold)<br>Removed Compliance Manager from Organizational Chart |
| Mar. 6, 2017 | Added number of hydrants and gensets in DWS description |
| Mar. 31, 2017 | Rephrased item about bacteriological contamination in the source water |
| Mar. 27, 2018 | Element 15: added item about maintenance responsibilities<br>Element 15: removed reference to skipping Q4 operations reports |
| June 20, 2018 | Updated Element 15 to include new reference to long term forecasting of infrastructure maintenance, etc. |
| Oct. 17, 2018 | Updated all American Water references to Veolia |
| Jan. 29, 2019 | Updated Organizational Chart (Element 9)<br>Revised where copies are kept in Element 3 |
| May 2, 2019 | Updated Element 4 to include two additional responsibilities |
| Dec. 20, 2019 | Element 1: Updated reference to new Standard (2.0)<br>Updated references to AW-ADMIN-1920 (Continual Improvement Procedure) |
| Mar. 31, 2020 | Element 6: Added description of SCADA system |
| Apr. 28, 2020 | Updated Element 2. Removed QMS policy |
| May 28, 2020 | Element 3: updated when endorsements are obtained |
| Aug. 15, 2022 | Element 6: updated raw water piping and Tower volume to match DWWP |

| | Title | Document No. |
|---|---|---|
| VEOLIA | OPERATIONAL PLAN TABLE OF CONTENTS | CR-ADMIN-TC |
| | Approved By:  | Effective Date: April 26, 2022 |

The signature above shows approval of all of the following Administrative procedures:

| Operational Plan Section | Approval Date (dd/mm/yr) | Revision Number |
|---|---|---|
| AW-ADMIN-500 DOCUMENT CONTROL | 22/01/2019 | 15 |
| AW-ADMIN-510 RECORDS CONTROL | 21/09/2018 | 9 |
| AW-ADMIN-700 RISK ASSESSMENT | 19/12/2019 | 8 |
| AW-ADMIN-900 ORGANIZATIONAL STRUCTURE, ROLES, RESPONSIBILITIES AND AUTHORITIES | 24/05/2019 | 7 |
| AW-ADMIN-1000 COMPETENCIES | 22/01/2019 | 10 |
| CR-ADMIN-1100 PERSONNEL COVERAGE | 05/10/2018 | 4 |
| AW-ADMIN-1200 COMMUNICATIONS | 30/03/2021 | 5 |
| CR-ADMIN-1300 ESSENTIAL SUPPLIES & SERVICES | 30/03/2021 | 19 |
| CR-ADMIN-1400 REVIEW AND PROVISION OF INFRASTRUCTURE | 29/01/2019 | 5 |
| CR-ADMIN-1600 SAMPLING, TESTING AND MONITORING | 31/03/2021 | 7 |
| CR-ADMIN-1700 EQUIPMENT CALIBRATION AND MAINTENANCE | 15/10/2018 | 5 |
| CR-ADMIN-1800 EMERGENCY MANAGEMENT | 24/01/2020 | 6 |
| AW-ADMIN-1900 INTERNAL AUDIT | 28/04/2020 | 9 |
| AW-ADMIN-1910 INTERNAL AUDIT CHECKLIST | 03/05/2018 | 2 |
| AW-ADMIN-1920 CONTINUAL IMPROVEMENT PROCEDURE | 12/12/2019 | 12 |
| AW-ADMIN-2000 MANAGEMENT REVIEW | 28/04/2020 | 6 |
| AW-ADMIN-2010 MANAGEMENT REVIEW CHECKLIST | 24/09/2018 | 1 |

| Appendices | Approval Date (mm/dd/yr) | Revision Number |
|---|---|---|
| Appendix A: Process Flow Diagram | January 2019 | N/A |

| | | |
|---|---|---|
| Appendix B: Risk Assessment | 04/26/2022 | N/A |
| Appendix C: removed | | |
| Appendix D: Owner/Top Management Endorsement<br>Municipal (Council) Endorsement<br>Top Management Endorsement | <br>05/22/2019<br>01/25/2022 | <br>N/A<br>N/A |
| Appendix E: Emergency Contact List | 11/16/2021 | N/A |
| Appendix F: QMS Policy | 05/19/2020 | N/A |

## Purpose

This procedure defines the actions and responsibilities of the Operating Authority staff to control creation, approval, distribution and revision of all documents related to the Quality Management System (QMS).

Creating, revising, approving and releasing documents must be performed in a consistent manner, so that documents can be easily retrieved, stay current and accurate, and are available to the user. All obsolete documents must be promptly removed from use. Proper maintenance of documents is critical for conformance with the Drinking Water Quality Management Standard (DWQMS), and also for compliance with drinking water legislation.

## Definitions

"Document" – an official paper that gives information about something or that is used as proof or support of something

## References

Drinking Water Quality Management Standard Element 5

## Procedure

***Who***

- The QMS Representative (or designate), shall be responsible for the control of QMS documents.
- The QMS Representative (or designate) creates, edits, and releases QMS documents, and controls obsolete documents

***What***

The following QMS documents are controlled under this procedure:

- Internally created QMS documents include:
    - Operational Plan ("QMS manual")
    - QMS Procedures (Administrative Procedures)
    - QMS Work Instructions (Standard Operating Procedures)
    - Blank forms (excluding work orders), checklists
    - Risk Assessments and Critical Control Point Procedures

- Externally created QMS documents include:

- Applicable federal, provincial and municipal legislation
- Industry standard procedures
- Permits, licenses, approvals or other legal documents filed at the facilities

The methods by which control over records will be exercised are described in the Record Control Procedure.

***Maintenance Documents***

Maintenance documents such as Equipment Manuals will be kept on-site, typically within the Operations and Maintenance Manuals

***Reviewing/Approving***

- As required, the QMS rep (or designate) reviews QMS documents for any required updates or modifications
- The QMS rep may delegate document modifications if needed
- If a designate creates or edits a document, the QMS rep must be notified and approve the revised document prior to its release
- If the document is not approved or requires additions, the QMS rep will work with the designate to create an approved document
- The QMS Rep approves all newly created and edited QMS procedures prior to their release, by signing in the signature block of the document or Administrative Procedure Table of Contents
- All internal QMS documents are electronically controlled, with only the QMS rep, or designate, having access to the master documents
- Edits to the document are summarized in the Table of Revisions located within the body of the document
- At the time procedures are reviewed associated forms must also be reviewed. If any changes are required to the form, they will be recorded in the associated procedure revision table.
- Electronic calendars can be programmed to generate reminder to prompt review of any revised documents, as needed

***Format***

- The QMS rep, or designate, creates internal QMS documents, or makes appropriate edits
- The format of the procedures shall cover the following:
    - the ‘who’, ‘what’ and ‘when’
    - related documentation
    - how documents are filed
    - purpose and reason
    - A QMS header including document name, document number, effective date of current revision, and version number.
    - A footer indicating “Internal Use Only”, “Uncontrolled Copy if Printed” and page number and total pages
    - Format of created internal documents shall include the document name, form number, effective date
    - Table of revisions and summary of revisions

- Document numbers are allocated by the QMS rep, considering the following layout as a guide. The format should be an alphanumeric code consisting of three segments (XX-OOOOO-####)
    - Segment 1 ("XX") indicates applicability of the procedure to the project
    - Segment 2 ("OOOOO") indicates type of document, using identifiers listed in table below
    - Segment 3 ("####") is a 3 or 4 digit numeric identifier with the first two digits referring to the applicable DWQMS element number.

| Segment 1 "XX" | System Owner | Segment 2 | Type | Segment 3 | Identifier |
|---|---|---|---|---|---|
| AW | All Veolia (previously American) Water Canada contract locations | ADMIN | Administrative | ### or #### | 3 or 4 digit identifier |
| | | CCP | Critical Control Point | ### | |

***Releasing***

- All internal QMS documents are electronically controlled with only the QMS rep or Administrative Assistant having electronic access to modify them
- QMS rep shall notify appropriate staff of updated documents to be released and will update electronic version
- These issuance of these updated documents are controlled by the QMS Rep
- Operations staff, or the QMS rep, has access to the revised Operational Plan on the Google Drive
- Printed versions of Internal QMS documents are considered 'uncontrolled'
- Electronic copies are available in applicable Google Drive folder
- All QMS documents are filed at the main work area for each contract location or other locations as designated by the QMS rep
- External documents of a legal nature, including DWWP, MDWL and other permits, may be controlled by the Owner, and copied to the main work location and the Project Manager
- Printed legislation and other governmental publications are uncontrolled. When referring to these documents, the QMS rep, or designate, shall refer to the online resources, rather than printed copies

***Electronic File Retention and Obsolete Copies***

- All files are stored on Google Drive
- Obsolete electronic documents and obsolete legislation may be stored in a separate file, archived or deleted
- Printed QMS documents that are obsolete shall be promptly removed from use by operations staff and disposed of

***Retention Time***

Documents are retained until newer (updated) versions are available

***Protection from Damage***

- Hard copies of documents are kept protected at the main work area.
- All electronic QMS documents reside in the applicable Google Drive folder

## Associated Documents

AW-ADMIN-510 Records Control

## Table of Revisions

| *Date (mm/dd/yyyy)* | Description of Revision |
|---|---|
| 03/04/2009 | Bullet #7 under Reviewing and Approving-changed the way a procedure is approved |
| 03/18/2009 | Added a note (Bullet #3) under 'Reviewing and Approving' |
| 05/22/2009 | Removed bullets referencing a chain from the QMS rep to the PM; they are the same person |
| 05/27/2009 | Under 'What' added SOPs to Work Instructions<br>Under 'What' removed 'Hazard Analysis' and added 'Risk Assessment', inserted Critical Control Point Procedures<br>Under 'What' added reference to Master List of Documents<br>Removed Equipment Manuals and O&M Manuals from Associated Documents |
| 01/26/2010 | Added "of any revised documents, as needed" to reference to electronic calendars under 'Reviewing/Approving"<br>Deleted bullet "how documents are filed' under 'Format'<br>Added bullet to define who is responsible for distributing revisions of controlled documents (Releasing section)<br>Added bullet defining who controls the release of updated documents (Releasing section) |
| 02/03/2010 | Removed reference to Administrative Assistant |
| 02/18/2010 | Under 'Releasing' removed reference to having printed copies on site<br>Added where electronic versions can be found<br>Removed 'stored in binders' from 'Protection from Damage'; referencing S: only |
| 03/09/2011 | Removed requirement of status and approver name in header |
| 01/12/2012 | Removed reference to C of A and added MDWL and DWWP |
| 04/15/2014 | Added a definition of Document |
| 09/10/2014 | Added Retention Time |
| 09/23/2015 | Removed references to Master List of Documents |
| 09/30/2015 | Removed references to Compliance Manager |
| 09/07/2018 | Updated table under Format<br>Updated document logo |
| 01/22/2019 | Updated how documents are released, how Electronic/Obsolete copies are handled and where documents are stored |

## Purpose

This procedure defines the mechanism for maintaining records generated from the Quality Management System (QMS).

## Definitions

“Record” - A record is a ‘snapshot’ of the conditions of the drinking water system.

## Procedure

### *Who*

- Records are filed as prescribed in QMS procedures

### *Filing of Records*

| Type of Record | Filing Location(s) | Responsible Person | Retention |
|---|---|---|---|
| Operator records (i.e. logbooks) | At water system and/or other location as appropriate | QMS Rep or Operations Personnel | 5 Years (as per O. Reg. 128/04) |
| QMS records (i.e. daily/monthly log sheets) | At water system and/or another location as appropriate | QMS Rep/Operations Personnel | At least 5 years |
| Government compliance (inspection) reports | At water system and/or another location as appropriate | Project Manager/Operations Personnel | All are retained |
| Operator Training records | At water system and/or another location as appropriate | Operators/Project Manager | 5 Years (as per O. Reg. 128/04) |
| QMS Audit results (Internal or third-party) | Electronically filed | QMS Rep or designate | At least 5 Years |
| Records of maintenance (i.e. work orders) | At water system and/or other location as appropriate | QMS Rep or Operations Personnel | At least 5 Years |
| Risk Assessments | Included in Operational Plan | QMS Rep | All are retained |
| Management Review meeting minutes | Electronically filed | QMS Rep or designate | 5 Years |
| Laboratory results (includes adverse results) | At water system or another location as | QMS Rep or Operations staff | 2 Years (as per O. Reg. 170/03) |

| | | | |
|---|---|---|---|
| | appropriate | | |
| Purchase Order/receipts | At water system and/or other location as appropriate | QMS Rep or Operations staff | At least 5 years |

*Though regulatory requirements are listed in the table above, it is recommended that records be retained at least six (6) years to cover two cycles of DWQMS accreditation by a registrar

***Special Requirements for Log Books***

- Retained as per legislative requirements

***Electronic Records***

- Electronic QMS records reside on the OA central network drive or in a designated area as required
- Electronic Maintenance records reside on the CMMS, if applicable
- Water quality records reside in an electronic data management system
- Electronic backup of the data management system is performed according to the vendor's internal data storage policy
- Electronic backup of the CMMS, if applicable, is performed according to the vendor's internal data storage policy

***SCADA or Continuous monitoring records***

- Continuous monitoring data is retained on SCADA computer
- Daily summary reports are generated for operators to review and these are stored in a designated area

***Hard Copy or Paper Records***

- All paper copies are properly stored (clean, dry, organized) in a designated area as outlined in the "filing of records" section of this procedure
- All written records must be legible and identifiable
- Records are identified by some form of a description (written or computer generated) that is included with the record

***Retrieval of Records***

- Anyone can make requests to the Operations staff or the QMS rep for the retrieval of records
- Operations staff, or QMS rep properly re-files all paper records retrieved

***Disposal of Records***

- Hard copies of records are disposed of by the QMS rep, or designate, as required
- Electronic records are deleted by QMS rep, or designate

## Associated Documents

CMMS user documents and service agreement
Electronic data management system user documents and service agreement
Ontario Regulation 128/04
Ontario Regulation 170/03

## Table of Revisions

| *Date (dd/mm/yyyy)* | Description of Revision |
|---|---|
| 10/03/2009 | Added '(Internal or third-party)' to QMS Audit results under 'Type of Record' in table |
| 27/05/2009 | Removed reference to Project Manager. Using QMS rep for consistency<br>Revised definition of 'Record'<br>Added Purchase Orders/receipts and Risk Assessments to list of records |
| 03/02/2010 | Reviewed; no changes made |
| 18/11/2010 | Removed reference to WaterTrax in two bullets under Electronic Records<br>Changed where SCADA data is retained; added Daily summary sheet bullet<br>Replaced 'QMS Rep' with Project Manager as person responsible for Government inspection reports<br>Changed how hard copies are disposed |
| 20/10/2011 | Under 'Hard Copy or Paper Records', identifiable is added to bullet #2<br>Also, a third bullet is added in this section explaining how records are identified |
| 15/04/2014 | Updated filing location from some records |
| 12/09/2014 | Added note under Table to indicate recommendation to keep documents for at least six years |
| 11/03/2015 | Removed references to Compliance Manager. Removed administrative assistant from Retrieval section |
| 21/09/2018 | Removed references to S drive<br>Removed reference to network backup under Electronic Records |

## Purpose

This procedure describes the DWQMS risk assessment process. By performing a risk assessment, hazards in the drinking-water system are identified, and the control measures to address those hazards are described. The critical process steps associated with the most significant hazards are identified, and control limits, monitoring, and response procedures are established to ensure deviations in those critical process steps are planned for. Conducting a risk assessment and keeping it updated is an excellent learning process, and helps staff be more aware of risk and hazards in the waterworks. **The risk assessment now includes the hazards included in the MECPs document titled Potential Hazardous Events for Municipal Residential Drinking Water Systems, dated Feb. 2017.**

## Scope

This procedure applies to the processes, hazards and hazardous events of which the Operating Authority has control.

