

OPERATIONAL PLAN


For the Mattawa Drinking Water System




This Operational Plan is designed for the exclusive use of the system(s) specified in this Operational Plan.

This Operational Plan has been developed with OCWA's operating practices in mind and utilizing OCWA personnel to implement it.

Any use which a third party makes of this Operational Plan, or any part thereof, or any reliance on or decisions made based on information within it, is the responsibility of such third parties. OCWA accepts no responsibility for damages, if any, suffered by any third party as a result of decisions made or actions taken based on this Operational Plan or any part thereof.

 Ontario Clean Water Agency	OPERATIONAL PLAN Mattawa Drinking Water System	QEMS Doc: OP-ToC Issue Date: 2024-12-02 Pages: 1 of 1
TABLE OF CONTENTS		
Reviewed by: PCT	Approved by: Senior Operations Manager	

OP-01	OCWA's Quality & Environmental Management System (QEMS)
OP-02	Quality & Environmental Management System Policy
OP-03	Commitment & Endorsement of OCWA's QEMS & Operational Plan
OP-03A	Signed Commitment and Endorsement
OP-04	Quality Management System Representative
OP-05	Document and Records Control
OP-05A	Document and Records Control Locations
OP-06	Drinking Water System
OP-07	Risk Assessment
OP-08	Risk Assessment Outcomes
OP-08A	Summary of Risk Assessment Outcomes
OP-09	Organizational Structure, Roles, Responsibilities & Authorities
OP-09A	Organizational Structure
OP-10	Competencies
OP-11	Personnel Coverage
OP-12	Communications
OP-13	Essential Supplies and Services
OP-14	Review and Provision of Infrastructure
OP-15	Infrastructure Maintenance, Rehabilitation and Renewal
OP-16	Sampling, Testing and Monitoring
OP-17	Measurement and Recording Equipment Calibration and Maintenance
OP-18	Emergency Management
OP-19	Internal QEMS Audits
OP-20	Management Review
OP-21	Continual Improvement
Schedule "C"	MECP's Director's Directions <i>Minimum Requirements for Operational Plans</i>

	<p style="text-align: center;">OPERATIONAL PLAN Mattawa Drinking Water System</p>	<p>QEMS Proc.: OP-01 Rev Date: 2024-06-17 Rev No: 7 Pages: 1 of 2</p>
QUALITY & ENVIRONMENTAL MANAGEMENT SYSTEM (QEMS)		
Reviewed by: PCT	Approved by: Senior Operations Manager	

1. Purpose

To document OCWA's Quality & Environmental Management System (QEMS). This Operational Plan defines and documents the QEMS for the Mattawa Drinking Water System operated by the Ontario Clean Water Agency (OCWA). It sets out the OCWA's policies and procedures with respect to quality and environmental management in accordance with the requirements of the Province of Ontario's Drinking Water Quality Management Standard (DWQMS).

2. Definitions

Drinking Water Quality Management Standard (DWQMS) – has the same meaning as Quality Management Standard for Drinking Water Systems approved under section 21 of the Safe Drinking Water Act (SDWA).

Operational Plan – means the operational plan required by the Director's Direction.

Quality & Environmental Management System (QEMS) – a system to:

- a) Establish policy and objectives, and to achieve those objectives; and
- b) Direct and control an organization with regard to quality.


Ministry - means the Ontario government ministry responsible for the administration of the SDWA.

3. Procedure

- 3.1 The Mattawa Drinking Water System is owned by the Corporation of the Town of Mattawa. OCWA is the contracted Operating Authority for the Mattawa Water Drinking Water System.
- 3.2 OCWA's Quality & Environmental Management System (QEMS) is structured and documented with the purpose of:
 1. Establishing policy and objectives with respect to the effective management and operation of water/wastewater facilities;
 2. Understanding and controlling the risks associated with the facility's activities and processes;
 3. Achieving continual improvement of the QEMS and the facility's performance.
- 3.3 The Operational Plan for the facility listed above fulfils the requirements of the MECP's DWQMS. The 21 QEMS Procedures within this Operational Plan align with the 21 elements of the DWQMS.


4. Related Documents

Ontario's Drinking Water Quality Management Standard, as amended from time to time
All QEMS Procedures and Documents referenced in this Operational Plan

 Ontario Clean Water Agency	OPERATIONAL PLAN Mattawa Drinking Water System	QEMS Proc.: OP-01 Rev Date: 2024-06-17 Rev No: 7 Pages: 2 of 2
QUALITY & ENVIRONMENTAL MANAGEMENT SYSTEM (QEMS)		
Reviewed by: PCT	Approved by: Senior Operations Manager	

5. Revision History

Date	Revision #	Reason for Revision
2013-07-26	2	Added revision history, removed RRAM I.D. from header.
2014-06-05	3	Removed nonsensical diagrams, reissued for approval.
2015-08-25	4	Revised and Reissued for 2015.
2016-08-16	5	Revised and Reissued for 2016.
2019-07-22	6	DWQMS-1 procedure renamed OP-01 as per OCWA template. Information within OP-01 was originally set out in DWQMS-1 of Mattawa DWS Operational Plan (last revision 5 dated 2016-08-25). New Purpose, Definitions, Procedure, Related Documents and separate Revision History sections. Addition of new wording (s. 3.3) to clarify that the Mattawa DWS Operational Plan now aligns with the 21 elements of the DWQMS. Updated MOECC to MECP.
2024-06-17	7	Procedure updated definition of DWQMS, added definition of Ministry as the Ontario government ministry responsible for drinking water and environmental legislation to alleviate need for future revisions if/when the Ministry experiences name changes, added “as amended from time to time directly following reference to Ontario’s DWQMS to point to the most current version of the document, removed watermark.

 Ontario Clean Water Agency	<p align="center">OPERATIONAL PLAN</p> <p align="center">Mattawa Drinking Water System</p>	QEMS Proc.: OP-02 Rev Date: 2024-06-18 Rev No: 7 Pages: 1 of 2
<p align="center">QUALITY & ENVIRONMENTAL MANAGEMENT SYSTEM (QEMS) POLICY</p>		
Reviewed by: PCT	Approved by: Senior Operations Manager	

1. Purpose

To document a QEMS Policy that provides the foundation for OCWA's Quality & Environmental Management System.

2. Definitions

Quality Management System Policy – means the policy described in Element 2 developed for the Subject System or Subject Systems

3. Procedure

- 3.1 The Ontario Clean Water Agency, its Board of Directors, Officers and entire staff are committed to the principles and objectives set out in our QEMS Policy.

OCWA's Policy is to:


- Deliver safe water and wastewater services that protect public health, the environment, and the sustainability of communities.
- Comply with applicable legislation and regulations.
- Promote client, consumer and stakeholder confidence through service excellence, effective communications and reporting.
- Train staff on their QEMS responsibilities.
- Maintain and continually improve the QEMS.

Originally issued as Environmental Policy on June 8, 1995

Last revised, approved by OCWA's Board of Directors on April 4, 2024

(This policy is annually reviewed)

- 3.2 Our Board of Directors, Officers and entire staff will act to ensure the implementation of this Policy and will monitor progress of the Quality & Environmental Management System (QEMS).
- 3.3 OCWA's QEMS Policy is readily communicated and available to all OCWA personnel, through OCWA's intranet. The Owner and members of the public can access the policy through OCWA's public website (www.ocwa.com). A hardcopy of the QEMS Policy is posted as specified in the OP-05 Document and Records Control procedure.
- 3.4 Essential suppliers and service providers are advised of OCWA's QEMS Policy as per the OP-13 Essential Supplies and Services procedure.

 Ontario Clean Water Agency	OPERATIONAL PLAN Mattawa Drinking Water System	QEMS Proc.: OP-02 Rev Date: 2024-06-18 Rev No: 7 Pages: 2 of 2
QUALITY & ENVIRONMENTAL MANAGEMENT SYSTEM (QEMS) POLICY		
Reviewed by: PCT	Approved by: Senior Operations Manager	

3.5 Corporate Compliance coordinates the annual review and approval of the QEMS Policy by the Board of Directors and communicates the approval to all OCWA employees via an electronic communication.


3.6 The current version of the policy indicates the date of the last revision and that the policy is annually reviewed. Electronic and hard-copy documents that include the QEMS Policy will only be required to be updated in years when the Policy has been revised. A complete review/revision history of the QEMS Policy (documenting the annual policy review and/or revision approval date) is accessible to all staff on OCWA's intranet and is available upon request for external stakeholders.

4. Related Documents

Current QEMS Policy (Posted on OCWA's intranet and internet)
 QEMS Policy Revision History (Posted on OCWA's intranet)
 OP-05 Document and Records Control
 OP-13 Essential Supplies and Services

5. Revision History

Date	Revision #	Reason for Revision
2013-07-26	2	Procedure reissued. Revised policy to duplicate written policy circulated on the website and posted at various locations. Removed reference to Quality Management System Policy Statement and Communications Policy, added revision history to document and removed RRAM I.D.
2014-06-05	3	Minor policy wording change, reissued for approval.
2015-08-25	4	Replaced approval and Date, reissued as revision #4.
2016-08-16	5	Revised and reissued as revision #5.
2019-07-22	6	DWQMS-2 procedure renamed OP-02 as per OCWA template. Information within OP-02 was originally set out in DWQMS-2 of Mattawa DWS Operational Plan (last revision 5 dated 2016-08-25). New sections: Purpose, Definitions, Procedure, Related Documents and a separate Revision History. Minor revisions to wording in s. 3.3 to reference location of posted copy of the policy. Added sections on how annual policy review is conducted (s. 3.5 and s. 3.6) and reference to OP-13 ESS (s. 3.4). The full revision history for the QEMS policy is available on OCWA's intranet.
2024-06-18	7	The first bullet of the QEMS Policy (approved in 2016) was revised to align with OCWA's updated Mission statement. s. 3.3 and 3.6 were modified to add information/clarify how to access the QEMS Policy and the Policy revision history document, removed watermark.

 Ontario Clean Water Agency	<p style="text-align: center;">OPERATIONAL PLAN</p> <p style="text-align: center;">Mattawa Drinking Water System</p>	QEMS Proc.: OP-03 Rev Date: 2024-11-28 Rev No: 7 Pages: 1 of 2
COMMITMENT AND ENDORSEMENT		
Reviewed by: PCT	Approved by: Senior Operations Manager	

1. Purpose

To document the endorsement of the Operational Plan for the Mattawa Drinking Water System by OCWA Top Management and the Corporation of the Town of Mattawa (Owner) and to set out when re-endorsement would be required.

2. Definitions

Top Management – a person, persons or a group of people at the highest management level within an Operating Authority that makes decisions respecting the QMS and recommendations to the Owner respecting the Subject System or Subject Systems

3. Procedure

3.1 The Operational Plan is provided to OCWA Top Management and to the Owner for endorsement. The signed written endorsement is presented in Appendix OP-03A. At a minimum, two members of Top Management must endorse the Operational Plan; however, the Operational Plan is made available to all members of Top Management in the specified document control location (refer to OP-05 Document and Records Control). Endorsement by OCWA's Top Management is represented by Safety, Process and Compliance Manager and Regional Hub Manager.

Endorsement by the Owner is represented by the CAO/Treasurer and Mayor.


3.2 Any major revision of the operational plan will be re-endorsed by OCWA Top Management and the Owner. Major revisions include:

1. A revision to OCWA's QEMS Policy;
2. A change to both representatives of the facility's Top Management and/or both of the Owner's representatives that endorsed the Operational Plan;
3. A modification to the drinking water system processes/components that would require a major change to the description in OP-06 Drinking Water System;
4. The addition of a drinking water subsystem owned by the same Owner to this operational plan.

Any other changes would be considered a minor change and would not require the Operational Plan to be re-endorsed.


4. Related Documents

OP-03A Signed Commitment and Endorsement
 OP-05 Document and Records Control
 OP-06 Drinking Water System

 Ontario Clean Water Agency	<p style="text-align: center;">OPERATIONAL PLAN</p> <p style="text-align: center;">Mattawa Drinking Water System</p>	QEMS Proc.: OP-03 Rev Date: 2024-11-28 Rev No: 7 Pages: 2 of 2
COMMITMENT AND ENDORSEMENT		
Reviewed by: PCT	Approved by: Senior Operations Manager	

5. Revision History

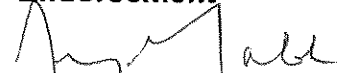
Date	Revision #	Reason for Revision
2013-07-26	2	Added revision history, removed RRAM I.D. from header. *Note: original signed copy available for review as per Element 5: Document and Records Control.
2014-06-05	3	Replaced retired administrator with current. Re-signed and reissued for approval.
2015-08-25	4	Replaced retired administrator with acting current. Re-signed and reissued for approval. Changed QMS approver to QMS rep.
2016-08-16	5	Changed department title, resigned and reissued.
2019-07-19	6	DWQMS-3 procedure renamed OP-03 as per OCWA template. Procedure provides information on who from Top Management endorses the Operational Plan; when owner re-endorsement is sought and 'criteria' as to what is considered a major revision to the Plan. Element 3 of Mattawa DWS Operational Plan (last revision 5 dated 2016-08-25) was incorporated into Appendix OP-03A which also includes the Owner and Top Management sign-off section. Updated step 3.1 to clarify representatives of the Owner who are responsible for re-endorsement of the Operational Plan and changed step 3.2.3 by adding "major" changes in the system description will require re-endorsement of the Plan.
2024-11-28	7	Removed watermark

 Ontario Clean Water Agency	OPERATIONAL PLAN Mattawa Drinking Water System	QEMS Doc: OP-03A Rev Date: 2024-10-24 Rev No: 2 Pages: 1 of 1
SIGNED COMMITMENT AND ENDORSEMENT		

This Operational Plan sets out the framework for OCWA's Quality & Environmental Management System (QEMS) that is specific and relevant to your drinking water system(s) and supports the overall goal of OCWA and the Corporation of the Town of Mattawa (Owner) to provide safe, cost-effective drinking water through sustained cooperation. OCWA will be responsible for developing, implementing, maintaining and continually improving its QEMS with respect to the operation and maintenance of the Mattawa Drinking Water System and will do so in a manner that ensures compliance with applicable legislative and regulatory requirements.

Through the endorsement of this Operational Plan, the Owner commits to work with OCWA to facilitate this goal.

**OCWA Top Management
Endorsement**



Jeremy Galda
Safety, Process and Compliance
Manager, North Eastern Ontario
Regional Hub

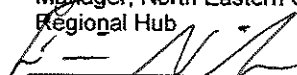
Date

Owner Endorsement



Paul Lapierre
CAO-Treasurer

Nov 5/24
Date



Eric Nielson
Regional Hub Manager, North Eastern
Ontario Regional Hub

Date


Nov 20/24



Raymond Belanger
Mayor

Nov 15, 24
Date

The endorsement above is based on the Operational Plan that was current as of the revision date of this document (OP-03A).

 Ontario Clean Water Agency	OPERATIONAL PLAN Mattawa Drinking Water System	QEMS Proc.: OP-04 Rev Date: 2024-11-29 Rev No: 7 Pages: 1 of 2
QUALITY & ENVIRONMENTAL MANAGEMENT SYSTEM (QEMS) REPRESENTATIVE		
Reviewed by: PCT	Approved by: Senior Operations Manager	

1. Purpose

To identify and describe the specific roles and responsibilities of the QEMS Representative(s) for the Mattawa Drinking Water System.

2. Definitions

None

3. Procedure

3.1 The role of QEMS Representative for the Mattawa Drinking Water System is the Process and Compliance Technician (PCT). The Safety, Process and Compliance Manager (or alternate PCT) will act as an alternate QEMS Representative when required.

3.2 The QEMS Representative is responsible for:

- Administering the QEMS for the Mattawa Drinking Water System by ensuring that processes and procedures needed for the facility's QEMS are established and maintained;
- Reporting to Top Management on the facility's QEMS performance and identifying opportunities for improvement;
- Ensuring that current versions of documents related to the QEMS are in use;
- Promoting awareness of the QEMS to all operations personnel; and
- In conjunction with Top Management, ensuring that operations personnel are aware of all applicable legislative and regulatory requirements that pertain to their duties for the operation of the system.

4. Related Documents


None

5. Revision History

Date	Revision #	Reason for Revision
2013-07-26	2	Added revision history, removed all references to RRAM, listed (by name) the QMS rep (or designate), revised Policy and Responsibilities sections.
2014-06-05	3	Removed QMS Designate and named two QMS reps. Removed "Responsibilities" section due to redundancy, added Job Descriptions to references, reissued for approval.
2015-08-25	4	Removed Job Descriptions in references, changed "approver" to QMS Rep, removed Public Works Superintendent involvement.
2016-08-16	5	Updated and reissued.

