



Township of Chapleau
Drinking Water System

OPERATIONAL PLAN

for the Drinking Water Distribution System

Revision 6

November 30th, 2020

This Operational Plan defines and documents the Quality Management System (QMS) for the Township of Chapleau. It sets out the policies and procedures with respect to quality management in accordance with the requirements of the Province of Ontario's Drinking Water Quality Management Standard (DWQMS).

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4 Quality Management System Representative

All personnel have a role and associated responsibilities within the Township of Chapleau Drinking Water Distribution System's QMS.

The CAO is appointed as QMS Representative.

The QMS Rep is responsible for:

- Administering the QMS by ensuring processes and protocols needed for the QMS are established and maintained,
- Reporting on QMS performance and identifying opportunities for improvement,
- Ensuring that current versions of documents related to the QMS are in use,
- Promoting awareness of the QMS to the Drinking Water Distribution System's ORO and Alternate.
- Ensuring that the ORO and Alternate receive the necessary training.

5 Document and Records Control

Refer to Appendix A for QMS Procedure QMSP-01 Document and Records Control.

6 Drinking Water System

Owner and Operating Authority

The Chapleau Drinking Water System serves a population of approximately 2,150. The Water Treatment Plant (WTP) and the Distribution System are owned by the Township of Chapleau represented by the Mayor. The Operating Authority for the Water Treatment Plant is the Ontario Clean Water Agency (OCWA), and the Operating Authority for the Drinking Water Distribution System is the Township of Chapleau through Public Works Department.

System Description

General Characteristics

The raw water source for the treatment plant is Kebsquasheshing River. The water from Kebsquasheshing River is typically low in turbidity and alkalinity. Temperature fluctuates significantly through the seasons ranging from approximately 3.5 °C in the winter to as high as 25.5 °C during the summer. Bacteriological analysis of the raw water indicates a source of relatively good quality.

Common Fluctuations

Raw water turbidity increases during spring runoff and significant rainfall events. Jar tests are performed when necessary.

Water temperature changes significantly from winter to summer. Warm summer temperatures may result in an increase of taste and odor concerns. No chemical treatment is added in response to taste and odor or temperature changes.

Threats

Potential sources of raw water contamination include:

- spills from boats and snow mobiles
- air crafts landing in river (personal and tourist outfit)
- wastewater spill from industry (lumber mill upstream)
- chemical spill from co-generation plant (upstream), cooling water discharge (use caustic soda and sulfuric acid)
- beaver activity
- train derailment
- chemical spill from electric station
- fire risks at industrial facilities – runoff from firewater concentrated in metals and chemicals
- Upstream and downstream sampling is not deemed necessary at this time. On occasion, samples will be collected for phenols when requested by the Township of Chapleau.

Operational Challenges

Spring and fall turnover is the greatest operational challenge for the Chapleau water treatment plant. The turnover creates higher demands on process operations. It can affect the source waters alkalinity, pH, temperature and turbidity. These changes can occur quickly and require adjustments to chemical dosages

Additional details on the raw water supply and the Water Treatment Plant are included in the “Operational Plan for the Chapleau Water Treatment Facility”.

Details on the Distribution System are included below.

The Chapleau Distribution System is rated as a Class 1 Distribution System. It is constructed primarily of ductile iron, and provides fire protection to the Town as well as drinking water. There are no water storage facilities in the Drinking Water Distribution System, as storage is incorporated within the Water Treatment Plant.

Its main characteristics are as follows:

Length of mains	15.2 km
Number of service connections	847
Number of fire hydrants	77
Number of watermain valves	219

Procedures that are in place to maintain chlorine residuals include flushing by the Township of Chapleau and monitoring of chlorine residuals by OCWA.

Maps of the Distribution System are available at the Municipal Office on the Geographic Information System (GIS) software.

The above-noted Distribution System description is reviewed and updated as required.

7 Risk Assessment

Refer to Appendix B for QMS Procedure QMSP-02 Risk Assessment and Risk Assessment Outcomes.

8 Risk Assessment Outcomes

Refer to Appendix B for Summary of Risk Assessment Outcomes.