## References

Drinking Water Quality Management Standard Elements 7 and 8

## Procedure

The risks must be assessed at least once every thirty-six months. The QMS representative and the operational staff, herein called 'the group', shall perform the Risk Assessment.

The information in the Risk Assessment table shall be reviewed at least once a year for validity and currency, by the QMS representative, prior to the annual management Review. This exercise shall also be completed when a significant change occurs in operations, such as a change in the type of process chemical or a change of equipment. When a new risk assessment is complete, it will replace the old assessment. The old assessment will be kept on-file.

The Risk Assessment table shall be used to record the information collected and decided upon in this procedure.

***Hazard Identification and Control Measures***

- Using process flow diagrams and process knowledge as a guide, the group shall discuss and review the basic waterworks projects, areas, process steps and sub-steps, within the scope of the Operating Authority responsibilities.
- The group shall review and modify as required the existing list of hazards/hazardous events, nature of hazard, potential effects, and make additions or edits as required.
- Special attention shall be given to areas within the process where changes have occurred since conducting the previous risk assessment exercise.
- The group shall also identify control measures in place, where they exist, for each hazard/hazardous event.
- The reliability and redundancy of equipment shall be considered during this exercise, especially when identifying control measures.
- All hazards shall be identified, whether they can be prevented within the scope of the Operating Authority responsibilities or not. For hazards that cannot be prevented with control measures, the inability to control shall be documented in the 'Control Measures' column and response procedures may be created under Emergency Management.

***Risk Assessment***

The group shall assign each hazard or hazardous event a numeric value ranging from 1 to 5 in three different categories: likelihood, severity, and detectability (see tables below).

LIKELIHOOD

| *Level* | *Descriptor* | *Example Description* |
|---|---|---|
| 5 | Almost certain | Is expected to occur in most circumstances - occurs more frequently than monthly |
| 4 | Likely | Will probably occur in most circumstances - occurs monthly to quarterly |
| 3 | Possible | Might occur at some time/the event should occur at some time - once or twice per year |
| 2 | Unlikely | Could occur at some time, but less than once per year |
| 1 | Rare | May occur only in exceptional circumstances |

SEVERITY

| *Level* | *Descriptor* | *Example Description* |
|---|---|---|
| 1 | Insignificant | Insignificant impact, little disruption to normal operation, low increase in normal operations costs |
| 2 | Minor | Minor impact for small proportion of population, some manageable operation disruption, some increase in operating costs |
| 3 | Moderate | Minor impact for larger proportion of population, significant modification to normal operation but manageable, operation costs increased, increased monitoring |
| 4 | Major | Major impact for small proportion of population, systems significantly compromised and abnormal operation if at all, high level of monitoring required |

| | | |
|---|---|---|
| 5 | Catastrophic | Major impact for large proportion of population, complete failure of essential systems |

DETECTABILITY

| *Level* | *Descriptor* | *Example Description* |
|---|---|---|
| 1 | High Detectability | automatic response AND alarm |
| 2 | Moderate Detectability | alarm/pager OR automatic response |
| 3 | Detectable | Visually detectable on operator's rounds; Regular maintenance would discover the problem |
| 4 | Poor Detectability | Visually detectable, but not inspected on a regular basis; Would not be detected before a problem was evident; Lab tests that are not done on a regular basis (e.g. quarterly) |
| 5 | Undetectable | Cannot detect |

***Determination of Critical Control Points***

The three assigned numbers for each event shall be summed to determine the overall risk value. The highest overall risk values are typically indicators of critical events, associated with a critical control point (or critical process step).

Based on a review of the overall risk values and the associated events, a threshold risk value shall be chosen such that all process steps associated with risk values which are equivalent to or greater than the threshold value shall be considered CCPs. See table below for the selected threshold values:

| *Level of Likelihood + Severity+ Detectability* | *Risk Category* |
|---|---|
| 3 – 5 | Low |
| 6 - 8 | Moderate |
| 9 - 15 | High – CCP |

- In the case where a process step having a higher calculated risk value is not determined by the group to be critical, an explanation of the reasoning for this distinction shall be documented in the table.
- However, areas that cannot be preventively controlled should not be considered CCPs, regardless of their score

- An explanation of the reasoning shall also be documented when the group deems a process step associated with a lower calculated risk as critical.
- Note that inadequate primary disinfection is always critically hazardous to water quality, and shall always be associated with CCPs
- CCPs require the establishment of controlled conditions, including: critical control limits, monitoring, responses, reporting and recording procedures.

***Critical Control Limits***

- Critical limits shall be established for indicators that a critical control point is **outside of normal limits**. The limits provide staff with a range of acceptable values within which no corrective actions are required. Critical limits define the point at which staff must take action to prevent escalation of the critical event or to correct the critical event.
- Critical limits may be determined based on regulatory requirements, process monitoring capabilities, off-hours response time, and historical plant performance. Process alarms (if available) are normally set at, or near critical limits. Responses to breached critical limits are detailed in the Operations Manual and/or in the critical control procedure
- Critical control limits shall be documented in the associated CCP monitoring and/or response procedures.

***Critical Control Monitoring and Response Procedures***

- A procedure or series of procedures shall be established and implemented for monitoring the indicators against the critical control limits and for response if the critical control limits are exceeded.
- These procedures shall include or refer to reporting and recording instructions, related to the response actions.
- These procedures shall be referenced in the Risk Assessment table.

## Associated Documents

Risk Assessments

## Table of Revisions

| *Date (dd/mm/yyyy)* | Description of Revision |
|---|---|
| 27/02/2009 | Changed ‘Risk Assessment Consolidated’ to ‘Risk Assessment’ |
| 27/05/2009 | Edited group description under Procedure<br>Added bullet regarding uncontrollable hazards not being CCPs<br>Removed turbidity and pressure from mandatory CCPs |
| 18/11/2010 | Under ‘Procedure’, changed ‘annually’ to ‘once a year’<br>Under ‘Critical Control Liimits’, added ‘and/or in the CCP to bullet #2 |
| 08/03/2012 | Revised descriptions for Levels 2 & 3 under Likelihood<br>Revised footer |
| 14/09/2017 | Revised statement on how often risks are to be assessed |
| 21/09/2018 | New Veolia logo inserted in Header |

| | |
|---|---|
| 22/01/2019 | Updated bullet #1 under Critical Control Limits |
| 19/12/2019 | Included reference to MECP document regarding potential hazardous events |

## Purpose

This procedure describes the structure of key personnel within the QMS, and their roles, responsibilities, and authorities. This procedure clearly shows how information and responsibility is structured in the QMS. This procedure is critical in defining paths for communicating QMS information and assigning responsibilities.

## References

Drinking Water Quality Management Standard Element 9

## Procedure

| Role | Responsibilities | Authorities |
|---|---|---|
| Owner (can include Public Works Manager, Council, Mayor) | • Supply clean drinking water to the public<br>• Ensure Water Systems are properly operated<br>• Prescribe requirements and monitor the operation of the Water Systems, as per the Contract between the Operating Authority and the Owner<br>• Represent the Water Systems to the public<br>• Provide resources or infrastructure as necessary<br>• Endorsing the Operational Plan for the Drinking Water Systems. | • Provide for management or delegated management of utility assets<br>• Review, revise and approve proposed and existing bylaws, expenditures, user fees, and taxation rates<br>• Provide / review / approve administrative policy direction<br>• To prescribe requirements and monitor operations, as per the operating Contract<br>• To provide resources as per the operating Contract<br>• To provide resources to ensure the proper implementation and continuance of the QMS, including access to personnel, access to equipment, and financial resources |
| Operating Authority (OA) | • Operate the Drinking Water Systems<br>• Perform the operations as per the Contract between the OA and the Owner | • To perform its required operative duties as per the Operating Contract<br>• To recommend |

| | | |
|---|---|---|
| | • Obtain resources or infrastructure as necessary<br>• Responsible for endorsing the QMS for the Drinking Water Systems<br>• Undertaking the development, maintenance and Management Review of the QMS. | improvements or changes, as per the operating Contract<br>• To implement improvements or changes, as per the operating Contract<br>• To provide resources as per the operating Contract |
| OA – VP-Operations (Top Management) | • Participate in Management Reviews of the QMS<br>• Respond to Owners requests as required<br>• Communicating with the Owner, the public, regulatory authorities on behalf of the OA<br>• Assigning responsibility of QMS rep | • To recommend improvements or changes, as per the operating Contract<br>• To provide resources as per the operating Contract |
| OA – Project Manager/**QMS representative (reports to VP-Operations/Top Management**) | • Responsibilities of QMS rep as per Element 4 of Operational Plan<br>• Establish, implement and maintain the QMS in accordance with the Drinking Water Quality Management Standard<br>• Communicate the status, progress and need for improvement of the QMS to Top Management<br>• Read and act upon non-conformances<br>• Arrange, chair and provide necessary information to Top Management for the Management Review<br>• Report the performance of the QMS to Top Management<br>• Respond to Owner's requests as required<br>• Represent the OA to internal or external parties with regards to the QMS including any external environmental communications<br>• Review/approve relevant QMS documents, applications, etc. and ensure that the most current versions of documents required by the QMS are being used at all times<br>• Ensure that personnel are aware of all current regulatory requirements that pertain to their duties with the operation of the drinking water system<br>• Promote awareness and effectiveness of the QMS throughout the operating authority<br>• Identify the need for resources or infrastructure | • To perform all defined responsibilities under the QMS<br>• May assign a designate to perform any of the listed responsibilities |

| | | |
|---|---|---|
| | • Manage laboratory results and sampling programs<br>• May assign a designate to complete duties in his/her absence | |
| OA – Operations personnel (report to Project Manager) | • Carry out applicable QMS tasks<br>• Plan and manage operations, and perform maintenance tasks for the water systems<br>• Report and act upon non-conformances<br>• Follow procedures, complete forms<br>• File records<br>• Laboratory sampling<br>• Attend training<br>• Keep records of external complaints and communicate them to Owner, if required<br>• Regularly communicate to the QMS Representative<br>• Carry out required operations and maintenance activities<br>• Operators must maintain licenses | • To perform the required QMS duties |

## Associated Documents

Operating contract between the Owner and Operating Authority

## Table of Revisions

| *Date (mm/dd/yy)* | Description of Revision |
|---|---|
| 02/03/2010 | Added 'assigning responsibility of QMS rep' to Regional Director responsibilities<br>Added examples to Owner reps. |
| 03/09/2011 | Removed AW-ADMIN-002 from Associated Documents |
| 08/19/2013 | Updated how external complaints are received by Operations personnel |
| 09/15/2014 | Removed reference to Projects Director; changed reference to Compliance Mgr to Compliance Mgr OR QMS Rep |
| 11/03/2015 | Removed references to Compliance Manager and revised QMS Rep responsibilities |
| 09/21/2018 | Updated logo; changed TM reference to VP-Operations |
| 05/24/2019 | Combined QMS/Project manager roles |

## Purpose

The table below lists the minimum levels of competencies required of trained **Veolia Water Canada** staff whose performance may have a direct impact on drinking water quality

## References

Drinking Water Quality Management Standard Elements 10

According to O. Reg. 128/04, all operators (not including the ORO) are required to possess, at a minimum, a valid OIT certificate in Water Treatment and Water Distribution.
The ORO must hold, at a minimum, a certificate matching the class of the facility.

***Operator Training Hours***

- For an operator to maintain his/her license, a certain number of training hours are needed. This is dependant on the class of facility. Refer to MOE Guideline 4.5
- Training can be provided by the OA or a qualified third-party contractor
- In addition to the regulatory requirements to maintain licensing, all water system operations staff must complete the following training within a reasonable period of time within beginning employment, unless scheduling does not permit (more for remote locations):

| Role | Competency Expectations |
|---|---|
| Overall Responsible Operator | Minimum licensing to the level of the system classification<br>Understanding of DWQMS |
| Operator in Charge | Minimum Class I Water Distribution & Class I Water Treatment<br>Understanding of DWQMS |
| Operator | Minimum OIT in Water Distribution & Water Treatment<br>Understanding of role within DWQMS |

***Satisfying Competencies***

- Operator competency is initially assessed through the Operating Authority Human Resources hiring policies and procedures
- All full time employees participate in an annual performance and development review process to promote the expectations of the company
- Records of an interim and final performance review are maintained by the Operating Authority

  Project manager is responsible for maintaining competencies listing
- Operator training is maintained electronically

- Both on the job training and CEU training is included as per O. Reg. 128/04
- For new staff, competency is monitored by the lead operator or ORO
- On-the-Job training, including annual DWQMS review for update and understanding, is provided by Veolia Water Canada or other contractors
- Relevant on-the-job training sessions are determined by project manager, or designate
- Resources are provided by Veolia Water Canada for external training
- It is the responsibility of both the operator and Veolia Water Canada to ensure competency expectations are met
- If an employee is hired without the full competency requirements, they are not assigned full duties (as a condition of employment), and then regular internal / external training is conducted to acquire the competency requirements

***Other Expectations***

- Throughout the hiring process and subsequent employment of staff, other qualities are also desirable, including, but not limited to:
    - Ability to follow instructions/procedures
    - Problem solving
    - Ability to work independently or as part of a team
    - Managing time and schedule
    - Respond to customer needs
    - Supporting company goals

***Relevance of Duties***

- New employees are introduced to the DWQMS during on-the-job training
- Annual review of QMS reinforces relevance of operator duties
- The DWQMS policy is posted at a central operations location

***Training Records***

- Accurate training records are the responsibility of the operator
- Training records are maintained at the main work area

***Other***

Other employees (i.e. QMS Rep., internal auditor, Project Manager) are made aware of the relevance of their duties via verbal and/or electronic (email) updates

## Associated Documents

O. Reg. 128/04 Certification of Drinking Water System Operators and Water Quality Analysts
MOE Guideline 4.5 O. Reg. 128/04 Phase-In of New Training Requirements

## Table of Revisions

| *Date (dd/mm/yyyy)* | Description of Revision |
|---|---|
| 10/03/2009 | Added bullets under Satisfying Competencies and who can provide training under |

| | |
|---|---|
| | Operator Training Hours |
| 22/05/2009 | Removed reference to *www.oetc.ca* in Associated Documents |
| 03/02/2010 | Added reference to other OA employees in 'Other' |
| 22/11/2010 | Under 'Satisfying Competencies' bullet added regarding initial operator competency<br>Also two bullets regarding Competency form added |
| 19/12/2011 | Removed reference to Competency Form<br>Changed satisfying competency for new employees |
| 09/11/2012 | Added 'Other Expectations'<br>Added reference to company performance review process |
| 27/11/2015 | Removed reference to training booklet in Relevance of Duties |
| 06/04/2016 | Removed reference to Orientation booklet. Added item about annual review of QMS and relevance of duties |
| 21/09/2018 | Updated logo in header and changed AWCC to Veolia Water Canada |
| 22/01/2019 | Removed reference to AWCC in Satisfying Competencies |

## A. Purpose

This procedure describes how to ensure sufficient personnel meeting the identified competencies are available for duties that directly affect drinking water quality

## B. Procedure

Veolia Water Canada employs licensed operators, all of whom are required to hold certificates for water treatment and/or water distribution, as per AW-ADMIN-1000.