 Ontario Clean Water Agency	<p align="center">OPERATIONAL PLAN</p> <p align="center">Mattawa Drinking Water System</p>	QEMS Proc.: OP-04 Rev Date: 2024-11-29 Rev No: 7 Pages: 2 of 2
QUALITY & ENVIRONMENTAL MANAGEMENT SYSTEM (QEMS) REPRESENTATIVE		
Reviewed by: PCT	Approved by: Senior Operations Manager	

Date	Revision #	Reason for Revision
2019-07-19	6	DWQMS-4 procedure renamed OP-04 as per OCWA template. Information within OP-04 was originally set out in DWQMS-4 of Mattawa DWS Operational Plan (last revision 5 dated 2016-08-25). New Purpose, Definitions, Procedure, Related Documents and separate Revision History sections. Change to responsibilities: Mattawa staff no longer considered QEMS Representative and SPC Manager to act as alternate as required (s. 3.1); added wording to clarify shared responsibilities for Top Management and QEMS Representative to ensure operations personnel are aware of applicable legislative and regulatory requirements (s. 3.2).
2024-11-29	7	Removed watermarks

	<p style="text-align: center;">OPERATIONAL PLAN Mattawa Drinking Water System</p>	<p>QEMS Proc.: OP-05 Rev Date: 2024-09-24 Rev No: 9 Pages: 1 of 5</p>
DOCUMENT AND RECORDS CONTROL		
Reviewed by: PCT	Approved by: Senior Operations Manager	

1. Purpose

To describe how OCWA's QEMS documents are kept current and how QEMS documents and records are kept legible, readily identifiable, retrievable, stored, protected, retained and disposed of. Applies to QEMS Documents and QEMS records pertaining to the Mattawa Drinking Water System, as identified in this procedure.

2. Definitions

Document – includes a sound recording, video tape, film, photograph, chart, graph, map, plan, survey, book of account, and information recorded or stored by means of any device

Record – a document stating results achieved or providing proof of activities performed

QEMS Document – any document required by OCWA's QEMS as identified in this procedure

QEMS Record – any record required by OCWA's QEMS as identified in this procedure

Controlled – managed as per the conditions of this procedure


Retention Period – length of time that a document or record must be kept; starts from the date of issue for QEMS records or from the point of time when a QEMS document is replaced by a new or amended document

3. Procedure

- 3.1 Documents and records required by OCWA's QEMS and their locations are listed in Appendix OP-05A Document and Records Control Locations.
- 3.2 Internally developed QEMS documents and QEMS records (whenever possible) are generated electronically to ensure legibility and are identified through a header/title and issue date. Handwritten records must be legible and permanently rendered in ink or non-erasable marker.
- 3.3 Controls for the Operational Plan include the use of an authorized approval and a header on every page that includes a title, alpha-numeric procedure code, revision date, revision number and page numbers. A revision history is also included at the end of each procedure.

The authorized personnel responsible for the review and approval of this Operational Plan are:

Review	PCT (QEMS Representative)
Approval	Senior Operations Manager or SPC Manager

 Ontario Clean Water Agency	<p style="text-align: center;">OPERATIONAL PLAN Mattawa Drinking Water System</p>	QEMS Proc.: OP-05 Rev Date: 2024-09-24 Rev No: 9 Pages: 2 of 5
DOCUMENT AND RECORDS CONTROL		
Reviewed by: PCT	Approved by: Senior Operations Manager	

The QEMS Representative ensures that updated documents are provided to the above authorized personnel for review or approval prior to issuance.

Authorized personnel authenticate their review/approval of this Operational Plan via email and tracking updates/changes with the Summary of Findings.

- 3.4 The QEMS Representative is responsible for ensuring that current versions of QEMS documents are being used at all times. Current QEMS documents and records are readily accessible to operations personnel and to internal and external auditors/inspectors at established document control locations. The currency of internal documents is ensured by comparing the date on the document to that of the master hardcopy and/or electronic copy residing in the designated document control location(s) specified in Appendix OP-05A.

Document control locations are established in areas that provide adequate protection to prevent unauthorized use/access, damage, deterioration or loss of QEMS documents and records. Copies of QEMS documents and records located outside of designated control locations are considered uncontrolled.


- 3.5 Access to OCWA's computer network infrastructure is restricted through use of individually-assigned usernames and passwords and local area servers. Network security is maintained by OCWA's Information Technology department through a number of established mechanisms and practices such as daily back-up of files stored on servers, password expiry, limitations on login attempts, multi-factor authentication and policies outlining specific conditions of use.

Access to facility QEMS records contained within internal electronic databases and applications (e.g., Wonderware, OPEX, PDM, WMS) is administered by designated application managers/trustees, requires the permission of Operations Management and is restricted through use of usernames and passwords. Records are protected by means of regular network back-ups of electronic files stored on servers and/or within databases.

Plant SCADA records are maintained as per Appendix OP-05A and are accessible when required. SCADA records are stored on a backed-up hard drive. Operators can retrieve data from the SCADA computer which is password protected. Data can also be retrieved from Wonderware. The SCADA system is located in secured, locked buildings with limited authorized access. The building is equipped with alarm system.

- 3.6 Any employee of the drinking water system may request, (in writing) or verbally to the QEMS Representative, a revision be made to improve an existing internal QEMS document or the preparation of a new document. Written and verbal requests should indicate the reason for the requested change. The need for new or updated documents may also be identified through the Management Review or system audits.

The QEMS Representative communicates any changes made to QEMS documents to relevant operations personnel and coordinates related training (as required). Changes to corporately controlled QEMS documents are communicated and distributed to facility

 Ontario Clean Water Agency	<p align="center">OPERATIONAL PLAN</p> <p align="center">Mattawa Drinking Water System</p>	QEMS Proc.: OP-05 Rev Date: 2024-09-24 Rev No: 9 Pages: 3 of 5
DOCUMENT AND RECORDS CONTROL		
Reviewed by: PCT		Approved by: Senior Operations Manager

QEMS Representatives by OCWA's Corporate Compliance Group through e-mails, memos and/or provincial, regional hub/cluster or facility-level training sessions.


3.7 When a QEMS document is superseded, the hardcopy and the electronic copy of the document (as applicable) are promptly removed from the applicable designated document control locations specified in OP-05A. The QEMS Representative ensures that the hardcopy and electronic copy are disposed of or retained (as appropriate).

3.8 The authorized method for disposal of hardcopy documents and records after the specified retention requirements have been met is shredding.

The authorized method for disposal of electronic documents and records after the specified retention requirements have been met is deleting.


3.9 QEMS documents and records are retained in accordance with applicable regulations and legal instruments. Relevant regulatory and corporate minimum retention periods are as follows:

Type of Document/Record	Minimum Retention Time	Requirement Reference
Operational Plan (OP-01 to OP-21 and appendices, including Schedule "C" – Subject System Description Form) FEP Long term forecast of major infrastructure maintenance, rehabilitation and renewal activities Sampling plan/schedule/ calendar	10 years	Director's Direction under SDWA
Internal QEMS Audit Results	10 years	OCWA Requirement
External QEMS Audit Results	10 years	OCWA Requirement
Management Review Documentation	10 years	OCWA Requirement
Documents/records required to demonstrate conformance with the DWQMS (specifically all the documents/records listed in OP-05A)	3 years*if no specified legislative requirement below*	OCWA Requirement
Log Books or other record-keeping mechanisms	5 years	O. Reg. 128/04
Training Records for water operators and water quality analysts	5 years	O. Reg. 128/04
Operational checks, sampling and testing (e.g., chlorine residuals, turbidity, fluoride, sampling records), microbiological sampling and testing and chain of custodies	2 years	O. Reg. 170/03

	<p style="text-align: center;">OPERATIONAL PLAN Mattawa Drinking Water System</p>	<p>QEMS Proc.: OP-05 Rev Date: 2024-09-24 Rev No: 9 Pages: 4 of 5</p>
DOCUMENT AND RECORDS CONTROL		
Reviewed by: PCT	Approved by: Senior Operations Manager	

Type of Document/Record	Minimum Retention Time	Requirement Reference
Schedule 23 & 24 sampling, chain of custodies and test results	6 years LMR 15 years SMR	O. Reg. 170.03
THM, HAA, nitrates, nitrites and lead program (including pH and alkalinity) sampling, chain of custodies, and test results, Section 11 Annual Reports and Schedule 22 Summary Reports	6 years	O. Reg. 170/03
Sodium sampling, chain of custody and test results and related corrective action records/reports, 60 month fluoride sampling, chain of custody and test results (if the system doesn't fluoridate), Engineering Reports, GUDI/Non-GUDI Reports	15 years	O. Reg. 170/03
Corrective action records/reports for E. Coli, Total Coliforms and bacterial species	2 years	O. Reg. 170/03
Corrective action records/reports for chemical and radiological parameters under SDWA O. Reg. 169/03, pesticides not listed under O. Reg. 169/03 and health-related parameters in an order or approval	6 years (LMR) 15 years (SMR)	O. Reg. 170/03
Flow Meter Calibration Records, Analyzer Calibration Reports Maintenance Records/Work Orders	2 years	O. Reg. 170/03
Records required by or created in accordance with the Municipal Drinking Water Licence (MDWL) or Drinking Water Works Permit (DWWP). Except records specifically referenced in O. Reg. 170/03 or otherwise specified in the MDWL or DWWP.	5 years	MDWL
Ministry forms referenced in the DWWP, including Form 1, Form 2, Form 3 and Director Notifications (applies to forms that have been completed by OCWA as the authorized by the owner)	10 years	DWWP

3.10 The Operational Plan is reviewed for currency by the QEMS Representative during internal/external audit and Management Review processes. Other QEMS-related documents are reviewed as per the frequencies set out in this Operational Plan or as significant changes (e.g., changes in regulatory requirements, corporate policies or operational processes and/or equipment, etc.) occur. QEMS documents and records are reviewed for evidence of control during each internal system audit as per OP-19 Internal QEMS Audits.

 Ontario Clean Water Agency	OPERATIONAL PLAN Mattawa Drinking Water System	QEMS Proc.: OP-05 Rev Date: 2024-09-24 Rev No: 9 Pages: 5 of 5
DOCUMENT AND RECORDS CONTROL		
Reviewed by: PCT	Approved by: Senior Operations Manager	

4. Related Documents

OP-05A Document and Records Control Locations
 OP-19 Internal QEMS Audits
 OP-20 Management Review
 Summary of Findings

5. Revision History

Date	Revision #	Reason for Revision
2013-07-25	2	Procedure reissued. Added Table 1: Designated location for documents and records required by Mattawa's QMS, removed references to RRAM, updated procedure to reflect current hardcopy and electronic practices.
2014-06-05	3	Updated Table 1 to better reflect QMS. Reissued for approval.
2015-08-25	4	Updated "Review and Approval" (removed PW Superintendent).
2016-08-16	5	Minor wording change, updated department title, updated locations of documents, reissued.
2019-07-22	6	DWQMS-5 procedure renamed OP-05 as per OCWA template. Information within OP-05 was originally set out in DWQMS-5 of Mattawa DWS Operational Plan (last revision 5 dated 2016-08-25). Updated to Corporate Template. Procedure issued. Removed previous section 3.9 and updated section 3.8.
2022-03-23	7	Procedure updated. Added: clarity to version control requirements to align with the Director's Directions dated May 2021, detail to the approval process for Operational Plan, clarity on how electronic documents are handled. Updated: the table in section 3.9 (clarified minimum retention time requirements for documents/records required to demonstrate conformance with the DWQMS, added forms required by the MDWL and DWWP, including their minimum retention times and requirement reference).
2024-06-18	8	Procedure updated as follows: added multi factor authentication to 3.5, section 3.9 table revised to include Schedule 23 & 24 records retention times for Large Municipal Residential (LMR) and Small Municipal Resident (SMR) systems, added chain of custody as record for retention for various sampling requirements, lead program clarified to include pH and alkalinity; added GUDI/Non-GUDI Reports, minor wording and type-o's, removed watermark.
2024-09-23	9	Updated raw characteristics to 2023

 Ontario Clean Water Agency	OPERATIONAL PLAN Mattawa Drinking Water System	QEMS Doc: OP-05A Rev Date: 2025-07-14 Rev No: 5 Pages: 1 of 4
DOCUMENT AND RECORDS CONTROL LOCATIONS		
Reviewed by: PCT	Approved by: Senior Operations Manager	

Designated locations for documents and records required by OCWA's QEMS

Type of Document/Record	Designated Document Control Location (HC = Hardcopy, E = Electronic)
Internal QEMS Documents	
Operational Plan (OP-01 to OP-21 and appendices, including Schedule "C" – Subject System Description Form)	E – Maintained on \\ocwfilereg\NEO Collab HC – Mattawa Town Office HC – Mattawa Well House
QEMS Policy	E - OCWA's Sharepoint site and public website HC – Posted at Mattawa Well House
OCWA's Safety Manual	E – OCWA's Sharepoint site
Facility Emergency Plans	E – Maintained on \\ocwfilereg\NEO Collab HC – Mattawa Well House
Corporate Emergency Response Plan (CERP)	E - OCWA's Sharepoint site
Standard Operating Procedures (referenced in Operational Plan and QEMS Procedures)	E – Maintained on \\ocwfilereg\NEO Collab HC – Mattawa Well House
Essential Supplies & Services List	E – Maintained on \\ocwfilereg\NEO Collab HC – Mattawa Well House
Vacation/On-call Schedule	E – Maintained on \\ocwfilereg\NEO Collab
Sampling Schedule	E- Maintained on \\ocwfilereg\NEO Collab HC – Mattawa Well House
Chain of Custody Forms	E- Maintained on \\ocwfilereg\NEO Collab
External QEMS Documents	
Maintenance/equipment manuals	HC – Mattawa Well House
Engineering schematics/plans/drawings	HC – Mattawa Well House
Municipal Drinking Water Licence	E – Maintained on \\ocwfilereg\NEO Collab HC – Mattawa Well House HC – Mattawa Town Office
Drinking Water Works Permit	E – Maintained on \\ocwfilereg\NEO Collab HC – Mattawa Well House HC – Mattawa Town Office
Permit to Take Water	E – Maintained on \\ocwfilereg\NEO Collab HC – Mattawa Well House
Ministry Inspection Reports	E – Maintained on \\ocwfilereg\NEO Collab
Operator certificates	HC – Mattawa Well House
AWWA Standards	E - \\Torwan\PCT\AWWA Standards
Ontario's Watermain Disinfection Procedure	E - https://www.ontario.ca
DWQMS Standard	E - https://www.ontario.ca
ANSI/NSF product registration documentation for Chemicals/Materials Used	HC – Mattawa Well House

DOCUMENT AND RECORDS CONTROL LOCATIONS

Reviewed by: PCT

Approved by: Senior Operations Manager

Type of Document/Record	Designated Document Control Location (HC = Hardcopy, E = Electronic)
Applicable federal and provincial legislation and municipal by-laws	Provincial Online at https://laws-lois.justice.gc.ca/eng/ Federal online at www.laws.justice.gc.ca
Operations Manual	HC – Mattawa Well House
Original Equipment Manuals (OEM)	HC – Mattawa Well House
QEMS Records	
Rounds sheets (in use)	HC – Mattawa Well House
Rounds sheets (completed)	Process data maintained electronically through PDM HC – Mattawa Well House
Facility Operations Logbook(s)	HC – Mattawa Well House E - https://ocwa.erisccloud.com/
Visitor's Logbook	HC – Mattawa Well House
Operator training records	E – Electronic records are maintained in OCWA's Training Summary Database (OPEX)
Maintenance records	E - Maintained through WMS
Internal Calibration records	E - Maintained through WMS
External Calibration records	E – Maintained on \\ocwfilereg\NEO Collab
Chain of Custodies	E – Maintained on \\ocwfilereg\NEO Collab
Laboratory analyses	Electronic reports from Laboratory – Maintained on \\ocwfilereg\NEO Collab E - Maintained through PDM
Additional Sampling records	E – Maintained on \\ocwfilereg\NEO Collab
In-house lab results	E - Maintained through PDM HC – Mattawa Well House
SCADA records (Wonderware, OCWA)	E - Maintained through Wonderware
SCADA records (Plant SCADA, Client Owned)	E – Mattawa Well House
Internal Audit Reports	E – Maintained on \\ocwfilereg\NEO Collab
External Audit Reports	E – Maintained on \\ocwfilereg\NEO Collab
Management Review documentation	E – Maintained on \\ocwfilereg\NEO Collab
Ministry forms referenced in the Drinking Water Works Permit, including Form 1, Form 2, Form 3 and Director Notifications	E – Maintained on \\ocwfilereg\NEO Collab
Summary of Findings Spreadsheet (Preventive/Corrective) records	E - Maintained on \\ocwfilereg\NEO Collab
Internal QEMS Communications	E – Microsoft Outlook E-mail
External QEMS Communications (including essential suppliers and service providers)	E – Microsoft Outlook E-mail E - Maintained on \\ocwfilereg\NEO Collab
Annual Reports	E – Maintained on \\ocwfilereg\NEO Collab HC – Mattawa Town Office