9 Organizational Structure, Roles, Responsibilities and Authorities

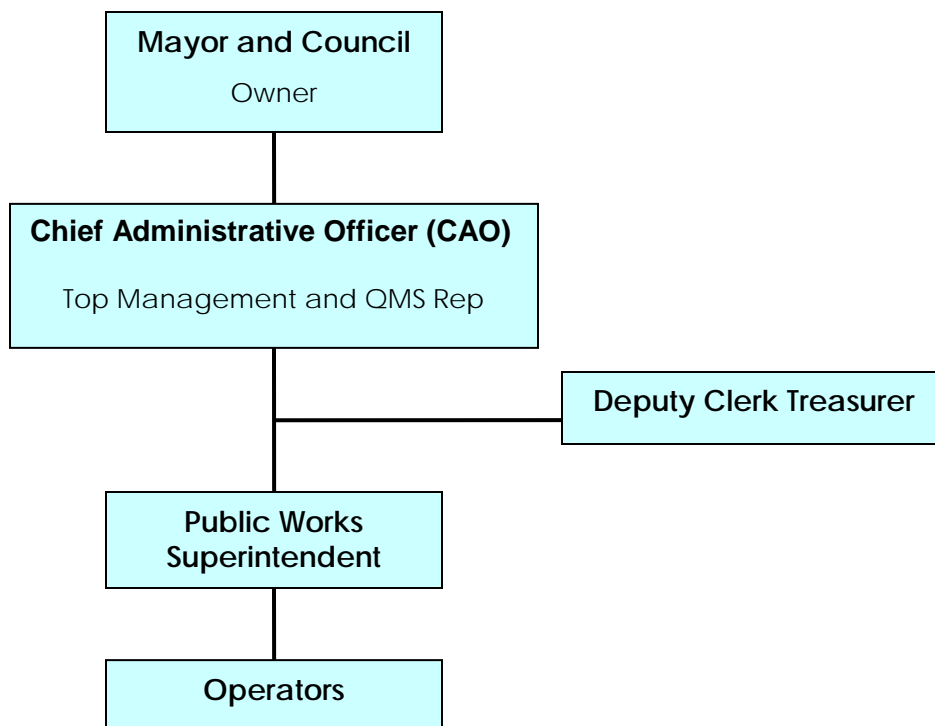
Owner and Operating Authority

The Owner of the Chapleau Drinking Water System is the Township of Chapleau, represented by the Mayor.

The Operating Authority for the Distribution System is the Township of Chapleau represented by the CAO and the Deputy Clerk Treasurer.

Organizational Structure

The organizational structure for the Corporation of the Township of Chapleau Drinking Water Distribution System is as follows:



QMS Roles, Responsibilities and Authorities

Responsibilities for implementing and maintaining individual elements of the QMS are outlined in the QMS Procedures referenced throughout this Operational Plan.

Specific QMS-related roles, responsibilities and authorities of the Owner and the Operating Authority personnel are summarized in the table below.

Position	Roles, Responsibilities and Authorities
Owner - Mayor and Council	<ul style="list-style-type: none"> • Meet and discuss with the CAO regarding all QMS-related functions • Provide approval when required
Operating Authority - Chief Administration Officer (Top Management, and QMS Rep)	<ul style="list-style-type: none"> • Reports to Mayor and Council • Performs all statutory, operational and advisory functions according to legislation and enabling by-laws • Develops, implements and maintains the municipal emergency management program • Works closely with OCWA in the operation of the Township’s water and wastewater treatment facilities and administers contractual matters • Has the responsibilities of Top Management and QMS Representative • Has the responsibility to undertake the Management Review

Position	Roles, Responsibilities and Authorities
Operating Authority - Deputy Clerk Treasurer	<ul style="list-style-type: none"> • Assist the CAO with any activities as required
Operating Authority - Public Works Superintendent	<ul style="list-style-type: none"> • Reports to the CAO • Ensure the Drinking Water Distribution System is running accordingly • Authority to manage the Water Distribution System operations • Provides advice and guidance to Council on the development of plans, priorities and policies • Plans, organizes and assigns work of crews and discusses plans and priorities with crew members • Manages Public Works section within approved budgets • Manages inventory of equipment, supplies and materials required for maintenance and construction programs • Has the responsibility of Overall Responsible Operator (ORO) and Operator-In-Charge (OIC) • Has the responsibility for participating in the Management Review
Operating Authority - Operators	<ul style="list-style-type: none"> • Perform day-to-day activities to maintain the integrity of the Drinking Water Distribution System • Acts as OIC or ORO in the absence of the Public Works Superintendent, where certification exists

10 Competencies

Required competencies

Under SDWA, 2002 the regulation O. Reg. 128/04 outlines the requirement for the certification of Water Treatment and Water Distribution Operators.

The competencies required for personnel whose work directly affects drinking water quality are presented below:

Position	Required Competencies
CAO / QMS Rep / Top Management	<ul style="list-style-type: none"> • Valid Driving Licence • First Aid/CPR • WHMIS
Deputy Clerk Treasurer	<ul style="list-style-type: none"> • Valid Driving Licence • First Aid/CPR • WHMIS
Public Works	<ul style="list-style-type: none"> • Valid Driving Licence

Superintendent	<ul style="list-style-type: none"> • First Aid/CPR • WHMIS
Operator	<ul style="list-style-type: none"> • Level 1 Certification (at least one operator) • Confined Space Training • Valid Driving Licence • First Aid/CPR • WHMIS

Activities to develop and maintain these competencies

The Public Works Superintendent is responsible for ensuring each operator has a current Level 1 Certification. In addition, certification expiry dates are monitored by the Public Works Superintendent.

The Public Works Superintendent establishes the training needs for personnel to maintain certification. A training program is established and documented. Record of all training and Continuing Education Units (CEU) are kept by the Public Works Superintendent.

Activities to ensure personnel are aware of the relevance of their duties

In addition to the on-going training, day-to-day and on-call duties on the Drinking Water Distribution System provide operators with hands-on experience of the relevance of their duties. All new staff members are provided orientation.

11 Personnel Coverage

Refer to Appendix C for QMS Procedure QMSP-03 Personnel Coverage.