The operating authority provides sufficient daily coverage (8 hours of on-site coverage), as per each Operations and Maintenance contract. Off-hours on-call coverage is also provided 24 hours a day.

***On-Call Coverage***

- Off hours emergencies are addressed by the designated on-call operator
- The on-call schedule is typically set by the operations staff
- The on-call schedule is communicated verbally or posted at a central location
- Typical on-call emergencies can be handled by the sole on-call operator

Water systems are monitored by an alarm system, which notifies the operator when alarm conditions are encountered. Each alarm must be acknowledged by the duty operator otherwise the dialer will alternate between the two operators with listed contact numbers. This will continue until the alarm has been acknowledged. The on-call operator will respond to alarm conditions, within a time period set forth by the Contract, to investigate and rectify any outstanding issues. Conservative alarm set points plus multiple monitoring and treatment barriers are in place to reduce risk to public health.

If circumstances arise where backup staff is required, they can be contacted by the duty operator. Contact information for additional back-up is in the Emergency Contact List.

## C. Associated Documents

AW-ADMIN-1000 Competencies
Emergency Contact List
Operations and Maintenance Contracts between Veolia and Owner

## D. Table of Revisions

| ***Date (dd/mm/yr)*** | ***Description of Revision*** |
|---|---|
| 03/01/2010 | Initial issue of document |
| 10/04/2012 | Updated method of contacting back up |

| | |
|---|---|
| 03/04/2014 | Changed who sets the on-call schedule |
| 09/23/2015 | Removed specific working hours |
| 10/05/2018 | changed OA references from AW to Veolia. Changed logo in header |

## Purpose

This procedure describes the communication of QMS issues by Top Management amongst Operating Authority staff, the water system Owners, Suppliers and the public.

## References

Drinking Water Quality Management Standard Elements 12

## Procedure

***Who***

- For both internal and external communication, the QMS Representative and Top Management serve as the main pipeline for QMS communication
- Top management may designate communication responsibilities to the QMS rep via an appointment letter
- Internal QMS communication mainly occurs between the QMS Rep and OA operations staff and Owner's designate
- External QMS communication may occur between the Owner's staff, the OA head office, other water treatment systems, suppliers, lawyers, consultants, regulators, DWQMS accreditation agencies, consumers, community groups, neighbours, and other interested parties.

***Communication with the Owner:***

- Management review meeting results (as per AW-ADMIN-2000, Management Review Procedure)
- Regular administration meetings, including maintenance and operations reports submitted as per operations contract between Owner and OA
- Informal meetings (direct telephone contact, e-mail, site visits)

***Communication with Personnel:***

- Postings in the central work location at the water system, where applicable
- Informal meetings (informal discussions, e-mail, memos, phone contact)
- QMS reviews

***Communication with Suppliers (of Essential Supplies and Services):***

- Written and verbal commitments related to purchasing (purchase orders)

- Verbally communicated to suppliers directly from Operators
- Essential Supplier/Contractor letter of notification

***Communication with Consumers:***

- Accept phone inquiries, complaints, and concerns from the public, typically through Owner
- Annual compliance reports may be posted on Owner's website
- Notification of water system emergencies and alerts (issued by Owner, or designate)
- Press releases as required (issued by the Owner)
- All public documents are made available to the public upon request to the Owner
- Public information posted as required at municipally-owned buildings

## Associated Documents

- Contract between Operating Authority and Owner
- Management Review (AW-ADMIN-2000)
- Operator's Log Book
- Essential Supplier/Contractor notification letter

## Table of Revisions

| *Date* | Description of Revision |
|---|---|
| Feb. 3, 2010 | Added 'results' to first bullet under communication with Owner |
| Nov. 17, 2010 | Removed 'Quarterly safety meetings' from Communication with Personnel<br>Removed 'Review of Operator logbooks' from Communication with Personnel<br>Added 'QMS Reviews' to Communication with Personnel |
| Jan. 12, 2012 | Updated Purpose to indicate the communication starts with Top Management<br>Updated the 'Who' to allow for designation of communication to QMS Rep<br>Removed 'Communication with Top Management' |
| Sept. 21, 2018 | Updated logo in header |
| Mar. 20, 2021 | Updated heading for Communication with Suppliers to include "Essential Supplies and Services" |

## A. Purpose

This procedure identifies the supplies and services essential for the delivery of safe drinking water.

## B. Procedure

- Suppliers for water system equipment and chemicals deal in NSF/ANSI supplies only
- Letters are sent, on a three year basis, to identified primary suppliers notifying/reminding them that **their supplies and/or services** are considered 'essential' under the QMS
- If contingency suppliers are to be used, they are forwarded a letter as well
- Agreements with Suppliers/Service providers are of an open purchase order agreement
- Operations staff, through experience, makes the orders when required.
- Upon receipt, staff inspects the delivery and compares to packing slip to ensure accuracy. Packing slips are kept on-file
- Procurement is ensured by having backup (contingency) suppliers and, where applicable, ordering supplies in advance of need

## C. References

Drinking Water Quality Management Standard Elements #13

| Supply or Service | Primary Supplier | Contingency Supplier |
|---|---|---|
| Accredited Laboratory Services | Caduceon Environmental Laboratories<br>2378 Holly Lane<br>Ottawa, Ontario<br>K1V 7P1<br>613-526-0123 | SGS Canada Inc.<br>657 Consortium Court<br>London, ON<br>N6E 2S8<br>519-672-4500 |
| Disinfectant (Sodium hypochlorite) | Brenntag Canada Inc<br>43 Jutland Road<br>Etobicoke, Ontario<br>M8Z 2G6<br>Tel: 514-636-9230 | Anchem Sales<br>120 Stronach Cres<br>London, ON<br>N5V 3A1<br>519-451-1614 |
| Soda Ash | Brenntag Canada Inc<br>43 Jutland Road<br>Etobicoke, Ontario<br>M8Z 2G6<br>Tel: 514-636-9230 | Cleartech Toronto<br>355 Admiral Blvd Unit 1<br>Mississauga, ON<br>L5T 2N1 |
| Primary Coagulant | Kemira Water Solutions Canada Inc.<br>P.O. Box 11800<br>Succursale Centre-Ville | General Chemical Performance Products (alum based chemical)<br>58 Blair Malcolm Rd |

| | | |
|---|---|---|
| | Montreal, Quebec<br>H3C 0E5 | Dalhousie Junction, NB<br>E3N 5X3 |
| Hydrofluorosilicic Acid (HFS) | Brenntag Canada Inc<br>43 Jutland Road<br>Etobicoke, Ontario<br>M8Z 2G6<br>Tel: 514-636-9230 | Cleartech Toronto<br>355 Admiral Blvd Unit 1<br>Mississauga, ON<br>L5T 2N1 |
| Polymer(Magnafloc LT27AG) | Northland Chemical Inc<br>7480 Bath Road<br>Mississauga, ON<br>L4T 1L2<br>(T)905-676-1777<br>(F)905-676-0582 | BASF Canada Inc<br>100 Milverton Dr<br>Mississauga, ON L5R 4H1<br>1-289-360-1300 |
| Flowmeter / online analyzer Calibrations | SCG Flowmetrix (purchased Metcon)<br>15 Connie Cres<br>Unit 5<br>Concord, ON<br>L4K 1L3<br>905-738-2355 | Capital Controls<br>10-830 Industrial Ave.<br>Ottawa, ON<br>K1G 4B8<br>613-248-1999 |
| Portable analyzer calibrations | Hach Sales & Service Canada Ltd<br>1140 Marc-Aurele-Fortin<br>Terrebonne, QC<br>J6Y 2E1<br>450-435-5091 | Other Hach locations |
| Calibration standards, buffers, reagents | Cleartech Toronto<br>355 Admiral Blvd Unit 1<br>Mississauga, ON<br>L5T 2N1 | Hach Sales & Service Canada Ltd<br>1140 Marc-Aurele-Fortin<br>Terrebonne, QC<br>J6Y 2E1<br>450-435-5091 |
| SCADA technician | Capital Controls<br>10-830 Industrial Ave.<br>Ottawa, ON<br>K1G 4B8<br>613-248-1999 | Stantec<br>1331 Clyde Avenue<br>Ottawa, ON K2C 3G4 |

## D. Table of Revisions

| ***Date (mm/dd/yyyy)*** | **Description of Revision** |
|---|---|
| 05/17/2011 | Added 'Procedure' section<br>Added contingency supplier for disinfectant<br>Added contact info for Instrument Calibrations, and backup for Soda Ash |
| 06/10/2011 | Changed Polymer supplier |
| 02/07/2012 | Changed disinfectant supplier |
| 03/29/2012 | Updated soda ash suppliers, backup suppliers<br>Modified procedure footer<br>Added item about ensuring procurement<br>Added portable analyzers |
| 04/03/2014 | Removed "at the water system" for location of packing slips<br>Added backup supplier for alum-based product |
| 09/12/2014 | Removed 'verbal' from Agreements with Suppliers/Service providers |
| 09/23/2015 | Changed backup supplier for Flowmeter/analyzer calibrations |

| | |
|---|---|
| 04/06/2016 | Updated backup supplier for sodium hypochlorite |
| 04/13/2016 | Changed backup Lab services provider |
| 05/01/2017 | Updated Northland contact information |
| 09/19/2017 | Added SCADA contacts to list |
| 09/20/2017 | Updated backup information for Polymer |
| 09/27/2017 | Updated Contingency Supplier for Lab Services |
| 10/05/2018 | updated header with Veolia logo |
| 01/29/2019 | Removed reference to PAS-8 and replaced with generic “Polymer” |
| 04/13/2020 | Updated Disinfectant, Soda Ash, coagulant, HFS Acid, flowmeters |
| 02/05/2021 | Updated Lab Services information |
| 03/30/2021 | Revised bullet #2 in Section B to that the supplies and services are essential, not the supplier itself<br>Switched primary and contingency suppliers |

## A. Purpose

This procedure defines the process used by **Veolia Water Canada Inc**. to review the adequacy of the infrastructure and resources necessary to operate and maintain the drinking water system safely and effectively. This procedure ensures periodic evaluation of the condition and capacity of infrastructure components. The results of the evaluation are used to prioritize future resource allocation.
This procedure is applicable to all **Veolia Water Canad**a infrastructure components that fall under the scope of the QMS

## B. References

Drinking Water Quality Management Standard Element #14

## C. Procedure

- The need for infrastructure will be communicated to the Owner on an as-needed basis, but at least once every calendar year
- Risk assessment outcomes must be considered when communicating infrastructure needs
- Communication methods can include verbal, e-mail and system summary reports, usually between the Lead Operator and the Owner
- Infrastructure review items are included in quarterly operations reports from the Operating Authority
- Owner and OA staff shall consider previous MECP Compliance Inspection Reports, flow data trends, water quality reports and maintenance records to determine priority needs

## D. Determining Priorities

- The Owner maintains plans to determine how the area will grow, both short term and long term, and where they believe infrastructure and resources will be necessary. These plans are development-driven
- MECP Compliance reports will often include infrastructure items (i.e. watermains in the distribution system) and will sometimes include recommendations
- Areas of concern will also be recognized based on past issues (i.e. watermain breaks)
- Based on all of these items, priorities can be set for the provision of resources for infrastructure

## E. Associated Documents

Infrastructure Review Reports
MECP Compliance Inspection Reports

## F. Table of Revisions

| Date (dd/mm/yyyy) | Description of Revision |
|---|---|
| 25/03/2011 | Revised entire report |
| 10/04/2012 | Updated procedure section to include quarterly reports to client |
| 17/09/2017 | First bullet under Procedure: added at least one communication per calendar year<br>Added the need to consider risk assessment outcomes when communicating infrastructure needs |
| 15/10/2018 | changed header logo to Veolia and changed AW Canada references to Veolia |
| 29/01/2019 | Changed MOE to MECP (Ministry of the Environment, Conservation and Parks) |

## A. Purpose

This procedure describes the sampling schedule and analytical program used for monitoring the water quality for the Chalk River drinking water system. It outlines the responsibilities of operators and outside laboratories in regards to analyses performed and reporting duties.

Regular and strict adherence to a schedule is required to meet legislated and regulatory requirements and to ensure all operators are aware of their responsibilities regarding the required timing of sampling.

All sampling and analysis is required to comply with Ontario Regulation 170/03, or to monitor additional parameters that affect water quality or aid in process control.

## B. References

Drinking Water Quality Management Standard Elements 16

## C. Responsibility

Only operators with valid Drinking Water Operator certificates are permitted to sample drinking water and conduct laboratory analyses. The operator on duty performs all drinking water sampling, as well as the daily analyses. All other analyses must be performed by the staff of an accredited laboratory.