OPERATIONAL PLAN

Mattawa Drinking Water System


QEMS Doc: OP-05A
Rev Date: 2025-07-14
Rev No: 5
Pages: 3 of 4

DOCUMENT AND RECORDS CONTROL LOCATIONS

Reviewed by: PCT


Approved by: Senior Operations Manager

Type of Document/Record	Designated Document Control Location (HC = Hardcopy, E = Electronic)
Summary Reports for Municipalities	E – Maintained on \\ocwfilereg\NEO Collab HC – Mattawa Town Office
AWQI Reports	E – Maintained on \\ocwfilereg\NEO Collab HC – Mattawa Well House HC – Mattawa Town Office
Incidents of Non-Compliance Records	E – Maintained on \\ocwfilereg\NEO Collab
Analysis and Action Plan (AAP) Report	E – Maintained on \\ocwfilereg\NEO Collab
Contingency Plan Review/Test Summary	E – Maintained on \\ocwfilereg\NEO Collab
Infrastructure review (Capital Letter & Capital and Major Maintenance Recommendations Report)	E – Maintained on \\ocwfilereg\NEO Collab
Community complaint records	E – Maintained on \\ocwfilereg\NEO Collab
Call In/Call Back/Call Out Reports	E – Maintained in WMS
Quarterly Operations Report (to the Owner)	E – Maintained on \\ocwfilereg\NEO Collab
Results of emergency test exercises/emergency response debriefs	E – Maintained on \\ocwfilereg\NEO Collab

 Ontario Clean Water Agency	OPERATIONAL PLAN Mattawa Drinking Water System	QEMS Doc: OP-05A Rev Date: 2025-07-14 Rev No: 5 Pages: 4 of 4
DOCUMENT AND RECORDS CONTROL LOCATIONS		
Reviewed by: PCT	Approved by: Senior Operations Manager	

Revision History

Date	Revision #	Reason for Revision
2019-07-22	0	Appendix issued; Table was originally included within DWQMS-5 of the Mattawa DWS Operational Plan (last revision 5 dated 2016-08-25). Added OCWA's safety manual, Emergency Response Plan (corporate), DWWP, MDWL, and updated location of in-house lab results in table 1. Added Safety, Process and Compliance Manager, removed Operations Manager. Updated MOECC to MECP.
2019-09-17	1	Updated location of AWQI reports as they are to be kept at the Well House rather than Town Office.
2021-09-22	2	Updated location of AWQI reports to Town Office, as they are located on site. Updated table to include new eRIS electronic logbook now in use and included hyperlink to location.
2022-03-23	3	Added: exact location of documents/records, clarity on which documents are included under the Operational Plan, new documents/records (Watermain Disinfection Procedure results of emergency test exercises/emergency response debriefs and Ministry forms referenced in the Drinking Water Works Permit, visitor logbook) and clarity to external communications and inspection reports; Removed: reference to QEMS Reference Manual and OCWA's intranet (replaced with OCWA's Sharepoint site). Added row to header to show who reviewed and approved the document.
2024-06-19	4	Appendix updated with MECP revised to Ministry, updated Corporate Emergency Plan (CERP) name, minor wording, removed watermark.
2025-07-14	5	Updated hyperlinks for provincial and federal laws

 Ontario Clean Water Agency	OPERATIONAL PLAN Mattawa Drinking Water System	QEMS Proc.: OP-06 Rev Date: 2025-07-25 Rev No: 15 Pages: 1 of 8
DRINKING WATER SYSTEM		
Reviewed by: PCT	Approved by: Senior Operations Manager	

1. Purpose

To document the following for the Mattawa Drinking Water System:

- The name of the Owner and Operating Authority; and
- Provide a description of the system, including all applicable water sources, treatment system processes and distribution system components.

2. Definitions

Distribution System - means the part of a drinking water system that is used in the distribution, storage or supply of water and that is not part of a treatment system.

Primary Disinfection - means a process or series of processes intended to remove or inactivate human pathogens such as viruses, bacteria and protozoa in water.

Secondary Disinfection - means a process or series of processes intended to provide and maintain a disinfectant residual in a drinking water system's distribution system, and in plumbing connected to the distribution system, for the purposes of:

- (a) protecting water from microbiological re-contamination;
- (b) reducing bacterial regrowth;
- (c) controlling biofilm formation;
- (d) serving as an indicator of distribution system integrity; and

includes the use of disinfectant residuals from primary disinfection to provide and maintain a disinfectant residual in a drinking water system's distribution system for the purposes described in clauses (a) to (d).

Treatment System - means any part of a drinking water system that is used in relation to the treatment of water and includes,


- (a) any thing that conveys or stores water and is part of a treatment process, including any treatment equipment installed in plumbing,
- (b) any thing related to the management of residue from the treatment process or the management of the discharge of a substance into the natural environment from the system, and
- (c) a well or intake that serves as the source or entry point of raw water supply for the system;

3. Procedure

3.1 Drinking Water System Overview

Owner / Operating Authority

The Mattawa Drinking Water System is owned by the Corporation of the Town of Mattawa. As the Operating Authority, the Ontario Clean Water Agency provides management and oversight (under OCWA's Quality and Environmental Management System) to the Mattawa Drinking Water System. OCWA employees have operational

	<p style="text-align: center;">OPERATIONAL PLAN Mattawa Drinking Water System</p>	<p>QEMS Proc.: OP-06 Rev Date: 2025-07-25 Rev No: 15 Pages: 2 of 8</p>
DRINKING WATER SYSTEM		
Reviewed by: PCT	Approved by: Senior Operations Manager	

responsibilities in the Drinking Water System. The Mattawa Drinking Water System classification is “Water Distribution and Supply Subsystem Class 2”.

3.2 Source Water

General Characteristics

This is a ground water well system, with good, consistent characteristics. This source has been deemed **not** to be Groundwater Under the Direct Influence of Surface Water (GUDI). Both wells do not appear to be vulnerable to bacteriological contamination.

Raw Water Characteristics at Raw Water Source (based on 2024 data)

Characteristic	Minimum	Maximum	Annual Average
Turbidity (NTU) Well #1	0.24	0.35	0.28
Turbidity (NTU) Well #2	0.22	0.32	0.28
<i>E. coli</i> (CFU/100 mL) Well #1	0	0	0
<i>E. coli</i> (CFU/100 mL) Well #2	0	0	0
Total Coliforms Well #1	0	2	0.06
Total Coliforms Well #2	0	10	0.24

Common Fluctuations / Threats

The facility has a Source Water Protection Plan, which identifies various risks. Visit www.nbmca.on.ca for details.


Operational Challenges

There are no operational challenges envisioned.

3.3 Treatment System Description

The water supply system for the Town of Mattawa consists of Well No. 1, Well No. 2, and an in-ground water storage reservoir that floats on the distribution system. These two groundwater supply wells, as well as the reservoir, provide drinking water to the residents of Mattawa. The Mattawa Drinking Water System serves an approximate population of 2,150. In accordance with the Municipal Drinking Water Licence, the drinking water system shall not be operated to exceed 6,540 cubic meters per day (m³/d).

Wells No. 1 and No. 2 are located inside a single structure situated at 400 Bissett Street in the Town of Mattawa. This facility houses two well pumps, an ultraviolet (UV) disinfection system, a sodium hypochlorite disinfection system, all control, monitoring, and alarm systems, as well as a standby diesel generator.

	<p style="text-align: center;">OPERATIONAL PLAN Mattawa Drinking Water System</p>	<p>QEMS Proc.: OP-06 Rev Date: 2025-07-25 Rev No: 15 Pages: 3 of 8</p>
DRINKING WATER SYSTEM		
Reviewed by: PCT	Approved by: Senior Operations Manager	

The wells are operated by OCWA and are utilized on a duty/standby basis. Well No. 1 is operated as the duty well from 6 am to midnight. Well No. 2 is used as the duty well from midnight to 6 am, for energy conservation purposes. The switchover of duty wells is automatically done via a timer within the plant programmable logic controller (PLC).

Well No. 1 is equipped with a vertical turbine pump capable of delivering 53.0 L/s at 105.8 m of total dynamic head. Well No. 2 has a vertical turbine pump rated at 22.7 L/s with a total dynamic head of 91.5 m, with a variable frequency drive (VFD).

Primary disinfection equipment includes two UV disinfection systems, each designed to deliver the required UV dosage at the rated capacity of the facility. Chlorination equipment includes a 200 L sodium hypochlorite (NaOCl) storage tank and dual chemical feed pumps that inject liquid chlorine into the system. Output from Well No. 1 and No. 2 is governed by system demand (water level in the reservoir). As the water level in the reservoir drops to the low water level (LWL), the selected duty well pump automatically starts.

Stand-by power is provided by an on-site diesel generator with an automatic transfer switch. In the event of a power outage in the area, the diesel generator automatically starts, providing continuous power to the Pumphouse.

The well pumps, UV disinfection system, sodium hypochlorite injection system, and analyzers are all supervised locally via the PLC. All alarms are instantly transmitted from the PLC to the alarm panel, which dials a security company and pages the Operator-on-call. Refer to the Treatment System Process Flow Chart for more facility detail.

In 2012, a SCADA system was installed to allow for continuous monitoring and recording. It includes alarming, enhanced operator control of the waterworks, and increased security features. As of December 2023, the existing PLC infrastructure was upgraded, and a custom SCADA solution was designed and implemented to enhance operational monitoring and control.

Mattawa Drinking Water System

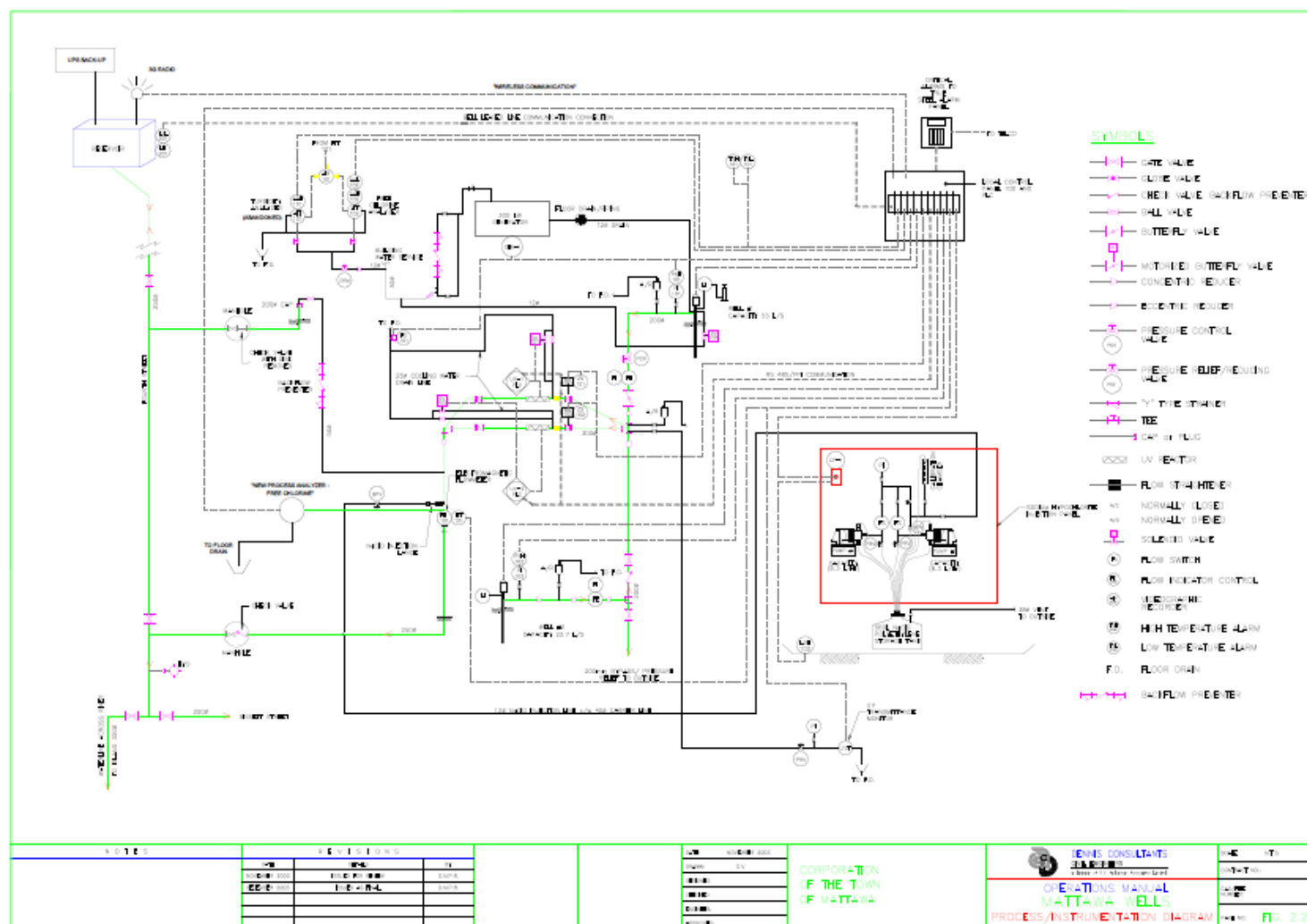
QEMS Proc.: OP-06
Rev Date: 2025-07-25
Rev No: 15
Pages: 4 of 8


DRINKING WATER SYSTEM

Reviewed by: PCT

Approved by: Senior Operations Manager

Treatment System Process Flow Chart – Original copy can be found on public drive.



	<p style="text-align: center;">OPERATIONAL PLAN Mattawa Drinking Water System</p>	<p>QEMS Proc.: OP-06 Rev Date: 2025-07-25 Rev No: 15 Pages: 5 of 8</p>
DRINKING WATER SYSTEM		
Reviewed by: PCT	Approved by: Senior Operations Manager	

3.4 Description of the Distribution System Components

The system has approximately 1,050 service connections to residential and commercial consumers. There is approximately 20,000 m of various sized cast iron, ductile iron and polyvinyl chloride piping. There are 117 fire hydrants in the distribution system.

There is a 795 m³ (175,000 IMPG) in-ground storage reservoir within the distribution system located approximately 700 m northwest of the Pumphouse.



Ontario Clean Water Agency

OPERATIONAL PLAN

Mattawa Drinking Water System

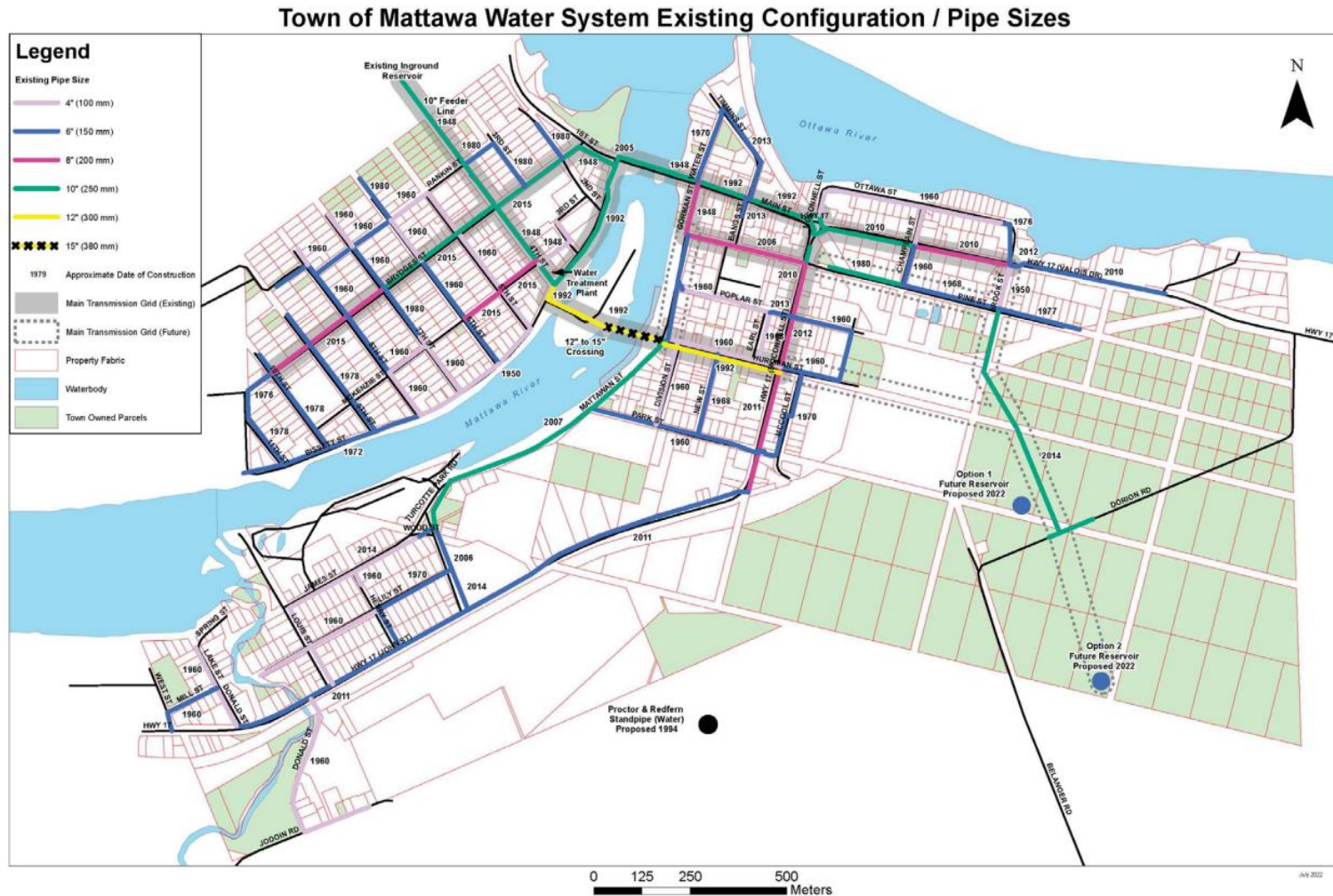
QEMS Proc.: OP-06
Rev Date: 2025-07-25
Rev No: 15
Pages: 6 of 8