12 Communications

Refer to Appendix D for QMS Procedure QMSP-04 Communications.

13 Essential Supplies and Services

Refer to Appendix E for QMS Procedure QMSP-05 Essential Supplies and Services.

14 Review and Provision of Infrastructure

Refer to Appendix F for QMS Procedure QMSP-06 Review and Provision of Infrastructure.

The capital replacement plan will consider the outcomes of the Risk Assessment document under Element 8.

15 Infrastructure Maintenance, Rehabilitation and Renewal

The Township of Chapleau maintains a program of scheduled inspection and maintenance of infrastructure, which includes both emergency fixes and long-term forecasting.

All activities are recorded. Records are maintained as per QMS Procedure QMSP-01 Document and Records Control (see Appendix A).

A summary of the Distribution System activities is outlined below:

- a. Maintain Chlorine residual: flushing program
- b. Repair of water mains and service connections
- c. Thawing of service connections
- d. Maintenance of fire-hydrants: inspection, repair, repaint
- e. Exercising of valves
- f. Respond to customer inquiries (such as low pressure; taste and/or odor; etc.)
- g. The Municipal Asset Management Plan (AMP) provides a long-term forecast of infrastructure needs, and will be updated to reflect infrastructure maintenance, rehabilitation and renewal.

The Public Works Superintendent monitors the effectiveness of these activities on an on-going basis and makes adjustments as required. Once a year, the CAO prepares a summary of the maintenance, rehabilitation and renewal activities. This summary is communicated to the owner as a result of the annual Management Review. The effectiveness of the overall maintenance program is discussed at the Management Review meeting.

16 Sampling, Testing and Monitoring

Refer to Appendix G for QMS Procedure QMSP-07 Sampling, Testing and Monitoring.

17 Measurement and Recording Equipment Calibration and Maintenance

Refer to Appendix L for WMS Procedure QMSP-11 Measurement and Recording Equipment Calibration and Maintenance.

All calibration activities are performed by OCWA as the operating authority for the Water Treatment Plant. The procedure for calibration and maintenance of measurement and recording equipment is part of the Operational Plan for the Chapleau Water Treatment Facility prepared by OCWA. The Distribution System does not include measurement and/or recording equipments that control the quality of the finished drinking water.

18 Emergency Management

Refer to Appendix H for QMS Procedure QMSP-08 Emergency Management.

19 Internal Audits

Refer to Appendix I for QMS Procedure QMSP-09 Internal Audits.

20 Management Review

Refer to Appendix J for QMS Procedure QMSP-10 Management Review.

21 Continual Improvement

In conjunction with the Internal Audit and Management Review processes documented above, the Township of Chapleau uses corrective actions to continuously improve its QMS. Through these processes, areas of concern as well as opportunities for improvement are identified. Best management practices are reviewed every thirty-six months during the Management Review.

Identified non-conformities are investigated to determine the cause, actions regarding correction of the non-conformity and prevention of recurrence are documented, and a review of the action taken to correct the non-conformity is undertaken to verify that they are implemented and are effective in correcting and preventing recurrence. A similar process is used to identify and implement Preventive Actions to eliminate occurrence of potential non-conformities in the QMS. This includes reviewing potential non-conformities that are identified to determine if preventive actions may be necessary, documenting the outcome of the review including actions taken to prevent non-conformity from occurring and reviewing the actions taken to verify that they are implemented and effective in preventing the occurrence of the non-conformity.

Revision History of the Operational Plan (main body of the text)

Date	Revision	Description of Revision
January 1, 2010	0	Operational Plan issued
June 15, 2011	1	Operational Plan revised following CGSB audit. CGSB issued 8 Corrective Action Records (CARs) on November 15, 2010: #953, 954, 955, 956, 957, 958, 959, 960. Corrective actions were made by December 15, 2010 and approved by CGSB on January 19, 2011. The numbering of the appendices was modified to include the procedure "Sampling, Testing and Monitoring". Several procedures were modified; the changes are detailed in the approved CARs. The entire Operational Plan was updated and consolidated.
November 23, 2012	2	The appendix K "Operational Plan Revision History" was removed, and the revision history table was added to the main body of the text. This reflects the fact that the record of the revision history is kept separately for the main body of the text, and for each individual procedure.
October 2 nd , 2017	3	Element 6 – Drinking Water System was updated to summarize OCWA policies, Element 16 – Sampling, Testing and Monitoring and Appendix G were updated to summarize OCWA policies, Element 17 – Measurement and Recording Equipment Calibration and Measurement was updated and Appendix L was created to summarize OCWA policies.
September 5 th , 2019	4	Updated Element 6 – Drinking Water System updated to include a description of the procedures that are in place to maintain chlorine residuals, Element 9 - include alternate ORO and PWS requirement to attend Management Meetings, and Element 21 – Continual Improvement was updated.
November 10 th , 2019	5	Updated Element 15 to include a reference to long-term plans for rehabilitation
November 30 th , 2020	6	Updated 10 to remove the requirement for the PWS to have Level 1 Certification as ORO services will be contracted from OCWA.