## D. Procedure

Veolia Water Canada Inc. uses a sampling program for all its water systems, based on legislative requirements. Sample schedules are available in each water system Operations and Maintenance Manual. Operators sample according to the AWWA Standards for Disinfecting Drinking Water Mains throughout any maintenance project undertaken within this system.

Free chlorine residual results are acquired from in-house analysis (using a portable chlorine analyzer) conducted by the operator. Analysis for regulatory biological and chemical parameters is conducted by an accredited laboratory, though collection and shipment of the samples are the responsibility of the operator. In-house results are entered into monthly spreadsheets by the operator and kept on-file. Bacteriological and chemical results from the accredited laboratory are provided in electronic format. All results are uploaded by qualified laboratory staff to the HachWIMS database where pertinent operations staff can review, if required

***Continuous Monitoring***

- Raw water turbidity, treated water turbidity, raw/treated pH, 'adjusted' water pH, treated water fluoride and treated water free chlorine residual are monitored continuously with online analyzers
- The operator on duty shall verify online treated water chlorine residual by comparing to bench-top results
- Chlorine and turbidity analyzers shall be adjusted when necessary per manufacturer's instructions (refer to O&M manual)
- A SCADA system is used to continuously log process information that is reviewed as per O. Reg. 170/03

***Routine Sampling and Analysis***

- Treated free chlorine residual shall be conducted weekly at the plant by the operators on duty to confirm analyzer readings, as well as to check additional parameters that aid in water quality monitoring and process control. The treated water sample is collected from a point after chlorine injection
- Daily laboratory tests shall be performed by following lab equipment manufacturer instructions, available in the laboratory
- Data shall be recorded on monthly log sheets, and filed at the plant. Portions of this data is also uploaded to the HachWIMS database
- Regulatory distribution samples are collected and tested for free chlorine residual. The sample can be taken from various points in the distribution system. The sampling location is identified on the monthly log sheets
- If there is a problem with an internal result, it is recorded and re-tested. If the problem is confirmed, and it is below or above a regulatory limit, it must be reported as per the Contingency Plan

***Weekly Sampling and Analysis***

- Weekly bacteriological analysis is conducted on raw water, treated water, and from various points in the distribution system as per O. Reg. 170/03. Each sample is tested for *Escherichia coli*, total coliforms, and the general bacteria population expressed as background colony counts and/or heterotrophic plate count (HPC). A minimum of 25% of the monthly distribution samples must be tested for HPC.
- Distribution samples shall be collected from any of several points (refer to list in HachWIMS or identified in O&M manual) throughout the system.
- Bacteriological samples shall be delivered in designated coolers to the accredited laboratory within the prescribed hold time
- A Chain of Custody form, including the sample details and the free chlorine residual of the samples, shall be completed and submitted to the laboratory with the samples. A copy of this form stays with the operator and is filed at the plant, or at a central location.

***Monthly Sampling and Analysis***

- **pH and alkalinity on treated water as per the newest MDWL**

***Quarterly Sampling and Analysis***

- Every three months, drinking water from the distribution system shall be tested for Trihalomethanes (THMs) and Haloacetic Acids (HAA). THM samples must be collected nearest to the furthest point in the distribution system as possible, however HAA samples should be collected from a location closer to point of entry. Nitrates/Nitrites samples are collected from the treated water tap. Samples are sent to accredited laboratory for analysis
- Other sampling for any additional internal or external testing shall be performed as per the system Municipal Drinking Water License (MDWL)

***Lead Sampling***

- Sampling and testing for lead shall be performed and documented as per the regulatory requirements (Schedule 15.1 of O. Reg. 170/03).

***Annual Sampling and Analysis***

- Samples are collected every 12 months as per Schedule 13 of O. Reg. 170/03 and analyzed for inorganics (Schedule 24) and organics (Schedule 23). Samples to be analyzed shall be collected from the treated water tap.
- annual samples also require analysis for MCPA (as of Jan. 1, 2017)
- There may be other sampling required as per individual Certificates of Approval

***Sampling and Analysis required on an Infrequent Basis (5 years)***

- Treated water collected from the treated water tap must be analyzed for sodium and fluoride as per Schedule 13-8 and 13-9 of O. Reg. 170/03

***Upstream Sampling***

No upstream sampling, testing or monitoring is required for these systems.

***Delivery of Samples***

Samples are taken by operations staff to a local depot to be picked up by a delivery company. Staff is notified by depot if samples are not picked up on the day they are dropped off. Lab also sends confirmation to Operating Authority staff when samples are received.

***Adverse Results***

If the accredited laboratory discovers adverse quality (refer to O. Reg. 169/03), they are obligated to notify as per Schedule 16-6(3) of O. Reg. 170/03. Operations staff is to follow the steps in the Contingency plan for Adverse Water Quality notification

***Reporting Results***

Lab reports are issued to site staff and the project manager.

All yearly analytical results are summarized and discussed in the Annual Reports, which is provided to the owner and made available to the public on the Municipality website, or upon request.

## E. Associated Documents

O. Reg. 170/03
Certificates of Approval
O. Reg. 169/03
Contingency Plans
Operations and Maintenance Manuals

## F. Table of Revisions

| *Date (mm/dd/yyyy)* | Description of Revision |
|---|---|
| 03/25/2011 | Initial issue of document. Previously AW-ADMIN-1600 was being used |
| 03/29/2012 | Updated Continuous Monitoring, Routine Sampling and Analysis<br>Updated HPC in weekly |
| 04/03/2014 | Updated sample collection section under Process<br>Replaced reference to C of A with MDWL in Quarterly Sampling section |
| 09/12/2014 | Added Delivery of Samples section |
| 03/31/2017 | Added reference to HAA and MCPA sampling<br>Added lab confirmation to Delivery of Samples section |
| 10/15/2018 | changed header logo to Veolia and changed AW Canada references to Veolia<br>Updated system reference at the end of paragraph 1 in Section D |
| 01/29/2019 | Updated sampling locations for THM/HAAs |
| 03/31/2021 | Added pH and alkalinity testing under Monthly sampling |

## A. Purpose

This procedure describes the method used by **Veolia Water Canada Inc**. to ensure that all measurement and recording equipment is effectively calibrated and maintained. Accuracy of this equipment is essential to providing quality drinking water to the consumer with confidence that the characteristics of the water meet or exceed legislated requirements and internal targets set forth by **Veolia Canada**.

## B. References

Drinking Water Quality Management Standard Elements 17

## C. Procedure

Operations staff shall ensure that all calibration and maintenance for all equipment is performed at the required frequency.

This procedure is applicable to the following types of equipment in use at the Chalk River facilities:

- Continuous chlorine residual analyzers
- Continuous turbidimeters
- Portable colorimeters
- Portable turbidimeters
- Flow meters
- pH meters

- Any standards required to calibrate/maintain the above equipment are also required to be kept current (i.e. not allowed to reach expiry date)
- Items to be calibrated are identified in the JobCal CMMS database. Who performs the work and the frequency of calibration is also listed. When the work is due to be done, an electronic work order will be created within the database. When the work is complete, an operator will close out the work order to show it has been completed. Depending on the frequency, another work order will be generated when the work is required again.
- A qualified staff member or contractor will ensure the proper calibration of the equipment (refer to Element 13: Essential Supplies and Services)
- The frequency of calibration shall be at least that which is required by O. Reg. 170/03, or according to manufacturer's recommendations, whichever is more often.
- All calibration and maintenance shall be performed according to manufacturer's instructions

- All third-party flow meter calibration reports shall be filed in a designated area

## D. Associated Documents

O. Reg. 170/03
Equipment O&M manuals
Calibration Reports

## E. Table of Revisions

| Date (mm/dd/yyyy) | Description of Revision |
|---|---|
| 03/01/2010 | Initial Issue of Document |
| 03/25/2011 | Added information regarding JobCal<br>Removed Calibrations List from Associated Documents |
| 03/29/2012 | Updated equipment list<br>Added note about calibration standards |
| 08/30/2013 | Removed level sensors from list of equipment |
| 10/15/2018 | changed header logo to Veolia and changed AW Canada references to Veolia |

## A. Purpose

This procedure describes how Veolia Water Canada Inc. maintains a state of emergency preparedness for the Chalk River drinking water system

## B. References

Drinking Water Quality Management Standard Element #18

## C. Procedure

A list of potential emergency situations or service interruptions are provided in the Chalk River DWS Contingency Plan

**Emergency Response and Recovery**

- Operations staff provide first response to an emergency, though Owner staff may do so as well
- Contingency Plan provides detail as to what OA responsibilities are (i.e. response)
- Overall response is carried out by OA and other public works employees, at the direction of OA staff
- OA will notify the Chief Administrative Officer, or designate, of the emergency within a reasonable period of time (this will depend on the emergency)
- Communications with the public is directed through Owner staff
- Owner staff will inform council and water committee members at the appropriate time depending on the scope and magnitude of the emergency
- Details to assess and address the emergency can be found in the Contingency Plan
- **Propane generators at Corry Lake and water tower plus natural gas generator at the WTP cycle automatically on a weekly basis.**
- **Gensets are run on full load monthly to check for proper operation. Details are kept in the CMMS**

**Emergency Contacts**

- A list of emergency contacts are available at each facility in the Contingency Plan and in Appendix E
- The operations staff, along with the QMS rep, will keep this list up to date

**Emergency Response Training and Testing**

- Contingency plans are reviewed at least annually to ensure they are complete and up-to-date
- During the contingency plan review, a desktop review (testing) is conducted, going through each response procedure step by step, to ensure the response to each emergency is adequate
- At least annually, a written test is issued to the operators regarding various emergency scenarios
- Operators response to the emergency is based on experience, which includes on-the-job training
- Operator response to 'real-life' emergency situations (i.e. low chlorine alarm) partly meets testing requirement
- If any procedural changes are required as a result of any emergency response, it is the OA's responsibility to document the changes
- Emergency events are recorded in the Operators log book

## D. Associated Documents

Contingency Plan
Operators Log book

## E. Table of Revisions

| ***Date (mm/dd/yyyy)*** | ***Description of Revision*** |
|---|---|
| 03/01/2010 | Initial issue of document |
| 03/29/2012 | Updated Emergency Response and Recovery<br>Added items about annual test and desktop review. Removed info about power loss testing |
| 29/01/2013 | Changed 'Public Works Manager' to Owner Staff<br>Added more detail to contingency plan review to meet testing requirement<br>Added bullet re: real-life situations<br>Included addition of Emergency contact list to Appendix E |
| 04/06/2016 | Revised Conditions Covered list |
| 03/31/2017 | Updated reference to Contingency Plan under Procedure |
| 10/15/2018 | Header logo updated to Veolia and changed references from AW Canada to Veolia. Specified CR DWS in Section A |
| 01/24/2020 | Included reference to the two natural gas gensets |

## Purpose

This procedure describes the process used by Veolia Water Canada ("Veolia") to conduct internal audits of the Quality Management System (QMS). Internal audits are conducted to evaluate conformity of the QMS with the requirements of the Ministry of the Environment's Drinking Water Quality Management Standard.

## References

Drinking Water Quality Management Standard Element 19

## Procedure

### *Responsibilities*

- The QMS Representative shall manage the overall performance of internal QMS audits,
- Performance of audits may be subcontracted to qualified external auditor(s), or a qualified auditor from within the company
- The Lead auditor shall prepare an audit plan and report and manage the audit

### *Audit Schedule and Frequency*

- QMS audits (all elements audited) are performed at least once every calendar year
- Partial audits (only some elements) can be conducted as long as all elements are audited in every calendar year
- Revisions to the audit schedule may be based on the results of prior audits
- Audit frequency will be established on a priority basis, taking into account previous audit results and the relative importance of the area or department, and will not be less that once per year for each location
- Audit schedule is maintained by the QMS Rep or designate

### *Auditors*

- The QMS Representative shall arrange for an auditor or an audit team
- The team will consist of a Lead Auditor, and may consist of additional auditors
- An audit team may be formed whose membership is outside the day to day operational staff for each facility
- This independence will be documented by indicating on the audit report or other audit record the organization to which the auditors belong

Audit team may consist of the person(s) with the following qualifications:

- Veolia employees who have completed internal audit training,

- Anyone who has completed internal auditor training or, at the very least, have a background in Quality Management Systems
- Consultants with demonstrated experience in internal auditing of QMS

***Audit Plan***

- The audit plan may include scope, criteria, schedule, auditors, and a description of methodology
- Audit scope and criteria will be established prior to each audit
- The audit criteria for QMS internal audits is the Drinking Water Quality Management Standard
- The audit plan shall be submitted to the Project Manger prior to the audit for review

***Audit Checklists***

- Performance of audits shall be documented by the auditors using the Audit Checklist (AW-ADMIN-1900), or a suitable alternative
- The checklist shall be reviewed for suitability prior to each audit by the Lead Auditor, and distributed to any other auditors

***Audit Methodology***

- The QMS rep will forward a copy of the current Operational Plan (and any previous audit results) to the auditor for review prior to the first day of the audit
- The auditor shall review any non-conformances identified in previous QMS audits (internal and external)
- To begin the audit, the lead auditor shall review audit plan with staff
- **All onsite audits** shall include a visit to representative areas of the water system being audited **(*NOTE* in the unusual case where an onsite audit cannot be conducted, a remote audit may be possible and a portable device could be used to show the auditor a live image of the areas)**
- Auditors shall record audit information, including
    - areas visited
    - items checked
    - individuals interviewed
    - documents or records reviewed
    - concerns identified
- For completeness, no areas in the checklist may be left blank
    - If an item is Not Evaluated, it is marked ‘NE’
    - If it is Not Applicable, it is marked ‘NA’
- Upon completion of an internal audit, the auditors shall review their findings together, and the Lead Auditor shall decide on non-conformances and opportunities for improvement

***Reporting Findings /Follow-Up***

- A closing meeting may be held, where the Lead Auditor presents findings to the OA
- The Lead Auditor shall prepare a report of the findings, or forward a completed copy of the auditor’s checklists with the front summary page completed
- The Lead Auditor shall submit the report to the QMS Representative

- Findings will also be submitted to Top Management during Management Review
- Top Management, or the QMS Rep, is responsible for reporting the results to the Owner
- The QMS Representative shall handle the non-conformances by following the **Continual Improvement** procedure (AW-ADMIN-1920)
- The QMS representative is responsible for documenting any approved action plans and closing out non-conformances

***Records***

- Completed auditor checklists are retained by the auditors
- Audit reports are filed by the QMS Representative with QMS records
- Audit plans are filed by the QMS Representative with QMS records
- Completed Corrective Action Forms are filed as per the **Continual Improvement** Procedure (AW-ADMIN-1920)
- Audit schedules are retained by the QMS Rep