DRINKING WATER SYSTEM

Reviewed by: PCT

Approved by: Senior Operations Manager

3.5 Distribution System Components Flow Chart





OPERATIONAL PLAN

Mattawa Drinking Water System

QEMS Proc.: OP-06
Rev Date: 2025-07-25
Rev No: 15
Pages: 7 of 8

DRINKING WATER SYSTEM

Reviewed by: PCT

Approved by: Senior Operations Manager

4. Related Documents

None

5. Revision History

Date	Revision #	Reason for Revision
2013-07-26	2	Removed references to RRAM, updated description of the drinking water system, added PI&D drawing, added raw water characteristics, critical up/downstream processes, etc., updated Associated Documentation, added revision history.
2014-06-05	3	Updated description to be more specific, included SCADA upgrade, removed requirement for annual review, included Director's Direction Schedule "C".
2015-08-25	4	Changed "Approver", updated Schedule "C".
2016-08-16	5	Updated department title, reissued.
2019-07-19	6	DWQMS-6 procedure renamed OP-06 as per OCWA template. Information within OP-06 was originally set out in DWQMS-6 of Mattawa DWS Operational Plan (last revision 5 dated 2016-08-25). New Purpose, Definitions, Procedure, Related Documents and separate Revision History sections. Updates based on revisions to DWQMS (e.g. removal of critical upstream or downstream processes, separation of systems that provide primary and/or secondary disinfection and systems that do not, for systems that are connected to another system with different owners, must now include which system is relied upon to ensure the provision of safe drinking water). Moved order of system description to follow the process (e.g., source water first, then treatment, then distribution). Updated raw water characteristics, removed Schedule C as it is located at the end of Operational Plan in the OCWA template, added Distribution System Components Flow Chart.
2019-09-17	7	Updated section 3.3 paragraph 3 to describe OCWA as operator of wells.
2019-09-20	8	Updated Process Flow Chart with current up to date version.
2020-04-07	9	Added reference to location of original copy of Process Flow Chart, which is located on public drive.
2020-09-03	10	Updated raw water characteristics, added proper number of hydrants and updated description to include new sized sodium hypochlorite day tank.
2021-09-22	11	Updated raw water characteristics.
2022-07-18	12	Updated raw water characteristics and added Well #2 VFD.
2023-06-26	13	Updated raw water characteristics.
2024-09-24	14	Updated raw water characteristics



OPERATIONAL PLAN

Mattawa Drinking Water System


QEMS Proc.: OP-06
Rev Date: 2025-07-25
Rev No: 15
Pages: 8 of 8

DRINKING WATER SYSTEM

Reviewed by: PCT

Approved by: Senior Operations Manager

Date	Revision #	Reason for Revision
2025-07-25	15	Updated raw water characteristics, Updated plant description with December 2023 PLC upgrade and new SCADA system. Updated distribution system map.

	<p style="text-align: center;">OPERATIONAL PLAN Mattawa Drinking Water System</p>	<p>QEMS Proc.: OP-07 Rev Date: 2024-11-28 Rev No: 7 Pages: 1 of 4</p>
RISK ASSESSMENT		
Reviewed by: PCT	Approved by: Senior Operations Manager	

1. Purpose

To document the process for conducting a risk assessment to identify and assess potential hazardous events and associated hazards that could affect drinking water safety.

2. Definitions

Consequence – the potential impact to public health and/or operation of the drinking water system if a hazard/hazardous event is not controlled

Control Measure – includes any processes, physical steps or other practices that have been put in place at a drinking water system to prevent or reduce a hazard before it occurs

Critical Control Point (CCP) – An essential step or point in the subject system at which control can be applied by the Operating Authority to prevent or eliminate a drinking water health hazard or reduce it to an acceptable level

Drinking Water Health Hazard – means, in respect of a drinking water system,

- a) a condition of the system or a condition associated with the system's waters, including anything found in the waters,
 - i. that adversely affects, or is likely to adversely affect, the health of the users of the system,
 - ii. that deters or hinders, or is likely to deter or hinder, the prevention or suppression of disease, or
 - iii. that endangers or is likely to endanger public health,
- b) a prescribed condition of the drinking water system, or
- c) a prescribed condition associated with the system's waters or the presence of a prescribed thing in the waters


Hazardous Event – an incident or situation that can lead to the presence of a hazard

Hazard – a biological, chemical, physical or radiological agent that has the potential to cause harm

Likelihood – the probability of a hazard or hazardous event occurring

3. Procedure

- 3.1 Operations Management ensures that operations personnel are assigned to conduct a risk assessment at least once every thirty-six months. At a minimum, the Risk Assessment Team must include the QEMS Representative, at least one Operator for the system and at least one member of Operations Management.
- 3.2 The QEMS Representative is responsible for coordinating the risk assessment and ensuring that documents and records related to the risk assessment activities are maintained.


	<p style="text-align: center;">OPERATIONAL PLAN Mattawa Drinking Water System</p>	<p>QEMS Proc.: OP-07 Rev Date: 2024-11-28 Rev No: 7 Pages: 2 of 4</p>
RISK ASSESSMENT		
Reviewed by: PCT	Approved by: Senior Operations Manager	

3.3 The Risk Assessment Team performs the risk assessment as follows:

- 3.3.1 OP-07 Risk Assessment and OP-08 Risk Assessment Outcomes are reviewed.
- 3.3.2 For each of the system's activities/process steps, potential hazardous events and associated hazards (possible outcomes) that could impact the system's ability to deliver safe drinking water are identified. At a minimum, potential hazardous events and associated hazard as identified in the most current version of the Ministry of the Environment, Conservation and Parks (MECP) document titled "Potential Hazardous Events for Municipal Residential Drinking Water Systems" (as applicable to the system type) must be considered.
- 3.3.3 For each of the hazardous events, control measures currently in place at the system to eliminate the hazard or prevent it from becoming a threat to public health are specified. Control measures may include alarms, monitoring procedures, SOPs/contingency plans, preventive maintenance activities, backup equipment, engineering controls, etc.
- 3.3.4 To ensure that potential drinking water health hazards are addressed and minimum treatment requirements as regulated by SDWA O. Reg. 170/03 and the MECP's "Procedure for Disinfection of Drinking Water in Ontario" are met, OCWA has established mandatory Critical Control Points (CCPs).

As a minimum, the following must be included as CCPs (as applicable):

- Equipment or processes required to achieve primary disinfection (e.g., chemical and/or UV disinfection system, coagulant dosing system, filters, etc.)
 - Equipment or processes necessary for maintaining secondary disinfection in the distribution system
 - Fluoridation system
- 3.3.5 Additional CCPs for the system are determined by evaluating and ranking the hazardous events for the remaining activities/process steps (i.e., those not included as OCWA's minimum CCPs).
- 3.3.6 Taking into consideration existing control measures (including the reliability and redundancy of equipment), each hazardous event is assigned a value for the likelihood and a value for the consequence of that event occurring based on the following criteria:

	<p style="text-align: center;">OPERATIONAL PLAN Mattawa Drinking Water System</p>	<p>QEMS Proc.: OP-07 Rev Date: 2024-11-28 Rev No: 7 Pages: 3 of 4</p>
RISK ASSESSMENT		
Reviewed by: PCT	Approved by: Senior Operations Manager	

Value	Likelihood of Hazardous Event Occurring
1	Rare – Estimated to occur every 50 years or more (usually no documented occurrence at site)
2	Unlikely – Estimated to occur in the range of 10 – 49 years
3	Possible – Estimated to occur in the range of 1 – 9 years
4	Likely – Occurs monthly to annually
5	Certain – Occurs monthly or more frequently

Value	Consequence of Hazardous Event Occurring
1	Insignificant – Little or no disruption to normal operations, no impact on public health
2	Minor – Significant modification to normal operations but manageable, no impact on public health
3	Moderate – Potentially reportable, corrective action required, potential public health impact, disruption to operations is manageable
4	Major – Reportable, system significantly compromised and abnormal operations if at all, high level of monitoring and corrective action required, threat to public health
5	Catastrophic – Complete failure of system, water unsuitable for consumption

The likelihood and consequence values are multiplied to determine the risk value (ranking) of each hazardous event. Hazardous events with a ranking of 12 or greater are considered high risk.

- 3.3.7 Hazardous events and rankings are reviewed and any activity/process step is identified as an additional CCP if all of the following criteria are met:
- ✓ The associated hazardous event has a ranking of 12 or greater;
 - ✓ The associated hazardous event can be controlled through control measure(s);
 - ✓ Operation of the control measures can be monitored and corrective actions can be applied in a timely fashion;
 - ✓ Specific control limits can be established for the control measure(s); and
 - ✓ Failure of the control measures would lead to immediate notification of Medical Officer of Health (MOH) or MECP or both.

- 3.4 The outcomes of the risk assessment are documented as per OP-08 Risk Assessment Outcomes.

	<p style="text-align: center;">OPERATIONAL PLAN Mattawa Drinking Water System</p>	<p>QEMS Proc.: OP-07 Rev Date: 2024-11-28 Rev No: 7 Pages: 4 of 4</p>
RISK ASSESSMENT		
Reviewed by: PCT	Approved by: Senior Operations Manager	

3.5 At least once every calendar year, the QEMS Representative facilitates the verification of the currency of the information and the validity of the assumptions used in the risk assessment in preparation for the Management Review (OP-20). When performing this review, the following may be considered:

- Process/equipment changes
- Reliability and redundancy of equipment
- Emergency situations/service interruptions
- CCP deviations
- Audit/inspection results

4. Related Documents

OP-08 Risk Assessment Outcomes


OP-20 Management Review

MECP's "Potential Hazardous Events for Municipal Residential Drinking Water Systems"

MECP's "Procedure for Disinfection of Drinking Water in Ontario"

5. Revision History

Date	Revision #	Reason for Revision
2013-07-29	2	Procedure completely revised, new risk assessment rating devised, references to RRAM eliminated.
2014-06-05	3	Listed personnel that will conduct Risk Assessment
2015-08-25	4	Replace Public Works Superintendent with QMS Rep., changed "Approver".
2016-08-17	5	Replaced Public Works with Environmental Services, reissued.
2019-07-22	6	DWQMS-7 procedure renamed OP-07 as per OCWA template. Information within OP-07 was originally set out in DWQMS-7 of Mattawa DWS Operational Plan (last revision 5 dated 2016-08-25). Revised Purpose to reflect element 7 requirements only. Included minimum requirements for the Risk Assessment Team (QEMS Representative, at least one operator for the system and at least one member of Operation Management. Clarified role of QEMS Representative in coordinating the risk assessment and maintaining documents and records. Re-worded procedure for performing the risk assessment (process itself remains essentially unchanged). Included reference to MECP's "Potential Hazardous Events for Municipal Residential Drinking Water Systems". Removed requirements for documenting the outcomes of the risk assessment (now covered in OP-08). Changed annual review to at least once every calendar year and included potential considerations when performing the review. Updated MOECC to MECP.
2024-11-28	7	Removed watermark

	<p style="text-align: center;">OPERATIONAL PLAN Mattawa Drinking Water System</p>	<p>QEMS Proc.: OP-08 Rev Date: 2024-11-28 Rev No: 1 Pages: 1 of 2</p>
RISK ASSESSMENT OUTCOMES		
Reviewed by: PCT	Approved by: Senior Operations Manager	

1. Purpose

To document the outcomes of the risk assessment conducted as per OP-07 Risk Assessment.

2. Definitions

Critical Control Point (CCP) – An essential step or point in the subject system at which control can be applied by the Operating Authority to prevent or eliminate a drinking water health hazard or reduce it to an acceptable level

Critical Control Limit (CCL) – The point at which a Critical Control Point response procedure is initiated

3. Procedure

3.1 The QEMS Representative is responsible for updating the information in OP-08A Summary of Risk Assessment Outcomes as required.

3.2 The results of the risk assessment conducted as per OP-07 are documented in Table 1 of OP-08A. This includes:


- Identified potential hazardous events and associated hazards (possible outcomes) for each of the system's activities/process steps;
Note: Hazards listed in the MECP's "Potential Hazardous Events for Municipal Residential Drinking Water Systems" are indicated in the appropriate column using the reference numbers in Table 4 of OP-08A.
- Identified control measures to address the potential hazards and hazardous events; and
- Assigned rankings for the hazardous events (likelihood x consequence = risk value) and whether the hazardous event is a Critical Control Point (CCP) (mandatory or additional).
Note: If the hazardous event is ranked as 12 or higher and it is not being identified as a CCP, provide rationale as to why it does not meet the criteria set out in section 3.3.7 of OP-07).

3.3 Operations Management is responsible for ensuring that for each CCP:

- Critical Control Limits (CCLs) are set;
- Procedures and processes to monitor the CCLs are established; and
- Procedures to respond to, report and record deviations from the CCLs are implemented.

The identified CCPs, their respective CCLs and associated procedures are documented in Table 2 of OP-08A.

3.4 A summary of the results of the annual review/36-month risk assessment is recorded in Table 3 of OP-08A.

	<p align="center">OPERATIONAL PLAN Mattawa Drinking Water System</p>	<p>QEMS Proc.: OP-08 Rev Date: 2024-11-28 Rev No: 1 Pages: 2 of 2</p>
RISK ASSESSMENT OUTCOMES		
Reviewed by: PCT	Approved by: Senior Operations Manager	

3.5 Operations Management considers the risk assessment outcomes during the review of the adequacy of the infrastructure (Refer to OP-14 Review and Provision of Infrastructure).

4. Related Documents

OP-07 Risk Assessment
OP-08A Summary of Risk Assessment Outcomes
OP-14 Review and Provision of Infrastructure
MECP's "Potential Hazardous Events for Municipal Residential Drinking Water Systems"

5. Revision History

Date	Revision #	Reason for Revision
2019-07-22	0	DWQMS-8 procedure renamed OP-08 as per OCWA template. Information within OP-08 was originally set out in DWQMS-7 of Mattawa DWS Operational Plan (last revision 5 dated 2016-08-25). Clarified role of QEMS Representative in updating the information in OP-08A Summary of Risk Assessment Outcomes. Info originally set out in DWQMS-8 now in Appendix OP-08A. Included requirements for how to document the risk assessment outcomes using the tables in OP-08A. Clarified responsibility of Operations Management to ensure Critical Control Limits are set and related procedures are developed. Included reference to OP-14 Review and Provision of Infrastructure to emphasize the need for Operations Management to review the risk assessment outcomes during the infrastructure review. Updated MOECC to MECP.
2024-11-28	1	Removed watermark


	<p style="text-align: center;">OPERATIONAL PLAN Mattawa Drinking Water System</p>	<p>QEMS Doc.: OP-08A Rev Date: 2025-07-25 Rev No: 14 Pages: 1 of 13</p>
SUMMARY OF RISK ASSESSMENT OUTCOMES		
Reviewed by: PCT	Approved by: Senior Operations Manager	

Table 1: Risk Assessment Table

Note: Processes referred to in section 3.3.4 of OP-07 Risk Assessment must be identified as mandatory Critical Control Points (CCPs) as applicable. Mandatory CCPs are not required to be ranked.