## Associated Documents

- Internal Audit Checklist (AW-ADMIN-1910)
- Internal Audit Schedule
- **Continual Improvement** Procedure (AW-ADMIN-1920)
- Internal Audit Reports

## Table of Revisions

| *Date (dd/mm/yyyy)* | Description of Revision |
|---|---|
| 22/05/2009 | 'and QMS representative' removed from last bullet in Audit Plan |
| 18/11/2010 | Internal auditor can also come from within the company ('Responsibilities')<br>Audit schedule maintenance changed to QMS Rep from PM<br>For bullet #3 under 'Auditors'-'shall' replaced with 'may'<br>Added: QMS Rep can report Audit findings to Owner |
| 24/04/2012 | Defined '12 months' and clarified Audit Frequency<br>Updated beginning of Audit Methodology |
| 15/09/2014 | Added bullet to Report Findings about action plans and closing out NC |
| 08/03/2016 | Removed reference to AW-ADMIN-1930 in Associated Documents |
| 14/09/2017 | Changed "12 month period" to "calendar year"<br>Removed definition of "12 months" |
| 25/10/2017 | Updated first bullet under Audit Schedule and Frequency (bold) |
| 24/09/2018 | Updated to Veolia logo and changed any reference from AW to Veolia |
| 28/04/2020 | Changed references to AW-ADMIN-1920 (Continual Improvement procedure)<br>Added additional language under Audit Methodology about the possibility of remote audits |

## Internal Audit Checklist

| | |
|---|---|
| **DATE OF INTERNAL AUDIT:** | |
| **AUDITOR NAMES:** | |
| **DRINKING WATER SYSTEM:** | |
| **AREA(S)/FACILITY VISITED:** | |
| **PEOPLE INTERVIEWED:** | |
| **DOCUMENTS VIEWED:** | |

| DWQMS Requirement | Notes | Findings (see footer for definitions) |
|---|---|---|
| **1. Quality Management System**<br><br>PLAN – The Operational Plan shall document a Quality Management System that meets the requirements of this Standard. | | |
| DO – The Operating Authority shall establish and maintain the Quality Management System in accordance with the requirements of this Standard and the policies and procedures documented in the Operational Plan. | | |
| **2. Quality Management System Policy**<br><br>PLAN – The Operational Plan shall document a Quality Management System Policy that provides the foundation for the Quality Management System, and:<br>a) includes a commitment to the maintenance and continual improvement of the Quality Management System,<br>c) includes a commitment to the consumer to provide safe drinking water,<br>d) includes a commitment to comply with applicable legislation and regulations, and<br>e) is in a form that can be communicated to all Operating Authority personnel, the Owner and the public. | | <br>a)<br>b)<br>c)<br>d)<br>e) |
| DO – The Operating Authority shall establish and maintain a Quality Management System that is consistent with the QMS Policy. | | |
| **3. Commitment and Endorsement**<br><br>PLAN – The Operational Plan shall contain a written endorsement of its contents by Top Management and the Owner. | | |

| DWQMS Requirement | Notes | Findings (see footer for definitions) |
|---|---|---|
| DO – Top Management shall provide evidence of its commitment to an effective Quality Management System by: | | |
| a) ensuring that a Quality Management System is in place that meets the requirements of this Standard, | | a) |
| b) ensuring that the Operating Authority is aware of all applicable legislative and regulatory requirements, | | b) |
| c) communicating the Quality Management System according to the procedure for communications, and | | c) |
| d) determining, obtaining or providing the resources needed to maintain and continually improve the Quality Management System. | | d) |
| **4. Quality Management System Representative**<br><br>PLAN – The Operational Plan shall identify a Quality Management System representative. | | |
| DO – Top Management shall appoint, and authorize a Quality Management System representative who, irrespective of other responsibilities, shall: | | |
| a) administer the Quality Management System by ensuring that processes and procedures needed for the Quality Management System are established and maintained, | | a) |
| b) report to Top Management on the performance of the Quality Management System and any need for improvement, | | b) |
| c) ensure that current versions of documents required by the Quality Management System are being used at all times, | | c) |
| d) ensure that personnel are aware of all applicable legislative and regulatory requirements that pertain to their duties for the operation of the subject system, and | | d) |

| DWQMS Requirement | Notes | Findings (see footer for definitions) |
|---|---|---|
| e) promote awareness of the Quality Management System throughout the Operating Authority. | | e) |
| **5. Document and Records Control**<br><br>PLAN – The Operational Plan shall document a procedure for document and records control that describes how: | | |
| a) documents required by the Quality Management System are:<br>i. kept current, legible and readily identifiable | | a)i. |
| ii. retrievable | | a)ii. |
| iii. stored, protected, retained and disposed of, and | | a)iii. |
| b) records required by the Quality Management System are:<br>i. kept legible, and readily identifiable | | b)i. |
| ii. retrievable | | b)ii. |
| iii. stored, protected, retained and disposed of. | | b)iii. |
| DO – The Operating Authority shall implement and conform to the procedure for document and records control and shall ensure that the Quality Management System documentation for the subject system includes: | | |
| a) the Operational Plan and its associated policies and procedures, | | a) |
| b) documents and records determined by the Operating Authority as being needed to ensure the effective planning, operation and control of its operations, and | | b) |
| c) the results of internal and external audits and management reviews. | | c) |
| **6. Drinking-Water System**<br><br>PLAN – The Operational Plan shall document, as applicable: | | |
| a) for the subject system: | | i. |

| DWQMS Requirement | Notes | Findings (see footer for definitions) |
|---|---|---|
| i. the name of the Owner and Operating Authority<br>ii. if the system includes equipment that provides Primary Disinfection and/or Secondary Disinfection<br>A. a description of the system including all treatment system processes and distribution system components<br>B. a Treatment System process flow chart<br>C. a description of the water source, including:<br>I. general characteristics of the raw water supply<br>II. common event-driven fluctuations and<br>III. any resulting operational challenges and threats<br><br>iii. if the system does not include equipment that provides Primary Disinfection or Secondary Disinfection:<br>A. a description of the system including all Distribution System components, and<br>B. a description of any procedures that are in place to maintain disinfection residuals<br><br>b) if the subject system is an operational subsystem, a summary description of the municipal residential drinking-water system it is a part of including the name of the Operating Authority(ies) for the other Operational Subsystems<br>c) if the subject system is connected to one or more other drinking-water systems owned by different owners, a summary description of those systems which:<br>i. indicates whether the subject system obtains water from or supplies water to those systems, | | ii.<br>iii.<br>iv.<br>i.<br>ii.<br>iii.<br>v.<br>b)<br>c)<br>i.<br>ii. |

| DWQMS Requirement | Notes | Findings (see footer for definitions) |
|---|---|---|
| ii. names the Owner and Operating Authority of those systems, and<br>iii. identifies which, if any, of those systems that the Subject System obtains water from are relied upon to ensure the provision of safe drinking water | | |
| DO – The Operating Authority shall ensure that the description of the drinking-water system is kept current. | | |
| **7. Risk Assessment**<br><br>PLAN – The Operational Plan shall document a risk assessment process that:<br>a) Considers potential hazardous events and associated hazards, as identified in the Ministry of the Environment and Climate Change document titled Potential Hazardous Events for Municipal Residential Drinking Water Systems, dated February 2017 as it may be amended. A copy of this document is available at www.ontario.ca/drinkingwater<br>b) identifies potential hazardous events and associated hazards,<br>c) assesses the risks associated with the occurrence of hazardous events,<br>d) ranks the hazardous events according to the associated risk,<br>e) identifies control measures to address the potential hazards and hazardous events,<br>f) identifies critical control points,<br>g) identifies a method to verify at least once every calendar year, the currency of the information and the validity of the assumptions used in the risk assessment,<br>h) ensures that the risks are assessed at least once every thirty-six months, and<br>h) considers the reliability and redundancy of equipment. | | <br>a)<br>b)<br>c)<br>d)<br>e)<br>f)<br>g)<br>h) |

| DWQMS Requirement | Notes | Findings (see footer for definitions) |
|---|---|---|
| DO – The Operating Authority shall perform a risk assessment consistent with the documented process. | | |
| **8. Risk Assessment Outcomes**<br><br>PLAN – The Operational Plan shall document:<br>a) the identified potential hazardous events and associated hazards,<br>b) the assessed risks associated with the occurrence of hazardous events,<br>c) the ranked hazardous events,<br>d) the identified control measures to address the potential hazards and hazardous events,<br>e) the identified critical control points and their respective critical control limits,<br>f) procedures and/or processes to monitor the critical control limits,<br>g) procedures to respond to deviations from the critical control limits, and<br>h) procedures for reporting and recording deviations from the critical control limits. | | <br>a)<br>b)<br>c)<br>d)<br>e)<br>f)<br>g)<br>h) |
| DO – The Operating Authority shall implement and conform to the procedures. | | |
| **9. Organizational Structure, Roles, Responsibilities and Authorities**<br><br>PLAN – The Operational Plan shall:<br>a) describe the organizational structure of the Operating Authority including respective roles, responsibilities and authorities,<br>b) delineate corporate oversight roles, responsibilities and authorities in the case where the Operating Authority operates multiple subject systems, | | <br>a)<br>b) |

| DWQMS Requirement | Notes | Findings (see footer for definitions) |
|---|---|---|
| c) identify the person, persons or group of people within the management structure of the organization responsible for undertaking the Management Review described in Element 20,<br>d) identify the person, persons or group of people, having Top Management responsibilities required by this Standard, along with their responsibilities, and<br>e) identify the Owner of the subject system. | | c)<br>d)<br>e) |
| DO – The Operating Authority shall keep current the description of the organizational structure including respective roles, responsibilities and authorities, and shall communicate this information to Operating Authority personnel and the Owner. | | |
| **10. Competencies**<br><br>PLAN – The Operational Plan shall document:<br>a) competencies required for personnel performing duties directly affecting drinking water quality,<br>b) activities to develop and/or maintain competencies for personnel performing duties directly affecting drinking water quality, and<br>c) activities to ensure that personnel are aware of the relevance of their duties and how they affect safe drinking water. | | <br>a)<br>b)<br>c) |
| DO – The Operating Authority shall undertake activities to:<br>a) meet and maintain competencies for personnel directly affecting drinking water quality and shall maintain records of these activities, and<br>b) ensure that personnel are aware of the relevance of their duties and how they affect safe drinking water, and shall maintain records of these activities. | | <br>a)<br>b) |

| DWQMS Requirement | Notes | Findings (see footer for definitions) |
|---|---|---|
| | | |
| **11. Personnel Coverage**<br><br>PLAN – The Operational Plan shall document a procedure to ensure that sufficient personnel meeting identified competencies are available for duties that directly affect drinking water quality. | | |
| DO – The Operating Authority shall implement and conform to the procedure. | | |
| **12. Communications**<br><br>PLAN – The Operational Plan shall document a procedure for communications that describes how the relevant aspects of the Quality Management System are communicated between Top Management and:<br>a) the Owner,<br>b) Operating Authority personnel,<br>c) Suppliers that have been identified as essential under Plan (a) of Element 13 of this Standard, and<br>d) the public. | | a)<br>b)<br>c)<br>d) |
| DO – The Operating Authority shall implement and conform to the procedure. | | |
| **13. Essential Supplies and Services**<br><br>PLAN – The Operational Plan shall:<br>a) identify all supplies and services essential for the delivery of safe drinking water and shall state, for each supply or service, the means to ensure its procurement, and<br>b) include a procedure by which the Operating Authority ensures the quality of essential supplies and services, in as much as they may affect drinking water quality. | | a)<br>b) |
| DO – The Operating Authority shall implement and conform to the procedure. | | |

| DWQMS Requirement | Notes | Findings (see footer for definitions) |
|---|---|---|
| **14. Review and Provision of Infrastructure**<br><br>PLAN – The Operational Plan shall document a procedure for reviewing the adequacy of the infrastructure necessary to operate and maintain the subject system that:<br>a) Considers the outcomes of the risk assessment documented under Element 8, and<br>b) Ensures that the adequacy of the infrastructure necessary to operate and maintain the Subject System is reviewed at least once every calendar year. | | |
| DO – The Operating Authority shall implement and conform to the procedure and communicate the findings of the review to the Owner. | | |
| **15. Infrastructure Maintenance, Rehabilitation and Renewal**<br><br>PLAN – The Operational Plan shall document:<br>(a) a summary of the Operating Authority's infrastructure maintenance, rehabilitation and renewal programs for the subject system, and<br>(b) a long term forecast of major infrastructure maintenance, rehabilitation and renewal activities. | | |
| DO – The Operating Authority shall:<br>a) keep the summary of the infrastructure maintenance, rehabilitation and renewal programs current,<br>b) ensure that the long term forecast is reviewed at least once every Calendar year<br>c) communicate the programs to the Owner, and<br>d) monitor the effectiveness of the maintenance program. | | a)<br>b)<br>c) |

| DWQMS Requirement | Notes | Findings (see footer for definitions) |
|---|---|---|
| **16. Sampling, Testing and Monitoring**<br><br>PLAN – The Operational Plan shall document:<br>a) a sampling, testing and monitoring procedure for process control and finished drinking water quality including requirements for sampling, testing and monitoring at the conditions most challenging to the subject system,<br>b) a description of any relevant sampling, testing or monitoring activities that take place upstream of the subject system, and<br>c) a procedure that describes how sampling, testing and monitoring results are recorded and shared between the Operating Authority and the Owner, where applicable. | | <br>a)<br>b)<br>c) |
| DO – The Operating Authority shall implement and conform to the procedures. | | |
| **17. Measurement and Recording Equipment Calibration and Maintenance**<br><br>PLAN – The Operational Plan shall document a procedure for the calibration and maintenance of measurement and recording equipment. | | |
| DO – The Operating Authority shall implement and conform to the procedure. | | |
| **18. Emergency Management**<br><br>PLAN – The Operational Plan shall document a procedure to maintain a state of emergency preparedness that includes:<br>a) a list of potential emergency situations or service interruptions,<br>b) processes for emergency response and recovery,<br>c) emergency response training and testing requirements, | | <br>a)<br>b)<br>c) |

| DWQMS Requirement | Notes | Findings (see footer for definitions) |
|---|---|---|
| d) Owner and Operating Authority responsibilities during emergency situations,<br>e) references to municipal emergency planning measures as appropriate, and<br>f) an emergency communication protocol and an up-to-date list of emergency contacts. | | d)<br>e)<br>f) |
| DO – The Operating Authority shall implement and conform to the procedure. | | |
| **19. Internal Audits**<br><br>PLAN – The Operational Plan shall document a procedure for internal audits that:<br>a) evaluates conformity of the QMS with the requirements of this Standard,<br>b) identifies internal audit criteria, frequency, scope, methodology and record-keeping requirements,<br>c) considers previous internal and external audit results, and<br>d) describes how Quality Management System corrective actions are identified and initiated. | | <br>a)<br>b)<br>c)<br>d) |
| DO – The Operating Authority shall implement and conform to the procedure and shall ensure that internal audits are conducted at least once every calendar year. | | |
| **20. Management Review**<br><br>PLAN - The Operational Plan shall document a procedure for management review that evaluates the continuing suitability, adequacy and effectiveness of the Quality Management System and that includes consideration of:<br>a) incidents of regulatory non-compliance,<br>b) incidents of adverse drinking-water | | <br>a)<br>b)<br>c)<br>d) |

| DWQMS Requirement | Notes | Findings (see footer for definitions) |
|---|---|---|
| tests,<br>c) deviations from critical control point limits and response actions,<br>d) the effectiveness of the risk assessment process,<br>e) internal and third-party audit results,<br>f) results of emergency response testing,<br>g) operational performance,<br>h) raw water supply and drinking water quality trends,<br>i) follow-up on action items from previous management reviews,<br>j) the status of management action items identified between reviews,<br>k) changes that could affect the Quality Management System,<br>l) consumer feedback,<br>m) the resources needed to maintain the Quality Management System,<br>n) the results of the infrastructure review,<br>o) Operational Plan currency, content and updates, and<br>p) staff suggestions. | | e)<br>f)<br>g)<br>h)<br>i)<br>j)<br>k)<br>l)<br>m)<br>n)<br>o)<br>p) |
| DO – Top Management shall implement and conform to the procedure and shall:<br>a) ensure that a management review is conducted at least once every calendar year,<br>b) consider the results of the management review and identify deficiencies and actions items to address the deficiencies,<br>c) provide a record of any decisions and action items related to the management review including the personnel responsible for delivering the action items and the proposed timelines for their implementation,<br>d) report the results of the management review, the identified deficiencies, decisions and action items to the Owner. | | <br>a)<br>b)<br>c)<br>d) |

| DWQMS Requirement | Notes | Findings (see footer for definitions) |
|---|---|---|
| **21. Continual Improvement**<br><br>**PLAN** – The Operating Authority shall develop a procedure for tracking and measuring continual improvement of its Quality Management System by:<br>a) reviewing and considering applicable best management practices, including any published by the Ministry of the Environment and Climate Change and available on www.ontario.ca/drinkingwater, at least once every thirty-six months;<br>b) documenting a process for identification and management of Quality Management System Corrective Actions that includes:<br>i. investigating the cause(s) of an identified non-conformity,<br>ii. documenting the action(s) that will be taken to correct the non-conformity and prevent the non-conformity from re-occurring, and<br>iii. reviewing the action(s) taken to correct the non-conformity, verifying that they are implemented and are effective in correcting and preventing the re-occurrence of the non-conformity.<br>c) documenting a process for identifying and implementing Preventive Actions to eliminate the occurrence of potential non-conformities in the Quality Management System that includes:<br>i. reviewing potential non-conformities that are identified to determine if preventive actions may be necessary,<br>ii. documenting the outcome of the review, including the action(s), if any, that will be taken to prevent a non-conformity from occurring, and<br>iii. reviewing the action(s) taken to prevent a non-conformity, verifying that they are implemented and are effective in preventing the occurrence of the non-conformity.<br><br>DO- The Operating Authority shall strive to continually improve the effectiveness of its Quality Management System by | | |

| DWQMS Requirement | Notes | Findings (see footer for definitions) |
|---|---|---|
| implementing and conforming to the procedure. | | |

## Purpose

This procedure describes defines the responsibilities and process for identifying and investigating non-conformances, as well as opportunities for improvements (OFIs) for taking action to mitigate any negative impacts caused, and for applying corrective actions. **It also addresses ways to identify and implement preventive actions to eliminate potential non-conformances**

## References

Drinking Water Quality Management Standard Element **21**

## Procedure

***How to Handle a Nonconformance***

What Is a Non-conformance?
A nonconformance is a situation where:

- A documented requirement doesn't meet the Drinking Water Quality Management Standard
- Actual practice doesn't meet a documented procedure
- The actual practice isn't effective
- Evidence is missing, or
- A significant critical control point is missing

What is an Opportunity for Improvement?
An OFI is a recommendation given by an auditor, top management, or anyone else associated with the drinking water system that could potentially improve the QMS

Who

- Depending on the nature of the nonconformance, the corrective actions for a nonconformance may be handled by the Operator, QMS Rep, Owner, or some combination
- The QMS Rep is responsible for documenting QMS corrective actions, and communicating the actions required to the responsible parties

How Are They Handled

- If the initial observer is operations staff employed by the Operating Authority, the observer must notify the QMS rep, or designate
- QMS rep enters the information into the CAF Tracking Form detailing the non-conformance or OFI, the Type of Nonconformance, and the Description
- To fill out the Tracking Form, the following information is required:
    - Source of Finding/Action Item

- Whether it was an Internal or External source (in case of a DWQMS Audit)
- Audit/Inspection/Meeting Date
- The date the Finding/Action Item was issued
- A description of the Finding/Recommendation
- The type of finding (non-conformance, OFI, recommendation) and an identification #
- Indicate the root cause of the problem, if applicable. A pick-list of common root causes is provided for assistance. Try to ask "Why did this happen?" and go back as far as possible.
- Identification of an action item, where applicable
- Whether the action item was discussed at a management review, and who is responsible for the Action Item
- An Action Item deadline
- A corrective action completion date, if applicable
- A List of any QMS updates (e.g. updates to an operating procedure) that were modified as a result of the action
- Any other Comments
- Once the action item is completed, a 90 day check due date, completion date and comments can also be added

- It is critical that root cause be investigated, even for seemingly obvious non-conformances
- Changes in QMS documents may be tracked on the form or in the Table of Revisions, and handled by the QMS Rep, or designate
- QMS Rep ensures corrective measures are applied
- When applicable, the QMS Rep, or designate, reviews effectiveness of the corrective actions, by revisiting the non-conformance within three months, and recording comments on the form
- If not working effectively, the QMS Rep must implements further actions.

<u>Handling OFIs</u>

- Opportunities for Improvement are also documented in the CAF Tracking form
- The QMS rep will determine whether the OFI requires a response
- The QMS will use their best judgment as to whether or not there should be a follow through on the recommendation.
- If the QMS rep feels the OFI does not required a response, an explanation will be given as to why

<u>Tracking Corrective Actions</u>

- The QMS Rep maintains a spreadsheet to track corrective actions and their follow-up. The spreadsheets follows which Corrective Actions are open and which are closed
- The tracking spreadsheet is reviewed monthly and outstanding 90-day checks are completed. A monthly reminder is scheduled into the QMS Rep's electronic calendar
- The CAF Tracking Spreadsheet is saved on the applicable Veolia Google drive

Ministry Inspections

- Findings (non-compliances or best practice recommendations) from regulatory inspections can also be included in the corrective action tracking template

Considering Best Practices

- At least every thirty-six months, applicable best management practices identified internally and during MECP drinking water inspections (including any published by the MECP and available on www.ontario.ca/drinkingwater) will be reviewed and considered

**Preventing Non-conformances**

- **Trending of lab results are reviewed at least annually (as part of the management review) to identify possible issues**
- **Results of other Veolia QMS system audits can be used to review and mitigate potential non-conformances in other systems**

Procedure Updates

- If Operations staff or the QMS Rep identify the need to update a procedure, these are not considered to be non-conformances or OFIs. QMS Rep will update and issue procedures as required.

## Associated Documents

Operator Log Book
Operations Reports to Owner
CAF Tracking Form

## Table of Revisions

| *Date (dd/mm/yyyy)* | Description of Revision |
|---|---|
| 22/05/2009 | Bullet edited (4th from bottom) under 'How the are Handled |
| 18/02/2010 | Revised where CAF Tracking Spreadsheet can be found |
| 17/02/2011 | Reviewed procedure. No edits required |
| 15/03/2011 | Revised 'How they are Handled' differing between findings from an operator vs. anyone else |
| 30/01/2012 | Added 'Handling OFIs' and 'What is an Opportunity for Improvement?'<br>Other OFI items added<br>Removed project manager; added QMS rep |
| 12/04/2012 | Added item regarding procedure changes |
| 25/03/2014 | Revised "How are they Handled" to show current practice<br>Removed reference to the Corrective Action Tracking Form (AW-ADMIN-1930) and how to complete it<br>Added references to CAF tracking template |

| | |
|---|---|
| | Updated Handling of OFIs |
| 14/09/2017 | Added Section ‘Considering Best Practices’<br>Added bullet under How they are Handled: Identification of an action item |
| 24/09/2018 | Updated to Veolia logo in header |
| 22/01/2019 | Updated Bullet #4 under Tracking Corrective Actions (bold) |
| 2/8/2019 | Minor wording changes. Also added item about Ministry inspection findings |
| 12/12/2019 | Changed title of document<br>Included reference to preventive action in Purpose<br>Changed Reference to Element 21<br>Included section called Preventing non-conformances |

## Purpose

This procedure describes the process of conducting the Management Review required by the Drinking Water Quality Management System.

## References

Drinking Water Quality Management Standard Element 20

## Procedure

At least once **every calendar year**, the QMS is reviewed by Top Management, to stay informed, and to ensure it is:

- suitable to operations
- adequately managing quality issues and meeting the DWQMS and internal requirements,
- performing this management effectively, and
- adequate resources are provided

If Top Management does not feel the QMS is meeting these criteria, changes are recommended and resources are allocated to make improvements.

The Internal Auditor and operations staff may participate in the meetings at the request of the QMS Rep.

***Frequency of Management Reviews***

- Full Management Review may not be covered in one meeting, but rather by spreading agenda items over the course of several meetings during the period under review
- All of the review items shall be covered at least **every calendar year** but can be covered more frequently due to changes in legislation, circumstances, or at the request of Top Management

***How does the QMS Representative Prepare for Management Review***

- Arranges meeting time with participants
- Compiles necessary records and documents for review, including information about actions taken based on recommendations from past management reviews (may assign a designate to compile the information)
- Reviews the DWQMS element for Management Review to ensure that all items will be addressed.
- Forwards agenda, detailing which review items will be covered, to meeting participants

- Forwards supporting information to meeting participants, providing time for review of these documents before the meeting
- Guides the meeting participants through the review items on the agenda, and discusses the QMS

***QMS Items to Be Reviewed At Least Annually***

Items included in the Management Review:

- Incidents of regulatory non-compliance
- Incidents of adverse drinking-water tests
- Deviations from critical control point limits and response actions
- The efficacy of the risk assessment process
- Internal and third-party audit results
- Results of emergency response testing
- Operational performance
- Raw water supply and drinking water quality trends
- Follow-up on action items from previous management reviews
- The status of management action items identified between reviews
- Changes that could affect the Quality Management System
- Consumer feedback
- The resources needed to maintain the Quality Management System
- Results of the infrastructure review
- Operational Plan currency, content and updates
- Staff suggestions

If all items on the Management Review Checklist are not addressed, the QMS Representative must identify the need to hold a future review meeting to ensure that all items are identified at least once annually.

***How Management Review Happens***

- Agenda items are discussed
- Recommendations are made based on agenda items, and other key issues discussed (especially if the QMS is not felt to be suitable, adequate or effective), including:
    - identification of specific action items
    - personnel responsible for delivering those action items
    - proposed timelines for implementation of the action items
    - the improvement of the QMS and its procedures
    - the improvement of the operating authority's ability to implement consistently the QMS
    - human and financial resource needs

***Documentation***

- Minutes for the Management Review Meeting are taken by a meeting participant, usually the QMS rep.

- The QMS rep shall prepare a report including recommendations above and submit to Top Management
- A time for follow up on the recommendations (typically around 30 days after the initial review) will be scheduled by the QMS rep
- Top Management, or the QMS rep., will report the results of the review, the identified deficiencies, decisions and action items to the Owner
- In the minutes, a record of any decisions and actions shall be recorded, including the details mentioned above in “How Management Review Happens”

## Associated Documents

- **Continual Improvement Procedure** (AW-ADMIN-1900)
- Corrective Action checklist
- Internal Audit Records
- Management Review Meeting Minutes
- Management Review Checklist (AW-ADMIN-2010)