Activity/ Process Step	MECP Potential Hazardous Event/Hazard Reference # (see Table 4)	Description of Hazardous Event	Possible Outcome (Hazards)	Existing Control Measures	Likelihood	Consequence	Risk Value	CCP?
Raw Water/Well	1, 2, 3, 4, 6	Well casing collapse, due to natural disaster or vandalism/terrorism	Loss of raw water	Backup well and pump, provisions of an alternate water source SOP	2	4	8	<input type="checkbox"/> Yes – Mandatory CCP <input type="checkbox"/> Yes – Additional CCP identified for facility <input checked="" type="checkbox"/> No
	2	Well pump failure	Loss of raw water	Backup well and pump, provisions of an alternate water source SOP, generator for loss of power situations, elevated reservoir provides positive pressure	3	3	9	<input type="checkbox"/> Yes – Mandatory CCP <input type="checkbox"/> Yes – Additional CCP identified for facility <input checked="" type="checkbox"/> No
	2, 5, 6, 9	Chemical, biological, radioactive spill to the well, accidentally or intentionally	Contamination of aquifer	No method of control until contaminant has been identified – response may include shutting down the well, supplying bottled water, following CP for Unsafe Water and following provisions of an alternate water source SOP, monitoring, sampling, Source Water Protection Plan policies	2	5	10	<input type="checkbox"/> Yes – Mandatory CCP <input type="checkbox"/> Yes – Additional CCP identified for facility <input checked="" type="checkbox"/> No
	2, 5, 9	Agricultural run-off	Contamination of aquifer	No method of control until contaminant has been identified – response may include shutting down the well, supplying bottled water, following CP for Unsafe Water and following provisions of an alternate water source SOP	2	3	6	<input type="checkbox"/> Yes – Mandatory CCP <input type="checkbox"/> Yes – Additional CCP identified for facility <input checked="" type="checkbox"/> No

OPERATIONAL PLAN

Mattawa Drinking Water System

QEMS Doc.: OP-08A
Rev Date: 2025-07-25
Rev No: 14
Pages: 2 of 13

SUMMARY OF RISK ASSESSMENT OUTCOMES

Reviewed by: PCT

Approved by: Senior Operations Manager

Activity/ Process Step	MECP Potential Hazardous Event/Hazard Reference # (see Table 4)	Description of Hazardous Event	Possible Outcome (Hazards)	Existing Control Measures	Likelihood	Consequence	Risk Value	CCP?
Primary Disinfection (Ultra-Violet Irradiation)	10	Power failure to reactors	Inadequate inactivation of pathogens, less than required log removal	Back-up power, alarms				<input checked="" type="checkbox"/> Yes – Mandatory CCP <input type="checkbox"/> Yes – Additional CCP identified for facility <input type="checkbox"/> No
	10	Low UV dosage	Inadequate inactivation of pathogens, less than required log removal	Redundancy (two UV reactors), regular maintenance/cleaning of bulbs and sleeves, replacement of bulbs and sleeves, alarm and auto plant shutdown of well pump, adverse water quality reporting SOP, CP for Unsafe Water				<input checked="" type="checkbox"/> Yes – Mandatory CCP <input type="checkbox"/> Yes – Additional CCP identified for facility <input type="checkbox"/> No
	10	Sensor failure	Unknown UV dosage, potential for inadequate inactivation of pathogens	Alarms, scheduled maintenance activities, spare sensor				<input checked="" type="checkbox"/> Yes – Mandatory CCP <input type="checkbox"/> Yes – Additional CCP identified for facility <input type="checkbox"/> No
	10	UV Reactor Failure	Unknown UV dosage, potential for inadequate inactivation of pathogens	Redundancy (two UV reactors), alarms, scheduled maintenance activities, auto plant shutdown, adverse water quality reporting SOP, CP for Unsafe Water				<input checked="" type="checkbox"/> Yes – Mandatory CCP <input type="checkbox"/> Yes – Additional CCP identified for facility <input type="checkbox"/> No

OPERATIONAL PLAN

Mattawa Drinking Water System

QEMS Doc.: OP-08A
Rev Date: 2025-07-25
Rev No: 14
Pages: 3 of 13

SUMMARY OF RISK ASSESSMENT OUTCOMES

Reviewed by: PCT

Approved by: Senior Operations Manager

Activity/ Process Step	MECP Potential Hazardous Event/Hazard Reference # (see Table 4)	Description of Hazardous Event	Possible Outcome (Hazards)	Existing Control Measures	Likelihood	Consequence	Risk Value	CCP?
Primary Disinfection (Ultra-Violet Irradiation)	10	Main PLC Failure	Inadequate inactivation of pathogens, less than required log removal	Alarms and plant lockout. One spare PLC onsite.				<input checked="" type="checkbox"/> Yes – Mandatory CCP <input type="checkbox"/> Yes – Additional CCP identified for facility <input type="checkbox"/> No
Distribution System (Secondary Disinfection)	11	Loss of free chlorine residual in distribution	Failure to control biofilm and pathogens (long-term), potential for AWQI	Continuous on-line monitoring of chlorine residual into and in the distribution system, low chlorine residual alarm and auto plant lockout, redundancy (2 chlorine pumps), chlorine residual testing as per O. Reg. 170/03, regularly scheduled maintenance, adverse water quality reporting SOP, CP for Unsafe Water				<input checked="" type="checkbox"/> Yes – Mandatory CCP <input type="checkbox"/> Yes – Additional CCP identified for facility <input type="checkbox"/> No
Distribution System		Adverse water quality as described in O. Reg. 170/03 (eg. Bacteriological, TotalTrihalomethanes.)	Potential for unsafe drinking water	Site specific sampling schedule, adverse water quality reporting SOP, CP for Unsafe Water	3	3	9	<input type="checkbox"/> Yes – Mandatory CCP <input type="checkbox"/> Yes – Additional CCP identified for facility <input checked="" type="checkbox"/> No
	1, 2, 3, 4, 6, 7, 8	Main break due to weather, time or vandalism/terrorism	Contamination, loss of supply, loss of pressure	Training, AWWA standards, MECP procedures for disinfection, capital replacements, alarms (low reservoir level), operator checks, notifications/complaints from customers	3	3	9	<input type="checkbox"/> Yes – Mandatory CCP <input type="checkbox"/> Yes – Additional CCP identified for facility <input checked="" type="checkbox"/> No

OPERATIONAL PLAN

Mattawa Drinking Water System

QEMS Doc.: OP-08A
Rev Date: 2025-07-25
Rev No: 14
Pages: 4 of 13

SUMMARY OF RISK ASSESSMENT OUTCOMES

Reviewed by: PCT

Approved by: Senior Operations Manager

Activity/ Process Step	MECP Potential Hazardous Event/Hazard Reference # (see Table 4)	Description of Hazardous Event	Possible Outcome (Hazards)	Existing Control Measures	Likelihood	Consequence	Risk Value	CCP?
<i>Distribution System</i>	6, 7, 8	<i>Fire, accidental or vandalism/terrorism</i>	<i>Low pressure, contamination/turbidity</i>	<i>Communication with fire department, fire flow design, extra well, reservoir</i>	3	2	6	<input type="checkbox"/> Yes – Mandatory CCP <input type="checkbox"/> Yes – Additional CCP identified for facility <input checked="" type="checkbox"/> No
	8	<i>Cross-connection, backflow, siphonage</i>	<i>Contamination</i>	<i>Plumbing code, inspections, respond to complaints and collect bacteriological samples, cross-connection by-law, adverse water quality reporting SOP, CP for Unsafe Water</i>	3	3	9	<input type="checkbox"/> Yes – Mandatory CCP <input type="checkbox"/> Yes – Additional CCP identified for facility <input checked="" type="checkbox"/> No
	2, 7, 8	<i>Human error</i>	<i>Contamination, loss of supply, loss of pressure</i>	<i>Training, inspections, quick response time, certified staff</i>	3	3	9	<input type="checkbox"/> Yes – Mandatory CCP <input type="checkbox"/> Yes – Additional CCP identified for facility <input checked="" type="checkbox"/> No
	7, 8	<i>Air in the line</i>	<i>Loss of pressure, loss of public trust</i>	<i>Maintenance and valve inspections, customer complaints, flushing, reservoir</i>	3	2	6	<input type="checkbox"/> Yes – Mandatory CCP <input type="checkbox"/> Yes – Additional CCP identified for facility <input checked="" type="checkbox"/> No
	1, 3, 4, 6, 7, 8	<i>Power loss, due to weather or vandalism/terrorism</i>	<i>Loss of pressure, surges</i>	<i>Contingency plans, back-up generator, alarms, reservoir</i>	4	2	8	<input type="checkbox"/> Yes – Mandatory CCP <input type="checkbox"/> Yes – Additional CCP identified for facility <input checked="" type="checkbox"/> No

OPERATIONAL PLAN

Mattawa Drinking Water System

QEMS Doc.: OP-08A
Rev Date: 2025-07-25
Rev No: 14
Pages: 5 of 13

SUMMARY OF RISK ASSESSMENT OUTCOMES

Reviewed by: PCT

Approved by: Senior Operations Manager

Activity/ Process Step	MECP Potential Hazardous Event/Hazard Reference # (see Table 4)	Description of Hazardous Event	Possible Outcome (Hazards)	Existing Control Measures	Likelihood	Consequence	Risk Value	CCP?
<i>Distribution System</i>	6, 7, 8	Single main contamination accidental or vandalism/terrorism	Loss of pressure, contamination	Capital programs, provisions of an alternate water source SOP, isolation of a zone, security measures, public complaints, reservoir, backup well, CP for Unsafe Water	3	3	9	<input type="checkbox"/> Yes – Mandatory CCP <input type="checkbox"/> Yes – Additional CCP identified for facility <input checked="" type="checkbox"/> No
	1, 3, 7, 8	Natural disaster	Loss of pressure, contamination	Contingency plans, provisions of an alternate water source SOP	2	4	8	<input type="checkbox"/> Yes – Mandatory CCP <input type="checkbox"/> Yes – Additional CCP identified for facility <input checked="" type="checkbox"/> No
		Leaching contaminants into hydrant drain port	Contamination	Maintain positive pressure, inspections	1	5	5	<input type="checkbox"/> Yes – Mandatory CCP <input type="checkbox"/> Yes – Additional CCP identified for facility <input checked="" type="checkbox"/> No
	7, 8	Residential service leak	Loss of pressure	Response to customer	5	1	5	<input type="checkbox"/> Yes – Mandatory CCP <input type="checkbox"/> Yes – Additional CCP identified for facility <input checked="" type="checkbox"/> No
		Biofilm and tuberculation	Public health	Flushing, maintenance, capital replacement	4	2	8	<input type="checkbox"/> Yes – Mandatory CCP <input type="checkbox"/> Yes – Additional CCP identified for facility <input checked="" type="checkbox"/> No

OPERATIONAL PLAN

Mattawa Drinking Water System

QEMS Doc.: OP-08A
Rev Date: 2025-07-25
Rev No: 14
Pages: 6 of 13

SUMMARY OF RISK ASSESSMENT OUTCOMES

Reviewed by: PCT

Approved by: Senior Operations Manager

Activity/ Process Step	MECP Potential Hazardous Event/Hazard Reference # (see Table 4)	Description of Hazardous Event	Possible Outcome (Hazards)	Existing Control Measures	Likelihood	Consequence	Risk Value	CCP?
<i>Distribution System</i>		<i>Dead ends and related flushing operations</i>	<i>Contamination</i>	<i>Flushing, performance standards, planning for removal of dead ends</i>	3	2	6	<input type="checkbox"/> Yes – Mandatory CCP <input type="checkbox"/> Yes – Additional CCP identified for facility <input checked="" type="checkbox"/> No
		<i>Critical shortage of staff</i>	<i>Contamination, loss of supply</i>	<i>Cross-training staff, extra staff available within region, emergency contractors, CP for Critical Shortage of Staff</i>	3	2	6	<input type="checkbox"/> Yes – Mandatory CCP <input type="checkbox"/> Yes – Additional CCP identified for facility <input checked="" type="checkbox"/> No
<i>Reservoir</i>	1, 2, 3, 4, 7, 8	<i>Loss of structural integrity due to time and weather</i>	<i>Loss of pressure, loss of supply, contamination</i>	<i>Low level alarms, security, inspections, two wells can be run with reservoir isolated</i>	2	5	10	<input type="checkbox"/> Yes – Mandatory CCP <input type="checkbox"/> Yes – Additional CCP identified for facility <input checked="" type="checkbox"/> No
	7	<i>Loss of communication</i>	<i>Loss of service, public health</i>	<i>Manual inspections and operation, communication alarm, pressure gauge on discharge header at well house, spare level sensor</i>	4	2	8	<input type="checkbox"/> Yes – Mandatory CCP <input type="checkbox"/> Yes – Additional CCP identified for facility <input checked="" type="checkbox"/> No
	2, 7, 8	<i>Reservoir out of service for maintenance, repair</i>	<i>Loss of supply, loss of pressure</i>	<i>Manual inspections, level indicator alarm, public notice for users to conserve water, convert to pressurized system configuration,</i>	2	4	8	<input type="checkbox"/> Yes – Mandatory CCP <input type="checkbox"/> Yes – Additional CCP identified for facility <input checked="" type="checkbox"/> No

OPERATIONAL PLAN

Mattawa Drinking Water System

QEMS Doc.: OP-08A
Rev Date: 2025-07-25
Rev No: 14
Pages: 7 of 13

SUMMARY OF RISK ASSESSMENT OUTCOMES

Reviewed by: PCT

Approved by: Senior Operations Manager

Activity/ Process Step	MECP Potential Hazardous Event/Hazard Reference # (see Table 4)	Description of Hazardous Event	Possible Outcome (Hazards)	Existing Control Measures	Likelihood	Consequence	Risk Value	CCP?
	6	<i>Intentional or accidental contamination, vandalism/terrorism</i>	<i>Contamination</i>	<i>Security, inspections, alarms, screens on overflows</i>	2	5	10	<input type="checkbox"/> Yes – Mandatory CCP <input type="checkbox"/> Yes – Additional CCP identified for facility <input checked="" type="checkbox"/> No
Reservoir	2, 7, 8	<i>Fire</i>	<i>Contamination, loss of pressure, loss of supply</i>	<i>Alarms, inspections</i>	2	3	6	<input type="checkbox"/> Yes – Mandatory CCP <input type="checkbox"/> Yes – Additional CCP identified for facility <input checked="" type="checkbox"/> No
Fire Hydrants	6	<i>Water theft</i>	<i>Contamination</i>	<i>Communication with treatment plant, visual inspections, investigations</i>	1	4	4	<input type="checkbox"/> Yes – Mandatory CCP <input type="checkbox"/> Yes – Additional CCP identified for facility <input checked="" type="checkbox"/> No
All (watermains, connections, hydrants, valves, construction, etc.)	2, 6, 7, 8	<i>Accident, vandalism/terrorism</i>	<i>Contamination, loss of water supply, loss of pressure</i>	<i>Notifications/complaints from customers, alarms (low reservoir level), operator checks, CP for Unsafe Water</i>	2	3	6	<input type="checkbox"/> Yes – Mandatory CCP <input type="checkbox"/> Yes – Additional CCP identified for facility <input checked="" type="checkbox"/> No
	1	<i>Pandemic</i>	<i>Shortage of staff Supply shortages Loss of sample locations</i>	<i>CP for Critical Shortage of Staff Staff training and PPE OCWA's Emergency Operations Center (EOC) Staff isolation/ remote work done where possible</i>	1	4	4	<input type="checkbox"/> Yes – Mandatory CCP <input type="checkbox"/> Yes – Additional CCP identified for facility <input checked="" type="checkbox"/> No

OPERATIONAL PLAN

Mattawa Drinking Water System


QEMS Doc.: OP-08A
Rev Date: 2025-07-25
Rev No: 14
Pages: 8 of 13

SUMMARY OF RISK ASSESSMENT OUTCOMES

Reviewed by: PCT

Approved by: Senior Operations Manager

Activity/ Process Step	MECP Potential Hazardous Event/Hazard Reference # (see Table 4)	Description of Hazardous Event	Possible Outcome (Hazards)	Existing Control Measures	Likelihood	Consequence	Risk Value	CCP?
				<i>Alternate suppliers available, refer to ESS list</i>				
	13	<i>Cybersecurity threats</i>	<i>Loss of system process visibility for operators (e.g., unable to monitor treatment processes) Interruption of data recording leading to a loss of critical/compliance data inability to remotely control processes and/or loss of automatic control installation of malicious programs like ransomware, which can disable business enterprise until money is paid Loss of data (stolen or maliciously deleted)</i>	<i>Implementing Identity and Access Management throughout the account management lifecycle. Privileges are granted to users with two principles – need to know and least privileges. Users are assigned only the privileges they need to perform their job. Employing default to fail secure. The application or system failure will cause little or no harm to other systems. Data will not fall into the wrong hands. Applying multiple layers of defense including: o Intrusion detection systems constantly monitoring traffic flow (borders) o Firewalls that provide real-time filtering and blocking (walls) o Cryptography and layered authentication (zones) o Certified professionals ensuring system integrity (gatekeepers) Constant monitoring and tracking for quick and effective response to attacks</i>	2	4	8	<input type="checkbox"/> Yes – Mandatory CCP <input type="checkbox"/> Yes – Additional CCP identified for facility <input checked="" type="checkbox"/> No

	OPERATIONAL PLAN Mattawa Drinking Water System	QEMS Doc.: OP-08A Rev Date: 2025-07-25 Rev No: 14 Pages: 9 of 13
SUMMARY OF RISK ASSESSMENT OUTCOMES		
Reviewed by: PCT		Approved by: Senior Operations Manager

Activity/ Process Step	MECP Potential Hazardous Event/Hazard Reference # (see Table 4)	Description of Hazardous Event	Possible Outcome (Hazards)	Existing Control Measures	Likelihood	Consequence	Risk Value	CCP?
				<i>Perform routine vulnerability scans and threat assessments</i> <i>Carry out periodic cyber security audits and risk compliance checks</i>				

Table 2: Identified Critical Control Points (CCPs)

CCP	Critical Control Limits	Monitoring Procedures	Response, Reporting and Recording Procedures
Primary Disinfection (Ultra-Violet Irradiation)	UV Intensity Alarm Operational: UV #1 < 48.0 mJ/cm ² for > 60 seconds UV #2 < 48.0 mJ/cm ² for > 60 seconds Regulatory: UV #1 < 40.0 mJ/cm ² for > 600 seconds UV #2 < 40.0 mJ/cm ² for > 600 seconds	SCADA (continuous online analyzers), Trend review and sign-off as per O. Reg. 170/03, Routine on-site checks conducted by OCWA staff Alarms	Well pump shutdown, adverse water quality reporting SOP, CP for Unsafe Water Primary UV Disinfection and Chlorine Secondary Disinfection SOP, Manual well pump and UV Operations SOP, sampling, records, log book CCP exceedances tracked in logbook and/or WMS (Maximo)
Secondary disinfection	Free Chlorine Residual – Distribution Operational Low = 0.25 mg/L Regulatory: Low = 0.05 mg/L Operational High = 4.0 mg/L	SCADA (continuous online analyzers), Distribution chlorine residuals monitored as per O. Reg. 170/03	Well pump shutdown, adverse water quality reporting SOP, Receipt and investigation of water quality complaints, scheduling of sampling, records, log book, Responding to low distribution chlorine or high chlorine SOP, CCP exceedances tracked in logbook and/or WMS (Maximo), CP for Unsafe Water

Note: Standard Operating Procedures (SOPs) referenced in Tables 1 and 2 are controlled as per OP-05 Document and Records Control.