## Table of Revisions

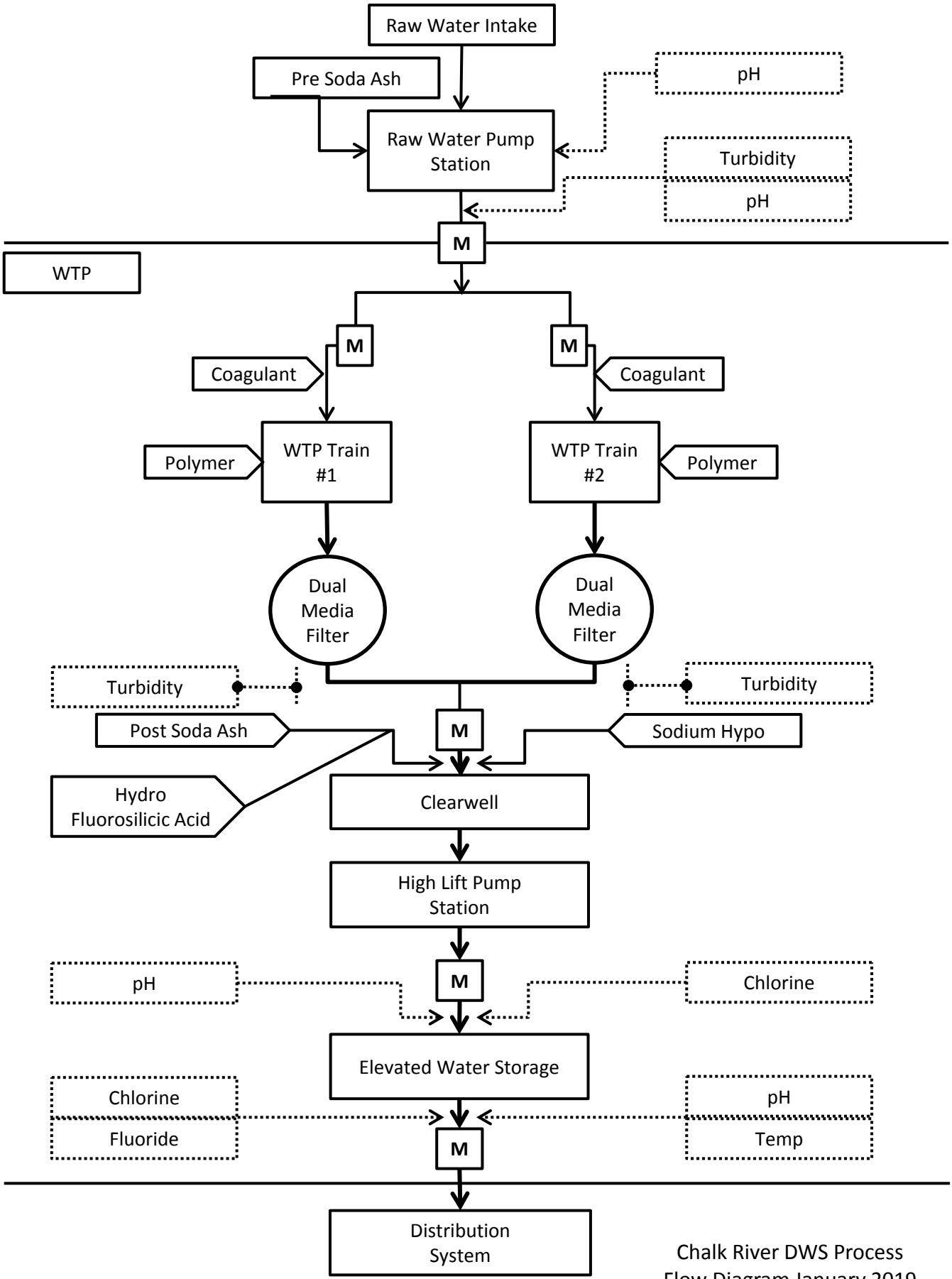
| *Date* | Description of Revision |
|---|---|
| April 1, 2009 | Initial Issue of Document |
| February 3, 2010 | Removed Project Manager from list of people who can participate in meeting |
| March 9, 2011 | Added QMS rep. as a person who can report review results to Owner |
| March 21, 2012 | Added bullet to Documentation regarding a follow up meeting |
| March 9, 2016 | Removed AW-ADMIN-1930 from Associated Documents |
| September 24, 2018 | Updated to Veolia logo in header |
| April 28, 2020 | Changed “annually” to “every calendar year”<br>Updated name of AW-ADMIN-1920 |

| | | | |
|---|---|---|---|
| *Procedure Name:* | ***MANAGEMENT REVIEW CHECKLIST*** | | |
| *Procedure No.:* | ***AW-ADMIN-2010*** | | |
| *Effective Date:* | September 24, 2018 v1 | *Revision Frequency:* | As Required |

| **Items for consideration during Management Review:** | | Period Reviewed | Management Review Date |
|---|---|---|---|
| a) | *Incidents of regulatory non-compliance* | | |
| b) | *Incidents of adverse drinking-water tests* | | |
| c) | *Deviations from critical control point limits and response actions* | | |
| d) | *The efficacy of the risk assessment process* | | |
| e) | *Internal and third-party audit results* | | |
| f) | *Results of emergency response testing* | | |
| g) | *Operational performance* | | |
| h) | *Raw water supply and drinking water quality trends* | | |
| i) | *Follow-up on action items from previous management reviews* | | |
| j) | *The status of management action items identified between reviews* | | |
| k) | *Changes that could affect the Quality Management System* | | |
| l) | *Consumer feedback* | | |
| m) | *The resources needed to maintain the Quality Management System* | | |
| n) | *Results of the infrastructure review* | | |
| o) | *Operational Plan currency, content and updates* | | |
| p) | *Staff suggestions* | | |

# Appendix A:

# Process Flow Diagram




Chalk River DWS Process Flow Diagram January 2019

# Appendix B:

# Risk Assessment

| Area | Process Step | Activity or Sub-Process Step | Nature of Hazard | Hazard / Hazardous Event | Potential Effect | Comments | Likelihood (A) | Severity (B) | Detectability (C) | A + B + C | Risk | CCP? | Prevention / Control Measures | Monitoring / Response Notes (use as basis for procedures) | CCP Limits (use as basis for proc's) | CCP Procedure Reference |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Source water | Intake | | Physical | blockage/break | loss of raw flow | screen on pipe; possibly frazzil ice, vegetation. Never had this happen. Intake pipe points down towards lake bottom. Neighboring water systems (i.e. Deep River) could provide water in a major emergency | 1 | 3 | 1 | 5 | Low | No | tower has 2-3 days of storage, depending on season | low flow alarm. Backup pump can be installed (but is not available on site) to pump raw water into the system. Owner has an emergency protocol in place to notify customers of issues (i.e. to reduce water consumption) | n/a | n/a |
| Source water | Intake | | physical | loss of source water | source water supply shortfall | intake pipe is about 10-12 ft below surface. Gravity fed. Could pump from a lower spot in the lake if extreme measures needed to be taken | 1 | 5 | 1 | 7 | Moderate | No | no measures to take at this time. | flows are alarmed and monitored | n/a | n/a |
| Source Water | Intake | | Chemical/Biological | source water contamination | contamination of raw water | only cottages on lake. Chemical spills highly unlikely. No dischargers in the area | 1 | 2 | 4 | 7 | Moderate | No | Corry Lake has been deemed 'sensitive'. System can be turned off to avoid contaminated water entering the system | regulatory sampling. Raw water is tested weekly. Annual analysis on Schedule 23/24 paramters | n/a | n/a |
| Source water | Intake | | Physical | sudden changes to raw water characteristics | reduced raw water quality | sudden changes not likely | 1 | 2 | 3 | 6 | Moderate | No | no measures to take at this time. | pH and turbidity levels are monitored. Responses would depend on type of change | n/a | n/a |
| Source water | Intake | | Physical | algal blooms | plugging of filters, contamination of source water | no issues currently but could increase with climate change. Source water not stagnant | 1 | 3 | 3 | 7 | Moderate | No | none in place at this time | increase backwashing. Some chemical adjustments. Algal bloom plan now in place | | |
| Low lift | Pumping Facilities | | Physical | loss of power | loss of raw flow | backup power now in place. Automatic transfer | 2 | 1 | 1 | 4 | Low | No | Backup water storage at tower. Genset conducts an automatic test (not under load) on a weekly basis | no 'low lift alarm', but there will be a system failure alarm. | n/a | n/a |
| Low lift | Pumping Facilities | | Physical | pump failure | loss of raw flow | 2 low lift pumps. Automatic switchover | 2 | 1 | 1 | 4 | Low | No | automatic cycling of pumps. Regular PM on pumps | alarm for pump failure. 'No flow' alarm if both pumps failed. | n/a | n/a |
| Low lift | Chemical Feed | | Chemical | chemical (soda ash) pump failure | inadequate treatment | Only soda ash added here; duty/standby pump. System shuts down on alarm | 3 | 1 | 1 | 5 | Low | No | system shuts down when any alarm is activated | if duty pump fails, there is indicator on SCADA screen. Automatic transfer to backup pump. An alarm will be sent out if backup pump fails | n/a | n/a |
| Low lift | Chemical Feed | | Chemical | parts (injector, tubing) failure | inadequate treatment | Only soda ash added here. Flow monitor unable to sense inadequate dosage | 3 | 2 | 2 | 7 | Moderate | No | daily rounds. Regular PM on pump and parts | No direct alarm for parts failure, but a pH alarm and then a turbidity alarm will eventually be the result | n/a | n/a |
| Low lift | Transmission main to WTP | | Physical | raw water line damage (break) | loss of raw flow | line is 6 ft deep, under a berm. Trees growing on berm. Unsure of root structure. Gas line in area. Water tower is backup storage. Line did break in Q1 2018 and was difficult to locate. Valve was installed at this time to be able to isolate line in the future | 2 | 3 | 2 | 7 | Moderate | No | marking for gas lines in place in case other digging is required in the area. Operating Authority does not exercise any control over this issue. | alarm for zero flow when pump is running | n/a | n/a |
| WTP | flow metering | | Physical | Flow meter failure | loss of raw flow/incorrect flow data | error message would cause alarm | 1 | 2 | 1 | 4 | Low | No | calibrated annually by outside contractor | alarm would be sent to staff and would shut down plant | n/a | n/a |
| WTP | Chemical addition | | Chemical | loss of chemical addition | inadequate treatment | coagulant and polymer. Chemical addition is flow paced. No pump redundancy (one pump for each train) | 3 | 2 | 1 | 6 | Moderate | No | clean flow monitors monthly | alarm will shut plant down. Flow monitor is unable to sense flow. There is a coagulant pump "on the shelf" but there are no spare polymer pumps. System could go down to one train if repair or replacement was needed | n/a | n/a |
| Floc mixer | Treatment | | Chemical/Physical | Parts failure-gear drive/motor | inadequate flocculation/coagulation | Automatic start/stop. System can be run if floc mixer is not working. System can be run on one train | 2 | 2 | 3 | 7 | Moderate | No | regular maintenance | Daily rounds. Motor failure should generate a system alarm | n/a | n/a |
| Clarifier | Treatment | | Physical/biological | waste (blowdown) valve failure | plant will shut down | Water in clarifier will flow to waste holding system and then to sewage plant. Additional valve exists (in front of automatic valve) that could be manually shut | 2 | 3 | 1 | 6 | Moderate | No | n/a | alarmed (valve position failure). Shuts plant down | n/a | n/a |
| Treatment | Filtration | | Physical | filter plugging | reduction in flow | filters are set to backwash on hours/head loss | 1 | 2 | 3 | 6 | Moderate | No | filters are set to backwash about every 50 hours or by head loss, whichever comes first; less in winter | alarmed | n/a | n/a |

| Area | Process Step | Activity or Sub-Process Step | Nature of Hazard | Hazard / Hazardous Event | Potential Effect | Comments | Likelihood (A) | Severity (B) | Detectability (C) | A + B + C | Risk | CCP? | Prevention / Control Measures | Monitoring / Response Notes (use as basis for procedures) | CCP Limits (use as basis for proc's) | CCP Procedure Reference |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Treatment | Filtration | | Physical | filter breakthrough | inadequate filtration from inadequate dosing or backwash | severe media contamination due to improper dosing | 1 | 2 | 1 | 4 | Low | No | regular backwashes | turbidity alarm | n/a | n/a |
| Treatment | Filtration | | Phyiscal | filter valve failure | inadequate filtration | will alarm immediately | 1 | 1 | 1 | 3 | Low | No | regular backwashes | valve position alarm will shut down plant | n/a | n/a |
| Treatment | Filtration | backwash | Physical | filter level indicator failure | inadequate backwash | 2 trains; can be run separately. Filters can be backwashed manually | 2 | 2 | 2 | 6 | Moderate | No | n/a | turbidity alarm | n/a | n/a |
| Treatment | Filtration | | Physical | loss of air | valve failures | 2 air compressors; one duty, one standby with alternate operation. Valves can't operate without air | 2 | 2 | 1 | 5 | Low | No | regular maintenance | alarmed | n/a | n/a |
| Treatment | Filtration | air scour blower | Physical | blower failure | inadequate backwash | one blower shared between the two trains. Can still backwash without air | 1 | 2 | 2 | 5 | Low | No | regular maintenance. More backwashes if conducting them manually | turbidity alarm likely | n/a | n/a |
| Treatment | Filtration | | Physical | turbidimeter malfunction | plant shut down | one for each train | 2 | 2 | 1 | 5 | Low | No | annual calibration by contractor; weekly verifications done by staff. New turbidimeters installed; one in 2021, another in 2022 | alarm | n/a | n/a |
| Treatment | Chemical addition | | Physical | chemical pump failure | inadequate chemical treatment | sodium hypo, soda ash. Each chemical has a backup pump | 3 | 2 | 1 | 6 | Moderate | No | regular maintenance | alarms shut plant down | n/a | n/a |
| Treatment | Chemical addition | | Physical | fluoride pump failure | inadequate chemical treatment | no backup pump. Short term fluoride loss is ok | 3 | 2 | 1 | 6 | Moderate | No | regular maintenance. Spare pump that is available for chlorine would work here | alarms shut plant down | n/a | n/a |
| Treatment | Clearwell | | Physical | level transducer failure | loss of automatic system control | has never happened but can't test. Assume that alarm causes plant stop. Back level sensor onsite | 1 | 4 | 1 | 6 | Moderate | No | n/a | Typically fail reading 'high' or 'low' which would cause an alarm | n/a | n/a |
| Treatment | System train | | Physical/biological | loss of treatment train | reduced treatment capacity | >10-12L/s (in remaining train) will cause diminished treatment efficiency; system designed for two trains but will run on one train (not exceeding 10L/s) | 3 | 3 | 1 | 7 | Moderate | No | n/a | if one train was to go down, an alarm would be generated and plant would shut down. Operator would manually switch to other train | n/a | n/a |
| High lift | Treatment | | All | high lift pump failure | could limit water supply | 3 pumps; automatic start up (if required) | 3 | 2 | 1 | 6 | Moderate | No | regular maintenance; spare parts on-site | pump failure alarm; won't shut plant down | n/a | n/a |
| Tower | Transmission line | | Physical/biological | line break between plant and tower | could not supply tower with water | about 0.5km of PVC line from high lift to tower. At least 6' deep. A secondary feed line is available but a BWA would have to be put in place. Check valve in place to avoid draining the tower | 1 | 3 | 3 | 7 | Moderate | No | check valve on line so tower won't empty. 2-3 day supply in tower | first alarm would be for tower level, if water from line wasn't seen visually. | n/a | n/a |
| Tower | Power supply | | Physical | loss of power | loss of raw flow | backup power now in place. Automatic transfer. | 1 | 2 | 1 | 4 | Low | No | n/a | There will be a system failure alarm. If power can't be restored, water can still flow from tower but readings need to be taken manually via MECP/MOH instructions | n/a | n/a |
| Tower | Distribution | | Physical | level transducer failure | unknown supply in tower | overflow pipe in tower. Pressure gauge on the line | 1 | 3 | 2 | 6 | Moderate | No | n/a | low/high alarm | n/a | n/a |
| Tower | flow metering | | Physical | Flow meter failure | loss of flow data | other flow meters in system would give an estimate of flow from tower | 1 | 1 | 1 | 3 | Low | No | calibrated annually by outside contractor; would also notice issue on daily rounds | flow meter alarm | n/a | n/a |
| Tower | Water Supply | | Phyiscal | Any castatrophe at the WTP where tower can not be filled | loss of water supply | With co-ordination with Owner, water can be brought in from an outside source | 1 | 5 | 2 | 8 | Moderate | No | There are measures that can be taken to reduce water usage. 2-3 days supply in the tower | Low level alarms | n/a | n/a |
| Tower | Distribution | | All | no flow from tower | improper disinfection | could be caused by large main break. If tower is bypassed, BWA needs to be issued as CT is not being met | 1 | 4 | 2 | 7 | Moderate | No | weekly chlorine analyzer verification | continuous monitoring of FCR | n/a | n/a |
| General | LL, WTP and Tower | | Physical | security breach | damage/contamination | fence at tower. Entry alarms at all doors | 2 | 4 | 2 | 8 | Moderate | No | entry alarms. Sites are locked at all times | Entry alarms paged out | n/a | n/a |
| General | SCADA | | All | SCADA failure | communication failure | backup computer to collect data; system will still run | 3 | 2 | 3 | 8 | Moderate | No | two computers run in tandem | would only notice issue on daily rounds | n/a | n/a |
| General | Chemical Supply | | All | loss of chemical supply | inadequate treatment | calls to supplier in advance (one month) of requiring it | 2 | 3 | 3 | 8 | Moderate | No | chemical ordered in advance; backup suppliers available | chemical tanks checked daily, chemical inventory recorded at least every two weeks to monitor rate of use | n/a | n/a |
| General | Chemical additon | post-chemical pump | Physical/biological | chemical line failure | inadequate treatment | issue dependent on where the line fails (post pump) | 3 | 2 | 3 | 8 | Moderate | No | regular maintenance; daily checks | chlorine and turbidity alarms | n/a | n/a |
| General | Chemical additon | pre-chemical pump | Physical/biological | chemical line failure | inadequate treatment | any failure pre-pump will cause a pump failure which will then shut down the plant | 2 | 2 | 2 | 6 | Moderate | No | regular maintenance; daily checks | chemical pump failure alarms | n/a | n/a |
| Chemical storage | Treatment | | All | tank failure | inadequate chemical supply | this applies mostly to day tanks, where the chemical pumps draw from | 1 | 4 | 1 | 6 | Moderate | No | daily checks by staff. If tank(s) were empty, pumps would trip and alarm, causing plant shut down | daily checks by staff | n/a | n/a |