	OPERATIONAL PLAN Mattawa Drinking Water System	QEMS Doc.: OP-08A Rev Date: 2025-07-25 Rev No: 14 Pages: 10 of 13
SUMMARY OF RISK ASSESSMENT OUTCOMES		
Reviewed by: PCT		Approved by: Senior Operations Manager

Table 3: Record of Annual Review/36-Month Risk Assessment

The Drinking Water Quality Management Standard (DWQMS) requires that the currency of the information and the validity of the assumptions used in the risk assessment be verified at least once every calendar year. In addition, the risk assessment must be conducted at least once every thirty-six months.

Date of Activity	Type of Activity	Participants	Summary of Results
2013-08-15	36-Month Risk Assessment	Jim Aucoin, Dan Finnigan	Information in summary remains current and assumptions still valid – small revisions – see revision history
2014-06-05	Annual Review	Dan Finnigan, Raymond Belanger	Information in summary remains current and assumptions still valid – see revision history
2015-08-25	Annual Review	Dan Finnigan, Jim Aucoin	Information in summary remains current and assumptions still valid – see revision history
2016-08-24	36-Month Risk Assessment	Dan Finnigan , Jim Aucoin, John Novack, Josh DeWaal	Information in summary remains current and assumptions still valid – see revision history
2017-11-20	Annual Review	Dan Finnigan	Information in summary remains current and assumptions still valid – see revision history
2019-08-20	36-Month Risk Assessment	Joshua Gravelle (PCT), Joshua DeWaal (Operator), Yvan Rondeau (Safety, Process and Compliance Manager), Paul Dyrda (Senior Operations Manager)	All Activities/Process Steps were re-assessed and new hazardous events and hazards identified (including those in the MECP's "Potential Hazardous Events for Municipal Residential Drinking Water Systems") and ranked according to OP-07 (revision 6). Results captured in Revision 7 of this Summary of Risk Assessment Outcomes
2020-08-26	Annual Review	Joshua Gravelle (PCT), Joshua DeWaal (Operator)	Information in summary remains current and assumptions still valid – see revision history
2021-09-09	Annual Review	Joshua Gravelle (PCT), Joshua DeWaal (Operator)	Information in summary remains current and assumptions still valid – see revision history
2022-04-14	Annual Review	Joshua Gravelle (PCT)	Information in summary remains current and assumptions still valid – small revisions necessary – see revision history
2022-07-13	36-Month Risk Assessment	Joshua Gravelle (PCT), Joshua DeWaal (Operator/Mechanic/ORO), Paul Dyrda (Senior Operations Manager)	Information in summary remains current and assumptions still valid – small revisions necessary – see revision history


 Ontario Clean Water Agency	OPERATIONAL PLAN Mattawa Drinking Water System	QEMS Doc.: OP-08A Rev Date: 2025-07-25 Rev No: 14 Pages: 11 of 13
SUMMARY OF RISK ASSESSMENT OUTCOMES		
Reviewed by: PCT		Approved by: Senior Operations Manager

2023-06-08	Annual Review	Joshua Gravelle (PCT), Joshua DeWaal (Senior Operator)	Information in summary remains current and assumptions still valid – see revision history
2024-09-20	Annual Review	Monique Malette(PCT), Joshua DeWaal	Information in summary remains current and assumptions still valid – see revision history
2025-06-05	36-Month Risk Assessment	Monique Malette (PCT), Joshua DeWaal (Senior Operator / ORO) Paul Dyrda (Senior Operations Manager)	All Activities/Process Steps were re-assessed and no new hazardous events and hazards were identified (including those in the MECP's "Potential Hazardous Events for Municipal Residential Drinking Water Systems") Information in summary remains current and assumptions still valid – small revisions necessary – see revision history

Table 4: Potential Hazardous Event/Hazard Reference Numbers (based on MECP's "Potential Hazardous Events for Municipal Residential Drinking Water Systems" dated April 2022)

If the hazardous event/hazard is not applicable to this drinking water system (DWS), it will be noted in the first column of this table.

System Type (indicate all that apply to this DWS)		Reference Number	Description of Hazardous Event/Hazard
X	All Systems	1	Long Term Impacts of Climate Change
X	All Systems	2	Water supply shortfall
X	All Systems	3	Extreme weather events (e.g., tornado, ice storm)
X	All Systems	4	Sustained extreme temperatures (e.g., heat wave, deep freeze)
X	All Systems	5	Chemical spill impacting source water
X	All Systems	6	Terrorist and vandalism actions
X	Distribution Systems	7	Sustained pressure loss
X	Distribution Systems	8	Backflow
X	Treatment Systems	9	Sudden changes to raw water characteristics (e.g., turbidity, pH)
X	Treatment Systems and Distribution Systems providing secondary disinfection	10	Failure of equipment or process associated with primary disinfection (e.g., coagulant dosing system, filters, UV system, chlorination system)
N/A	Treatment Systems using Surface Water	11	Failure of equipment or process associated with secondary disinfection (e.g., chlorination equipment, chloramination equipment)
		12	Algal blooms

	OPERATIONAL PLAN Mattawa Drinking Water System	QEMS Doc.: OP-08A Rev Date: 2025-07-25 Rev No: 14 Pages: 12 of 13
SUMMARY OF RISK ASSESSMENT OUTCOMES		
Reviewed by: PCT		Approved by: Senior Operations Manager

X	All Systems	13	Cybersecurity threats
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Revision History

Date	Revision #	Reason for Revision
2013-08-15	2	2 nd risk assessment conducted as per QMS procedure and response to internal/external audits (CARS) Present for assessment: Jim Aucoin, Dan Finnigan.
2014-06-05	3	Annual Review conducted by Dan Finnigan / Raymond Belanger. Updated Table 1, updated Table 2 to include operational/regulatory control limits for primary disinfection.
2015-08-25	4	Annual Review conducted by Dan Finnigan / Jim Aucoin. Updated Table 2 to reflect new Operational Limits for Primary Disinfection.
2016-08-24	5	3 rd risk assessment conducted as per QMS procedure. Input from Jim Aucoin, Dan Finnigan, John Novack, Josh DeWaal.
2017-11-20	6	Annual Review conducted by Dan Finnigan. Updated Table 2 to reflect new setpoints for Primary Disinfection and inclusion of new Free chlorine sample analyzer at Point of Entry.
2019-08-20	7	Summary of Risk Assessment Outcomes assigned document number (OP-08A); added table 4 to reference MECP's "Potential Hazardous Events for Municipal Residential Drinking Water Systems"; Table 1 updated to include [hazard]...based on results of 36-month risk assessment that took place on 2019-08-20. Updated existing control measures and response, reporting and recording procedures. Updated alarm set points in table 2. Removed New Operational Free Chlorine analyzer from Table 2 as it is not a CCP due to primary disinfection achieved by UV. Updated to MECP from MOECC. Added reference number 8 from MECP's "Potential Hazardous Events for Municipal Residential Drinking Water Systems" to all loss of pressure outcomes.
2020-09-03	8	Annual risk assessment review completed, added pandemic to risk assessment outcomes and included existing control measures. Minor update to Table 2.
2021-09-22	9	Annual review, updated table 3, no changes to Risk Assessment.
2022-04-14	10	Annual review, updated table 1 and 4 to include MECP's new hazardous event, cybersecurity threats. Added possible outcomes and existing control measures.
2022-07-18	11	36 month risk assessment note added to table 3. Added main PLC failure hazardous event to UV system.

SUMMARY OF RISK ASSESSMENT OUTCOMES	
Reviewed by: PCT	Approved by: Senior Operations Manager

Date	Revision #	Reason for Revision
2023-06-26	12	Annual review, updated table 3, no changes to Risk Assessment. Updated Table 4 to show latest revision date of MECP’s “Potential Hazardous Events for Municipal Residential Drinking Water Systems”.
2024-09-20	13	Annual review, updated table 3, no changes to Risk Assessment. Removed watermark
2025-07-25	14	36 month risk assessment review completed, no changes identified. Updated table 3

 Ontario Clean Water Agency	<p style="text-align: center;">OPERATIONAL PLAN</p> <p style="text-align: center;">Mattawa Drinking Water System</p>	QEMS Proc.: OP-09 Rev Date: 2024-08-26 Rev No: 9 Pages: 1 of 8
ORGANIZATIONAL STRUCTURE, ROLES, RESPONSIBILITIES AND AUTHORITIES		
Reviewed by: PCT	Approved by: Senior Operations Manager	

1. Purpose

To document the following for the Mattawa Drinking Water System:

- Owner;
- Organizational structure of the Operating Authority;
- QEMS roles, responsibilities and authorities of staff, Top Management and individuals/groups that provide corporate oversight; and
- Responsibilities for conducting the Management Review

2. Definitions

Operations Management – refers to the Senior Operations Manager and/or Operations Manager that directly oversees a facility's operations

Senior Leadership Team (SLT) – members include President and CEO, Executive Vice President and General Counsel, Vice Presidents of OCWA's business units and Regional Hub Managers

Top Management – a person, persons or a group of people at the highest management level within an operating authority that makes decisions respecting the QMS and recommendations to the owner respecting the subject system or subject systems

Operations Personnel – Employees of the drinking water system who perform various activities related to the compliance, operations and maintenance of the drinking water system that may directly affect drinking water quality

3. Procedure

3.1 Organizational Structure

The Mattawa Drinking Water System is owned by The Corporation of the Town of Mattawa and is represented by the CAO-Treasurer.

The organizational structure of OCWA, the Operating Authority, is outlined in appendix OP-09A: Organizational Structure.

3.2 Top Management

Top Management for the Mattawa Drinking Water System consists of:

- Operations Management – Near North Cluster
- Regional Hub Manager – North Eastern Ontario Regional Hub
- Operations Management, Capital Projects - North Eastern Ontario Regional Hub
- Safety, Process & Compliance Manager – North Eastern Ontario Regional Hub

	OPERATIONAL PLAN Mattawa Drinking Water System	QEMS Proc.: OP-09 Rev Date: 2024-08-26 Rev No: 9 Pages: 2 of 8
ORGANIZATIONAL STRUCTURE, ROLES, RESPONSIBILITIES AND AUTHORITIES		
Reviewed by: PCT	Approved by: Senior Operations Manager	

Irrespective of other duties (see Table 9-2 below), Top Management’s responsibilities and authorities include:

- Endorsing the Operational Plan as per the Commitment and Endorsement procedure (OP-03);
- Ensuring that the QEMS meets the requirements of the DWQMS;
- Ensuring staff are aware of the applicable legislative and regulatory requirements;
- Communicating the QEMS according to the Communications procedure (OP-12);
- Providing resources needed to maintain and continually improve the QEMS;
- Appointing and authorizing a QEMS Representative (OP-04); and
- Undertaking Management Reviews as per the Management Review procedure (OP-20).

Note: Specific responsibilities of the individual members of Top Management are identified in the referenced procedures.

3.3 Corporate Oversight

Roles, responsibilities and authorities for individuals/groups providing corporate oversight of OCWA’s QEMS are summarized in Table 9-1 below.

Table 9-1: Corporate QEMS Roles, Responsibilities and Authorities

Role	Responsibilities and Authorities
Board of Directors	<ul style="list-style-type: none"> • Set the Agency’s strategic direction, monitor overall performance and ensure appropriate systems and controls are in place in accordance with the Agency’s governing documents • Review and approve the QEMS Policy
Senior Leadership Team (SLT)	<ul style="list-style-type: none"> • Establish the Agency’s organizational structure and governing documents and ensure resources are in place to support strategic initiatives • Monitor and report on OCWA’s operational and business performance to the Board of Directors • Review the QEMS Policy and recommend its approval to the Board • Approve corporate QEMS programs and procedures
Corporate Compliance	<ul style="list-style-type: none"> • Manage the QEMS Policy and corporate QEMS programs and procedures • Provide support for the local implementation of the QEMS • Monitor and report on QEMS performance and any need for improvement to SLT • Consult with the Ministry and other regulators and provide compliance support/guidance on applicable legislative, regulatory and policy requirements • Manage contract with OCWA’s DWQMS accreditation body

 Ontario Clean Water Agency	<p style="text-align: center;">OPERATIONAL PLAN Mattawa Drinking Water System</p>	QEMS Proc.: OP-09 Rev Date: 2024-08-26 Rev No: 9 Pages: 3 of 8
ORGANIZATIONAL STRUCTURE, ROLES, RESPONSIBILITIES AND AUTHORITIES		
Reviewed by: PCT	Approved by: Senior Operations Manager	

3.4 Regional Hub Roles, Responsibilities and Authorities

QEMS roles, responsibilities and authorities of Regional Hub personnel are summarized in Table 9-2 below. This information is kept current as per the Document and Records Control procedure (OP-05) and is communicated to staff as per the Communications procedure (OP-12).

Additional duties of employees are detailed in their job specifications and in the various QEMS programs and procedures that form, or are referenced in, this Operational Plan.

Table 9-2: QEMS Roles, Responsibilities and Authorities for the North Eastern Ontario Regional Hub

Role/ Position	Responsibilities and Authorities
All Operations Personnel	<ul style="list-style-type: none"> • Perform duties in compliance with applicable legislative and regulatory requirements • Be familiar with the QEMS Policy and work in accordance with QEMS programs and procedures • Maintain operator certification (as required) • Attend/participate in training relevant to their duties under the QEMS • Document all operational activities • Identify potential hazards at their facility that could affect the environmental and/or public health and report to Operations Management • Report and act on all operational incidents • Recommend changes to improve the QEMS
Regional Hub Manager (Top Management)	<ul style="list-style-type: none"> • Oversee the administration and delivery of contractual water/wastewater services on a Regional Hub level • Fulfill role of Top Management • Ensure corporate QEMS programs and procedures are implemented consistently throughout the Regional Hub • Manages the planning of training programs for Regional Hub • Report to VP of Operations/SLT on the regional performance of the QEMS and any need for Agency-wide improvement
Operations Management, Capital Projects (Top Management)	<ul style="list-style-type: none"> • Manage the day-to-day operations and maintenance of their assigned facilities and supervise facility operational staff • Fulfill role of Top Management • Ensure corporate and site-specific QEMS programs and procedures are implemented at their assigned facilities • Determine necessary action and assign resources in response to operational issues

ORGANIZATIONAL STRUCTURE, ROLES, RESPONSIBILITIES AND AUTHORITIES

Reviewed by: PCT

Approved by: Senior Operations Manager

Role/ Position	Responsibilities and Authorities
	<ul style="list-style-type: none"> Report to the Regional Hub Manager on facility operational performance Ensure operational training is provided for the cluster (in consultation with the SPC Manager as required) Provide support to the regional operations teams related to planning and execution of capital projects. Develop standard processes to provide efficiency when providing capital project related support to clients (internal/external) Report to the Regional Hub Manager on regional capital project status' Prepare and manage project budgets, ensuring cost-effectiveness Develop detailed project plans, including timelines, budgets and resource allocation. Act as Overall Responsible Operator (ORO) when required. Refer to SOP# ORO-2010
Safety, Process & Compliance (SPC) Manager (Top Management)	<ul style="list-style-type: none"> Supervise facility compliance staff and provide technical and program support to the Regional Hub related to process control and compliant operations Fulfill role of Top Management Ensure corporate/regional QEMS programs and procedures are implemented consistently throughout the Regional Hub Assist in the development of site-specific operational procedures as required Ensure training on applicable legislative and regulatory requirements and the QEMS is provided for the Regional Hub (in consultation with Operations Management as required) Monitor and report to the Regional Hub Manager and Operations Management on the compliance status and QEMS performance within their Regional Hub and any need for improvement Act as alternate QEMS Representative (when required) May act as Operator-in-Charge (OIC) and/or ORO when required (based on certification). Refer to SOP# ORO-2010
Process & Compliance Technician (PCT)/ Operations & Compliance (O&C) Team Lead (QEMS Representative)	<ul style="list-style-type: none"> Implement, monitor and support corporate programs relating to environmental compliance and support management by evaluating and implementing process control systems at their assigned facilities Fulfill role of QEMS Representative (OP-04) Monitor, evaluate and report on compliance/quality status of their assigned facilities Implement facility-specific QEMS programs and procedures consistently at their assigned facilities



Ontario Clean Water Agency

OPERATIONAL PLAN

Mattawa Drinking Water System

QEMS Proc.: OP-09
Rev Date: 2024-08-26
Rev No: 9
Pages: 5 of 8

ORGANIZATIONAL STRUCTURE, ROLES, RESPONSIBILITIES AND AUTHORITIES

Reviewed by: PCT

Approved by: Senior Operations Manager

Role/ Position	Responsibilities and Authorities
	<ul style="list-style-type: none">• Participate in audits and inspections and assist in developing, implementing and monitoring action items to respond to findings• Report to the SPC Manager on QEMS implementation and identify the need for additional/improved processes and procedures at the Regional Hub/cluster/facility level (in consultation with the Operations Management as required)• Communicates to Owners on facility compliance and DWQMS accreditation as directed• Deliver/participate in/coordinate training including applicable legislative and regulatory requirements and the QEMS• May fulfil role of Certified Operator when required (based on certification)
<p>Certified Operator</p> <p>Includes the following positions:</p> <ul style="list-style-type: none">• Operations Supervisor Water & Wastewater• Water & Wastewater Lead• Senior Water & Wastewater Operator• Water & Wastewater Operator• Water & Wastewater Operator-In-Training (OIT)]	<ul style="list-style-type: none">• Perform duties outlined under Operations Personnel• Monitor, maintain and operate facilities in accordance with applicable regulations, approvals and established operating procedures• Collect samples and perform laboratory tests and equipment calibrations as required• Regularly inspect operating equipment, perform routine preventive maintenance and repairs and prepare and complete work orders as assigned• Ensure records of adjustments made to the process under their responsibility, equipment operating status during their shifts and any departures from normal operations observed and actions taken are maintained within facility logs/record keeping mechanisms (as per O. Reg. 128)• Participate in facility inspections and audits• May act as OIC and/or ORO when required (based on certification). Refer to SOP# ORO-2010.• NOTE: OITs cannot act as OIC and/or ORO. OITs perform the above duties under the direction of the OIC/ORO and as assigned by Operations Management or designate.
<p>Maintenance Personnel</p> <p>Includes the following positions:</p> <ul style="list-style-type: none">• Mechanic/Operator• Maintenance Technician• Maintenance Shift Lead	<ul style="list-style-type: none">• Schedule and perform maintenance on equipment and processes in accordance with established procedures and record the maintenance data• Regularly inspect operating equipment, perform routine preventive maintenance and repairs• May fulfill role of Certified Operator when required (based on certification).



Ontario Clean Water Agency

OPERATIONAL PLAN

Mattawa Drinking Water System


QEMS Proc.: OP-09
Rev Date: 2024-08-26
Rev No: 9
Pages: 6 of 8

ORGANIZATIONAL STRUCTURE, ROLES, RESPONSIBILITIES AND AUTHORITIES

Reviewed by: PCT

Approved by: Senior Operations Manager

Role/ Position	Responsibilities and Authorities
<ul style="list-style-type: none">Senior Water & Wastewater Operator,	
Operator(s) (Municipal)	<ul style="list-style-type: none">Perform day to day operations of the distribution systemRepair distribution main breaks and perform required maintenance of the distribution systemAct on and report any incidents of noncompliance or adverse water quality incidents associated with the distribution systemRegularly inspect the distribution systemRespond to and document public complaints
Mechanic/Operator	<ul style="list-style-type: none">Perform duties as assigned by Operations Management or designateAct as lead with other staff on extensive maintenance/repair projectsSchedule and perform maintenance on equipment and processes in accordance with established procedures and record the maintenance dataRegularly inspect operating equipment, perform routine preventive maintenance and repairs
Instrumentation Technician Includes the following positions: <ul style="list-style-type: none">Utility Plant Instrument Technician (UPIT)Utility Plant Electrician OperatorInstrumentation TechnicianOperations Supervisor Water & Wastewater,	<ul style="list-style-type: none">Provide advice and technical expertise on the services required for process control and automation systemsDiscuss and advise on detailed system and programming requirements, modify existing and new software in response to plant requests, analyze and resolve problems/error conditions, document changes/modifications and configure, install and support related software, hardware and network for such systemsConduct inspections of the process control and automation systems to validate that all is operating within established parameters as requestedInstall and commission new electrical/electronic equipment and automation systemsMay fulfill role of Certified Operator as required (based on certification).
Electrical Maintenance Personnel Includes the following positions:	<ul style="list-style-type: none">Perform repairs, inspections, preventive maintenance and/or scheduled maintenance on electrical systems, equipment, components and devices in accordance with established procedures and record the maintenance dataExamine, trouble shoot and carry out systematic diagnostic testing of faults/failures, identification, assessment,

 Ontario Clean Water Agency	OPERATIONAL PLAN Mattawa Drinking Water System	QEMS Proc.: OP-09 Rev Date: 2024-08-26 Rev No: 9 Pages: 7 of 8
ORGANIZATIONAL STRUCTURE, ROLES, RESPONSIBILITIES AND AUTHORITIES		
Reviewed by: PCT	Approved by: Senior Operations Manager	

Role/ Position	Responsibilities and Authorities
<ul style="list-style-type: none"> Utility Plant Electrician Operator Maintenance Electrician Electrician Shift Lead 	repairs/service to equipment, fixtures and other electrical component <ul style="list-style-type: none"> May fulfill role of Certified Operator as required (based on certification)
Administrative Support Includes the following: <ul style="list-style-type: none"> Regional Hub Business Manager Administrative Assistants 	<ul style="list-style-type: none"> Support the administrative functions of the Regional Hub/cluster/facility including coordinating delivery of training as required Assist with entering operational training records into the appropriate database as directed

4. Related Documents

OP-03 Commitment and Endorsement
 OP-04 QEMS Representative
 OP-05 Document and Records Control
 OP-09A Organizational Structure
 OP-12 Communications
 OP-20 Management Review

OCWA Position Descriptions/Job Specifications

5. Revision History



Ontario Clean Water Agency

OPERATIONAL PLAN

Mattawa Drinking Water System

QEMS Proc.: OP-09
Rev Date: 2024-08-26
Rev No: 9
Pages: 8 of 8

ORGANIZATIONAL STRUCTURE, ROLES, RESPONSIBILITIES AND AUTHORITIES

Reviewed by: PCT

Approved by: Senior Operations Manager

Date	Revision #	Reason for Revision
2013-07-30	2	Added revision history, removed all references to RRAM, and inserted QMS Organizational Chart.
2014-06-06	3	Revised org. chart to better reflect QMS, reissued Element.
2015-08-26	4	Revised / updated org chart, changed title to CAO, changed "approver", added QMS Rep to responsibilities section.
2016-08-16	5	Revised policy to include the new bilateral management strategy between the Environmental Services Department and the Public Work Department, revised the org chart, reissued.
2019-07-19	6	DWQMS-9 procedure renamed OP-09 as per OCWA template. Information within OP-09 was originally set out in DWQMS-9 of Mattawa DWS Operational Plan (last revision 5 dated 2016-08-25). New Purpose, Definitions, Procedure, Related Documents and separate Revision History sections. Added definitions for Operations Management and Operations Personnel and throughout procedure replaced 'Senior Operations Manager' references with 'Operations Management'. Incorporated OCWA's new org structure, including SPC Manager. Removed two levels of Top Management (e.g. Facility Level and Corporate level), instead Top Management is only at the facility level and corporate has been moved to Corporate oversight. Reworded QEMS Roles, Responsibilities and Authorities for each position. Added QEMS Roles, Responsibilities and Authorities for Data Clerk. Updated MOECC to MECP and removed the position of data clerk.
2020-04-07	7	Added roles and responsibilities for municipal staff performing functions in the distribution system.
2021-09-22	8	Removed name of personnel in section 3.1.
2024-08-26	9	Procedure updated [update revision history based on your current OP-09 revision history] with revisions to Table 9-2 as follows: Role/Position updated to clarify roles are performed by multiple positions, position titles updated, note added regarding OITs operating limitations. Additional revisions include replaced MECP with Ministry, minor rewording and type-o's, removed watermark.

ORGANIZATIONAL STRUCTURE

Reviewed by: PCT

Approved by: Senior Operations Manager

OPERATING AUTHORITY
Ontario Clean Water Agency

Corporate Oversight

Board of Directors

*President & Chief Executive Officer

*Vice President of Operations

*Vice President of Operations

Director of Operational Support Services

QEMS Coordinators
Compliance Systems
Coordinators

Corporate Compliance

*Regional Hub Manager
Northeastern Ontario
Top Management

Administrative Support

Operations Management
Near North Cluster
Top Management

Safety, Process & Compliance Manager
Top Management
Alternate QEMS Representative

Operations Management
Capital Projects
Top Management

Process & Compliance Technician/
QEMS Representative

OPERATIONS PERSONNEL

- Operations Supervisor
- Senior Water & Wastewater Operator
- Water & Wastewater Operator
- Instrumentation Technician (UPIT, SCADA Support/Operator)
- Electronics Technician/Operator


Day-to-Day Operations of the
Mattawa Water Treatment Plant

**NOTE: Members of OCWA's Senior Leadership Team (SLT) include:*

- President and CEO & Executive Vice President and General Counsel
- Vice Presidents of OCWA's business units (includes VPs of Operations)
- Regional Hub Managers

Day-to-Day
Operations of the
Mattawa
Distribution System

OWNER
Corporation of
the Town of
Mattawa

	<p style="text-align: center;">OPERATIONAL PLAN Mattawa Drinking Water Systems</p>	<p>QEMS Doc.: OP-09A Rev Date: 2024-08-27 Rev No: 3 Pages: 2 of 2</p>
ORGANIZATIONAL STRUCTURE		
Reviewed by: PCT	Approved by: Senior Operations Manager	

Revision History

Date	Revision #	Reason for Revision
2019-07-18	0	Appendix issued - Organizational Chart previously contained in DWQMS-9 of the Operational Plan. Moved to a new Appendix .
2019-10-08	1	Updated Organizational Chart to show that the Town of Mattawa is responsible for the day-to-day operations of the distribution system.
2020-08-27	2	The corporate template OP-09A has been updated to reflect that Corporate Compliance now reports to the VP of Operations (previously reported to Vice President of Engineering, Capital & Support Services).
2024-08-27	3	Revised to include Senior Leadership Team (SLT) in reporting structure and identify members, added Compliance System Coordinators, updated Operations Personnel position titles, removed watermark.

	<p align="center">OPERATIONAL PLAN Mattawa Drinking Water System</p>	<p>QEMS Proc.: OP-10 Rev Date: 2024-08-26 Rev No: 8 Pages: 1 of 7</p>
COMPETENCIES		
Reviewed by: PCT		Approved by: Senior Operations Manager

1. Purpose

To document a procedure that describes:

- the competencies required for personnel performing duties directly affecting drinking water quality;
- the activities to develop and/or maintain those competencies; and
- the activities to ensure personnel are aware of the relevance of their duties and how they affect safe drinking water.

2. Definitions

Competence – the combination of observable and measurable knowledge, skills, and abilities which are required for a person to carry out assigned responsibilities

Operations Management – refers to the Senior Operations Manager and/or Operations Manager that directly oversees a facility's operations

Operations Personnel – employees of the drinking water system who perform various activities related to the compliance, operations and maintenance of the drinking water system that may directly affect drinking water quality

Top Management – a person, persons or a group of people at the highest management level within an operating authority that makes decisions respecting the QMS and recommendations to the Owner respecting the subject system or subject systems

3. Procedure

3.1 The following table presents the minimum competencies required by operations personnel.

Role/Position	Required Minimum Competencies
Operations Management (Top Management)	<ul style="list-style-type: none"> • Valid operator certification; if required to act as Overall Responsible Operator (ORO), certification must be at the level of the facility or higher • Experience and/or training in managing/supervising drinking water system operations, maintenance, financial planning and administration • Training and/or experience related to drinking water system processes, principles and technologies • Training on OCWA's QEMS and the DWQMS • Training on relevant legislation, regulations, codes, policies, guidelines and procedures • Experience using computers and operational computerized systems

COMPETENCIES

Reviewed by: PCT

Approved by: Senior Operations Manager

Role/Position	Required Minimum Competencies
<p>Safety, Process & Compliance (SPC) Manager</p> <p>(Top Management)</p> <p>(May also fulfill the role of Alternate QEMS Representative)</p>	<ul style="list-style-type: none"> Valid operator certification required to fulfil certified operator duties (if assigned). Experience in providing technical support and leading/managing programs related to process control and compliant operations Experience and/or training in conducting compliance audits, and management system audits Experience and/or training in preparing and presenting informational and training material Training on OCWA's QEMS and the DWQMS Training on relevant legislation, regulations, codes, policies, guidelines and procedures Experience using computers and operational computerized systems
<p>Process & Compliance Technician, Operations and Compliance Team Lead</p> <p>(QEMS Representative)</p>	<ul style="list-style-type: none"> Valid operator certification required to fulfil certified operator duties (if assigned) Experience and/or training in resolving/addressing compliance issues for drinking water systems Experience and/or training in monitoring, assessing and reporting on facility performance against legal requirements and corporate goals Experience and/or training in preparing and presenting informational and training material Experience in conducting management system audits or internal auditor education/training Training on OCWA's QEMS and the DWQMS Training on relevant legislation, regulations, codes, policies, guidelines and procedures Experience using computers and operational computerized systems
<p>Certified Operator</p> <p>Includes the following:</p> <ul style="list-style-type: none"> Operations Supervisor Water & Wastewater Water & Wastewater Lead Senior Water & Wastewater Operator Water & Wastewater Operator 	<ul style="list-style-type: none"> Valid operator certification If required to act as ORO, certification must be at the level of the facility or higher If required to act as Operator-in-Charge (OIC), certification must be level 1 or higher Training and/or experience in inspecting and monitoring drinking water system processes and performing/planning maintenance activities Training on OCWA's QEMS and the DWQMS Training on relevant legislation, regulations, codes, policies, guidelines and procedures Experience using computers and operational computerized systems

COMPETENCIES

Reviewed by: PCT

Approved by: Senior Operations Manager

Role/Position	Required Minimum Competencies
Water & Wastewater Operator-in-Training	
Operator(s) (Municipal)	<ul style="list-style-type: none"> • Operator certification in good standing; minimum distribution class 1 or operator-in-training (OIT) • Knowledge and awareness of the DWQMS • Experience and knowledge of the maintenance and repair of a variety of equipment and structures • Good working knowledge of legislation, regulations, codes, policies, guidelines and procedures related to operations and maintenance • Basic mathematics and chemistry • Familiarity with computers, monitoring and operating systems • Knowledge to use and understand operating and maintenance manuals, blueprints and other technical specifications • Planning, scheduling and problem-solving skills to regularly inspect and monitor the facility, processes and equipment and perform routine preventative maintenance • Good oral and written communication skills • Ability to work in a team and take initiative when required.
Maintenance Personnel Includes the following: <ul style="list-style-type: none"> • Mechanic/Operator • Maintenance Technician • Maintenance Shift Lead Operations Supervisor Water & Wastewater	<ul style="list-style-type: none"> • Valid operator certification required to fulfil certified operator duties (if assigned) • Millwright and/or other trades certificates • Experience in maintaining and repairing equipment and structures and in planning and scheduling maintenance and repair tasks • Training and/or experience related to drinking water system processes • Training on OCWA's QEMS and the DWQMS • Training on relevant legislation, regulations, codes, policies, guidelines and procedures • Experience using computers and operational computerized systems
Instrumentation Technician Includes the following: <ul style="list-style-type: none"> • Utility Plant Instrument Technician • Instrumentation Technician 	<ul style="list-style-type: none"> • Valid operator certification required to fulfil certified operator duties (if assigned) • Experience and/or training in monitoring, programming, installing and troubleshooting network, hardware, software and instrumentation • Experience and/or training in drinking water system processes, design, instrumentation, process control and automation systems • Experience in performing maintenance and repair of electrical and electronic equipment • Training on OCWA's QEMS and the DWQMS

 Ontario Clean Water Agency	OPERATIONAL PLAN Mattawa Drinking Water System	QEMS Proc.: OP-10 Rev Date: 2024-08-26 Rev No: 8 Pages: 4 of 7
COMPETENCIES		
Reviewed by: PCT	Approved by: Senior Operations Manager	

Role/Position	Required Minimum Competencies
	<ul style="list-style-type: none"> • Training on relevant legislation, regulations, codes, policies, guidelines and procedures • Experience using computers and operational computerized systems
Electrical Maintenance Personnel Includes the following: <ul style="list-style-type: none"> • Utility Plant Electrician Operator • Maintenance Electrician • Electrician Shift Lead 	<ul style="list-style-type: none"> • Valid operator certification required to fulfil certified operator duties (if assigned) • Completion of any electrical or electronic training program certified by the Ministry of Advanced Education and Skills Development (formerly the Ministry of Training, Colleges and Universities) • Experience in performing maintenance and repair of electrical and electronic equipment • Training on OCWA's QEMS and the DWQMS • Training on relevant legislation, regulations, codes, policies, guidelines and procedures • Experience using computers and operational computerized systems

3.2 The following table presents the minimum competencies required by staff that provide administrative support to operations personnel.