| Area | Process Step | Activity or Sub-Process Step | Nature of Hazard | Hazard / Hazardous Event | Potential Effect | Comments | Likelihood (A) | Severity (B) | Detectability (C) | A + B + C | Risk | CCP? | Prevention / Control Measures | Monitoring / Response Notes (use as basis for procedures) | CCP Limits (use as basis for proc's) | CCP Procedure Reference |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Treatment plant | Power supply | | Physical | power failure | loss of water supply | Backup genset now in place. System has 2-3 days of backup treated water in tower, depending on time of year | 2 | 2 | 1 | 5 | Low | No | Automatic weekly testing of genset | Power failure alarm. Tower/flow level should be monitored manually. Owner has an emergency protocol in place to communicate emergency issues to customers | n/a | n/a |
| General | Staffing | | All | inadequate coverage | all | contract calls for two staff; can be operated in short term with one | 1 | 3 | 1 | 5 | Low | No | system can be run by one operator over a short period of time (i.e. a month) | temporary staff could be hired or brought in from another project if employee was gone long term | n/a | n/a |
| General | Staffing | | All | inadequate training of operator | all | both CR staff are adequately licensed | 1 | 2 | 2 | 5 | Low | No | Not an issue. Both operators have at least their class 1 licenses | expectation is for staff to obtain Class 1 certificate ASAP. | n/a | n/a |
| Distribution system | General | | Physical | THMs | exceedance of O. Reg 169/03 | an issue with surface water plant because of organics and sodium hypo as a disinfectant | 3 | 2 | 3 | 8 | Moderate | No | Regular system flusing, reduced clearwell level, more frequent filter backwashing in summer | quarterly regulatory sampling | n/a | n/a |
| Distribution system | Distribution | | Physical/biological | main break | loss of pressure/water supply or contamination | Sustained pressure loss caused by main break or tower loss. Pressure is created by gravity. AWWA Standards and MECP requirements are to be followed when determining severity of break and when returning system to service after repair | 2 | 3 | 3 | 8 | Moderate | No | Contractor must follow AWWA standards/MECP requirements under supervisor of OA | depending on level of main break, bacteriological analysis may be conducted. Isolate break if possible. Follow contingency plan | n/a | n/a |
| Distribution system | Distribution | | Biological | dead ends | inadequate disinfection | 10-12 dead ends in system; more of an issue in summer | 2 | 3 | 3 | 8 | Moderate | No | flushing at least twice a year. | weekly FCR testing at two of the dead ends | n/a | n/a |
| General | General | | Physical | Catastrophic Fire | drain on water supply | In case of catastrophic fire, local fire department has a protocol in place to take water from source outside of drinking water system | 1 | 4 | 2 | 7 | Moderate | No | Fire dept can pull water from an alternate location if demand on water system is too heavy | tower level is alarmed and town has a protocol in place to communicate to consumers to reduce usage. FD may call operations staff | n/a | n/a |
| General | Regulatory Sampling | | n/a | failed sample delivery | violation of O. Reg. 170/03 for sampling requirements | samples are delivered via outside company to lab (2 hr drive away). These samples are dropped off by staff to an off site location for pick up. Regulations allow for flexibility in sampling schedule if initial sample doesn't get delivered | 1 | 3 | 3 | 7 | Moderate | No | delivery schedule pre-determined. Staff could deliver samples if required. Lab notifies operator when samples are received. | delivery company notifies staff when pickup is missed | n/a | n/a |
| General | All | | physical | Long term impact of climate change | rising or falling of water levels. Increased or decreased temperature of water. Possible increase of water taking. Maybe more bacteriological contamination | None of these are going to change drastically on an immediate basis. Flow levels are monitored. Regular sampling is conducted on the raw water | 1 | 3 | 2 | 6 | Moderate | No | none in place at this time | Flows are monitored, regular bacti sampling is conducted | n/a | n/a |
| General | All | | physical | Extreme weather | loss of power; destruction of buildings | tower could be bypassed (BWA would be required); less can be done if WTP is destroyed | 1 | 5 | 1 | 7 | Moderate | No | isolation switch in place at the tower that allows the system to run automatically w/o the tower in use | time to plan for extreme weather events | n/a | n/a |
| General | All | | physical | sustained extreme temperatures | increased temperature of water or freezing of system | possible diminished supply. Likely higher water usage in extreme heat. Possible freezing of tower? | 1 | 4 | 1 | 6 | Moderate | No | More manual monitoring or operation; opening of dead ends to keep water flowing in freezing conditions | water quality is measured regularly. Frozen lines can be mitigated by opening some lines to allow flow | n/a | n/a |
| Distribution System | n/a | | Chemical/Biological | backflow | backflow of contaminants into system | backflow preventers required for outside taps only. Only likely to happen due to main breaks or major fire | 1 | 5 | 4 | 10 | High | No | Operating Authority doesn't exercise any control over this. Town does have a backflow bylaw in place | staff can monitor use of water by fire department | n/a | n/a |
| General | All | | all | terrorism | contamination of system | CNL in the area which could be a terrorist target | 1 | 5 | 5 | 11 | High | No | Buildings are locked and alarmed. OA Authority exercises no additional controls. Town has an emergency preparedness plan in place | only annual testing for chemical parameters. Building access is restricted and alarmed | n/a | n/a |
| General | All | | all | vandalism | operations issues, damage to buildings | not as severe as terrorism. Considered to be damaging buildings, graffiti, turning valves. Rock has been thrown through the window before | 2 | 4 | 1 | 7 | Moderate | No | Buildings are locked and alarmed. OA Authority exercises no additional controls. Operational alarms in place will call operations staff | Building access is restricted and alarmed | n/a | n/a |
| General | Regulatory Sampling | | Biological | sample contamination | positive bacteriological readings | staff operate, and collect samples for both WTP and WWTP | 1 | 4 | 3 | 8 | Moderate | No | In most cases, one operator collects WTP samples and the other collects WWTP. If one operator collects both, WTP samples are collected first. Samples are shipped in separate coolers | If positive bacteriological results are found, it can't be determined for certain if operator error caused it. Proper reporting procedures (AWQI) must be followed regardless | n/a | n/a |

| Area | Process Step | Activity or Sub-Process Step | Nature of Hazard | Hazard / Hazardous Event | Potential Effect | Comments | Likelihood (A) | Severity (B) | Detectability (C) | A + B + C | Risk | CCP? | Prevention / Control Measures | Monitoring / Response Notes (use as basis for procedures) | CCP Limits (use as basis for proc's) | CCP Procedure Reference |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| General | IT | n/a | physical | cybersecurity issues (getting control of system) | loss of control of system | system is password protected | 1 | 5 | 2 | 8 | Moderate | No | system is password protected | Not sure if system would alarm for any reason if someone else took control | n/a | n/a |

**Table of Revisions**

| | |
|---|---|
| 4/16/2019 | 3/31/2022 |
| 4/13/2020 | 4/26/2022 |
| 3/31/2021 | |

# Appendix C:

# Removed

# Appendix D:

# Owner/Top Management Endorsement

THE CORPORATION OF THE TOWN OF
LAURENTIAN HILLS
34465 HIGWAY NO. 17, POINT ALEXANDER, R.R. # 1, DEEP RIVER, ONTARIO K0J 1P0

**Moved by:** Bruce Fawkes

**Seconded by:** PBlimkie

Resolution No. 114 -19

Date: 22 May, 2019

**Whereas** Veolia Water Canada Inc is the contracted operating authority for the Chalk River Water Treatment Plant and its distribution system, has on behalf the Town of Laurentian Hills prepared Version 14 of the Drinking Water Quality Management Standard Operational Plan (DWQMS) as required under the Safe Drinking Water Act, 2001

**Now therefore be it resolved** that this Council of the Town of Laurentian Hills endorses the DWQMS Operational Plan dated January 29, 2019 for the Village of Chalk River Drinking Water System as presented by Veolia.

**Carried / Defeated**

**Mayor**

January 25, 2022

# DWQMS Top Management Endorsement

As per DWQMS Element 3-Commitment and Endorsement, Veolia Water Canada is committed to an effective Quality Management System by

a) Ensuring that a QMS in in place that meets the requirements of the Standard
b) Ensuring that the Operating Authority is aware of all applicable legislative and regulatory requirements
c) Communicating the QMS according to the procedure for communications, and
d) Determining, obtaining, or providing the resources needed to maintain and continually improve the QMS

As Top Management, the signature below indicates commitment to the Quality Management system for Chalk River, Moosonee and West Grey (Durham and Neustadt)

Larry Cook
VP Operations

**Veolia Water Canada Inc.**
200 Eastport Blvd
Hamilton, ON L8H 7S4
905-521-1988
www.Veolianorthamerica.com

# Appendix E:

# Emergency Contact List(s)

# Chalk River Drinking Water System Emergency Contacts

**EMERGENCY CONTACT LIST**

| | | |
|---|---|---|
| Veolia Water Canada Inc. | Dave Ethier, ORO/OIC | 613-589-2161 (Office)<br>613-639-9077 (Cell) |
| Veolia Water Canada Inc. | Dan Danis, Operator | 613-589-2161 (Office)<br>613-585-9077 (Cell) |
| Veolia Water Canada Inc. | Greg Prangley, Project Mgr | 905-975-8669 (Cell) |
| Veolia Water Canada Inc. | Larry Cook, Interim VP of Operations | 1-763-459-0378 (Cell) |
| Veolia Environmental Manager (reporting incidents) | Holly Weatherhead | 937-665-1574 (office)<br>937-603-4633 (cell) |
| Veolia H&S Manager | Shane Calvert | 317-318-3615 (cell) |
| Town of Laurentian Hills | Public Works office<br>Scott Loos, PW Supervisor<br>Sherry Batten, CAO | 613-584-3865<br>613-401-5611 (Cell)<br>613-584-3114 (office) |
| Capital Controls | Ottawa Office<br>Michel Boucher | 613-248-1999 (Office)<br>819-923-8166 (direct) |

**GOVERNMENT CONTACT LIST**

| | | |
|---|---|---|
| Ministry of the Environment, Conservation and Parks (MECP) | Spills Action Centre | (T) 1-800-268-6060<br>(F) 1-800-268-6061 |
| MECP | Area Office | 1-800-860-2195 |
| Police, Fire Ambulance | General | 911 |
| Medical Officer of Health | Support Staff | 613-732-3629 |
| Ministry of Labour (Ottawa) | General Inquiry | 1-613-228-8050<br>1-800-267-1916 |
| MTO (Regional or District Office), Ottawa | General Inquiry | 1-888-362-1770 |

**ADDITIONAL CONTACTS**

| Name | Contact Name | Phone No. |
|---|---|---|
| Bell Canada (phone/internet) | General Inquiry | 310-BELL (2355) |
| Brenntag (HFS Acid, sodium hypochlorite, soda ash) | | 514-636-9230 |
| Caduceon Laboratories | | 613-526-0123 |
| Kemira (PAX-XL) | Customer Service | 514-913-6691 |
| Metcon | Service | 905-738-2355 |
| SCG Flowmetrix (flowmeters) | | 416-427-8483 |
| Northland Chemicals (polymer) | | 905-676-1777 |
| Hach | Service | 450-435-5091 |
| Hydro (check Hydro account file at WWTP | | 1-800-434-1235 |

# Appendix F:

# QMS Policy

# Quality Management Policy

**EFFECTIVE DATE: May 19, 2020**

**TO BE REVISED: As required**

Veolia Water Canada Inc. (Veolia Canada), on behalf of the Corporation of the Town of Laurentian Hills, is committed to supplying a safe, consistent drinking water supply while maintaining strict adherence to all applicable legislative and regulatory requirements. We strive to achieve these goals through the implementation of a management system comprised of policies, procedures, instructions and forms that demonstrate risk-based treatment process, evaluation, staff competency, open communication, workplace safety, and appropriate contingency/emergency response procedures.

Together, the Corporation of the Town of Laurentian Hills and Veolia Canada are committed to:

- Managing and operating the drinking water systems in a responsible manner in accordance with documented quality management policies and procedures.
- Providing the customer with clean, safe drinking water.
- Maintaining and continually improving each quality management system.
- Complying with applicable regulations and legislation

The Town and Operating Authority are committed to accomplishing our goals through the dedication, support and participation of all, and through the maintenance and continual improvement of the Quality Management Systems.