Role and/or Position	Required Minimum Competencies
Administrative Support Includes the following: Regional Business Hub Manager, Administrative Assistants	<ul style="list-style-type: none"> • Experience and/or training related to procurement and business administration practices • Training on OCWA's QEMS and the DWQMS • Training on relevant legislation, regulations, codes, policies, guidelines and procedures • Experience using computers

3.3 OCWA's recruiting and hiring practices follow those of the Ontario Public Service (OPS). As part of the OPS, minimum competencies, which include education, skills, knowledge and experience requirements, are established when designing the job description for a particular position. As part of the recruitment process, competencies are then evaluated against the job description. Based on this evaluation, the hiring manager selects and assigns personnel for specific duties.

3.4 OCWA's Operational Training Program aims to:

 Ontario Clean Water Agency	<p style="text-align: center;">OPERATIONAL PLAN Mattawa Drinking Water System</p>	QEMS Proc.: OP-10 Rev Date: 2024-08-26 Rev No: 8 Pages: 5 of 7
COMPETENCIES		
Reviewed by: PCT	Approved by: Senior Operations Manager	

- Develop the skills and increase the knowledge of staff and management;
- Provide staff with information and access to resources that can assist them in performing their duties; and
- Assist OCWA certified operators in meeting the legislative and regulatory requirements with respect to training.

- 3.5 The Program consists of Director Approved, continuing education and on-the-job training and is delivered using a combination of methods (e.g., traditional classroom courses, e-learning/webinars and custom/program-based courses/sessions). A formal evaluation process is in place for all sessions under the Operational Training Program and is a critical part of the Program's continual improvement.
- 3.6 Awareness of OCWA's QEMS is promoted during the orientation of new staff, at facility/cluster/regional hub level training sessions and meetings and through OCWA's Environmental Compliance 101 (EC 101) course. All new staff are required to complete the EC 101 course within their first year of joining OCWA. The purpose of the EC 101 course is to ensure staff are aware of applicable legislative and regulatory requirements, to promote awareness of OCWA's QEMS and to reinforce their roles and responsibilities under OCWA's QEMS.
- 3.7 Staff are also required to complete the training listed in OCWA's Mandatory Training Requirements procedure, based on their position and/or the duties they perform. This list includes mandatory environmental and health and safety compliance training, as well as the training deemed mandatory by OCWA corporate and Ontario Public Service (OPS) policies and is available on OCWA's intranet (sharepoint site).
- 3.8 Operations personnel also receive site-specific training/instruction on relevant operational and emergency response procedures to ensure effective operational control of processes and equipment which may impact the safety and quality of drinking water.
- 3.9 As part of OCWA's annual Performance Planning and Review (PPR) process, employee performance is evaluated against their job expectations. Professional development opportunities and training needs (which could include formalized courses as well as site-specific on-the-job training or job shadowing/mentoring) are identified as part of this process (and on an ongoing basis). In addition to this process, OCWA employees may at any time request training from either internal or external providers by obtaining approval from their Manager.
- 3.10 Certified drinking water operators are responsible for completing the required number of training hours in order to renew their certificates based on the highest class of drinking water subsystem they operate. They are also responsible for completing mandatory courses required by *Safe Drinking Water Act* (SDWA) O. Reg. 128/04 Certification of Drinking Water System Operators and Water Quality Analysts. The Operations Management takes reasonable steps to ensure that every operator has the

 Ontario Clean Water Agency	OPERATIONAL PLAN Mattawa Drinking Water System	QEMS Proc.: OP-10 Rev Date: 2024-08-26 Rev No: 8 Pages: 6 of 7
COMPETENCIES		
Reviewed by: PCT	Approved by: Senior Operations Manager	

opportunity to attend training to meet the requirements.


3.11 It is the responsibility of operations personnel to ensure Operations Management are aware of any change to the status/classification of their drinking water operator certificate(s), the validity of their driver's licence (required to hold at a minimum a Class G license which is initially verified upon hire) and/or the validity of any other required certificates/qualifications.


3.12 Individual OCWA employee training records are maintained and tracked using a computerized system, the Training Summary database, which is administrated by OCWA's Learning and Development Department. Training records maintained at the facility are controlled as per OP-05 Document and Records Control.

4. Related Documents

OCWA's Training Resources (OCWA Intranet/sharepoint)
 [Orientation checklists/documentation]
 OCWA's Mandatory Compliance Training Requirements (OCWA intranet/sharepoint)
 Performance Planning and Review Database
 OP-05 Document and Records Control
 OCWA Training Summary Database

5. Revision History

	<p style="text-align: center;">OPERATIONAL PLAN Mattawa Drinking Water System</p>	<p>QEMS Proc.: OP-10 Rev Date: 2024-08-26 Rev No: 8 Pages: 7 of 7</p>
COMPETENCIES		
Reviewed by: PCT		Approved by: Senior Operations Manager
Date	Revision #	Reason for Revision
2013-07-30	2	Added revision history, removed all references to RMM, updated policy to include training matrix.
2014-06-06	3	Reworded procedure and responsibilities sections to meet current practices. Reissued for approval.
2015-08-26	4	Changed “approver”.
2016-08-17	5	Minor wording changes, re-issued.
2019-07-23	6	<p>DWQMS-10 procedure renamed OP-10 as per OCWA template. Information within OP-10 was originally set out in DWQMS-10 of Mattawa DWS Operational Plan (last revision 5 dated 2016-08-25). New Purpose, Definitions, Procedure, Related Documents and separate Revision History sections. Added definitions for Operations Management and Operations Personnel and throughout procedure replaced ‘Senior Operations Manager’ references with ‘Operations Management’. Modified table in procedure (s. 3.1 and s. 3.2): removed/revised non-measurable competencies, added the word ‘minimum’ to competencies; removed ‘Valid Class G Driver’s License’ listed under individual positions and referenced in s. 3.11; added competencies for SPC Managers and Admin Assistants and merged competencies for Senior Operations Manager and Operations Manager under Operations Management. Updated training sections (s. 3.4 to s. 3.7) to reference new Environmental 101 course, Mandatory Compliance Training list and removed specific references to Orientation Training Program. Added s. 3.11 related to ensuring operators make Operations Management aware of changes to operator certification and other certificates/licenses. Other minor changes to wording. Un-highlighted “minimum” in the competency table. Updated competencies for Instrumentation Technician/Maintenance Electrician, as two competencies were listed twice. Removed the minimum competencies required by a data clerk – this position is being eliminated.</p>
2020-04-07	7	Added competencies for municipal staff performing functions in the distribution system.
2024-08-26	8	Procedure updated with revisions to table in 3.1 Role/Position updated to clarify roles are performed by multiple positions, position titles updated, removed watermark, updated Procedure to reflect changes to title and content of OCWA’s Mandatory Training Requirements Document, added sharepoint.

	<p style="text-align: center;">OPERATIONAL PLAN Mattawa Drinking Water System</p>	<p>QEMS Proc.: OP-11 Rev Date: 2025-07-23 Rev No: 11 Pages: 1 of 4</p>
PERSONNEL COVERAGE		
Reviewed by: PCT	Approved by: Senior Operations Manager	

1. Purpose

To describe the procedure for ensuring that sufficient and competent personnel are available for duties that directly affect drinking water quality at the Mattawa Drinking Water System.

2. Definitions

Competency – an integrated set of requisite skills and knowledge that enables an individual to effectively perform the activities of a given occupation *

Essential Services – services that are necessary to enable the employer to prevent,

- (a) danger to life, health or safety,
- (b) the destruction or serious deterioration of machinery, equipment or premises,
- (c) serious environmental damage, or
- (d) disruption of the administration of the courts or of legislative drafting.

(*Crown Employees Collective Bargaining Act*, 1993)

3. Procedure

Water Treatment Plant

3.1 Operations Management ensures that personnel meeting the competencies identified in OP-10 Competencies are available for duties that directly affect drinking water quality.

3.2 The Mattawa Drinking Water System is staffed by OCWA personnel as follows:


Covered 24/7 and staffed to the level to meet regulatory requirements and to ensure compliant operations. Employees maintain availability during regular business hours from 0730 to 1600, Monday to Friday, with flexible assignment across various facilities rather than a fixed location. 24/7 coverage is accomplished by SCADA monitoring and on-call staff during non-regular hours (e.g. evenings and weekends and Statutory Holidays).

3.3 Operations personnel are assigned to act as and fulfill the duties of Overall Responsible Operator (ORO) and Operator-in-Charge (OIC) in accordance with SDWA O. Reg. 128/04.

A designated operator is the designated overall responsible operator (ORO). When the designated operator is unavailable, a backup is designated as the ORO and is recorded as such in the facility logbook. Refer to SOP - ORO-2010.

The designated OIC for each shift is recorded in the facility logbook.

* Based on the 2005 National Occupational Guidelines for Canadian Water and Wastewater Operators and International Board of Standards for Training, Performance and Instruction


	<p style="text-align: center;">OPERATIONAL PLAN Mattawa Drinking Water System</p>	<p>QEMS Proc.: OP-11 Rev Date: 2025-07-23 Rev No: 11 Pages: 2 of 4</p>
PERSONNEL COVERAGE		
Reviewed by: PCT	Approved by: Senior Operations Manager	

- 3.4 Operations Management assigns an on-call operator for the time that the facility is un-staffed (i.e., evenings, weekends and Statutory Holidays). The on-call shift change is beginning of the business day on Monday. The on-call responsibilities alternate weekly.
- 3.5 The operator(s) conducts a remote and/or on-site inspection of the facility at least once per day during the weekdays and at least once per weekend during Statutory Holidays. Details of the inspection are recorded in facility logbook and/or round sheets.
- 3.6 Facility alarms are programmed to call Telus Alarm Monitoring Service who then contacts the on-call operator via cell phone whenever there is an alarm condition. If the nature of the alarm requires additional staff, the on-call operator can request assistance from any of the other certified operators in the NEO Hub. The on-call operator records details of the call-in in the facility logbook and in OCWA's WMS.
- 3.7 Operations Management is responsible for approving vacation time for their staff in a manner which ensures sufficient personnel are available for the performance of normal operating duties.
- 3.8 OCWA's operations personnel are represented by the Ontario Public Service Employees Union (OPSEU). In the event of a labour disruption, Operations Management, together with the union, identifies operations personnel to provide "essential services" required to operate the facility so that the quality of drinking water is not compromised in any way.
- 3.9 A contingency plan for Critical Shortage of Staff is included in the Facility Emergency Plan. This plan provides direction in the event that there is a severe shortage of operations personnel due to sickness (e.g., pandemic flu) or other unusual situations.

Distribution System

- 3.10 Staff are on duty as follows: Monday to Friday 7:00 am to 4:00 pm
Staff are assigned on-call duties for the remaining time (weekends, holidays, after regular work hours etc.)
- 3.11 In application of SDWA O. Reg. 128/04 OCWA is the designated overall responsible operator (ORO). The overall responsible operator (ORO) is rotated on a weekly basis. Please refer to SOP - ORO-2010.

A licensed Public Works Operator acts as OIC on a daily basis and this is recorded in the distribution log book.

	<p align="center">OPERATIONAL PLAN Mattawa Drinking Water System</p>	<p>QEMS Proc.: OP-11 Rev Date: 2025-07-23 Rev No: 11 Pages: 3 of 4</p>
PERSONNEL COVERAGE		
Reviewed by: PCT	Approved by: Senior Operations Manager	

3.12 The CAO is responsible for approving annual vacation time for staff in a manner which ensures sufficient personnel are available for the performance of normal operating duties. Day to day vacation requests are approved by the Public Works Supervisor in a manner which ensures sufficient personnel are available for the performance of normal operating duties.

3.13 In the event of a labour disruption, the CAO will take appropriate steps to ensure minimal impact to the delivery of water services.

4. Related Documents

OP-10 Competencies
Facility Logbook
Round Sheets
Call-In Reports
Vacation/On-call Schedule
Critical Shortage of Staff Contingency Plan (Facility Emergency Plan)
SOP – ORO-2010

5. Revision History



OPERATIONAL PLAN

Mattawa Drinking Water System


QEMS Proc.: OP-11
Rev Date: 2025-07-23
Rev No: 11
Pages: 4 of 4

PERSONNEL COVERAGE

Reviewed by: PCT

Approved by: Senior Operations Manager

Date	Revision #	Reason for Revision
2013-08-01	2	Added revision history, removed all references to RRAM.
2014-06-06	3	Replace competent with certified, other minor rewording. Reissued for approval.
2015-08-26	4	Replaced “approver”, added responsibilities of ORO.
2016-08-17	5	Minor wording changes, updated and re-issued.
2019-07-19	6	DWQMS-11 procedure renamed OP-11 as per OCWA template. Information within OP-11 was originally set out in DWQMS-11 of Mattawa DWS Operational Plan (last revision 5 dated 2016-08-25). Removed Scope and Responsibilities sections. Other minor edits in wording. Updated section 3.6 to include True Steel Alarm Monitoring Service. Updated section 3.6 to read facility alarms.
2020-09-03	7	Updated section 3.5 to capture remote Wonderware checks completed by other operators.
2022-07-18	8	Added sections 3.10 to 3.13 to capture Town distribution operations.
2024-11-28	9	Removed watermark
2025-06-24	10	Updated section 3.6 changed True Steel to Telus.
2025-07-23	11	Updated section 3.2 added clarity regarding regular business hours. Updated section 3.10 Mattawa now covering on call for the distribution system.

 Ontario Clean Water Agency	OPERATIONAL PLAN Mattawa Drinking Water System	QEMS Proc.: OP-12 Rev Date: 2024-06-17 Rev No: 8 Pages: 1 of 4
COMMUNICATIONS		
Reviewed by: PCT	Approved by: Senior Operations Manager	

1. Purpose

To describe the procedure for facility level internal and external QEMS-related communications between Top Management and:

- OCWA staff;
- the Owner;
- suppliers of essential supplies and services (as identified in OP-13); and
- the public.

2. Definitions

Operations Management – refers to the Senior Operations Manager and/or Operations Manager that directly oversees a facility's operations

Operations Personnel – employees of the drinking water system who perform various activities related to the compliance, operations and maintenance of the drinking water system that may directly affect drinking water quality.

3. Procedure

3.1 Operations Management and the QEMS Representative are responsible for identifying and coordinating any site-specific communications in relation to the status/development of the facility's QEMS.

3.2 Internal and external communication responsibilities and reporting requirements for emergency situations are set out under OCWA's Emergency Management Program (i.e., Facility Emergency Plan and OCWA's Corporate Emergency Response Plan). Refer to OP-18 Emergency Management for more information.

3.3 Communication with OCWA staff:

3.3.1 Within the first year of hire, all staff are required to complete the Environmental Compliance 101 (EC101) course. The objective of the EC 101 course is to ensure that staff are aware of applicable legislative and regulatory requirements and of OCWA's QEMS and to reinforce their roles and responsibilities under OCWA's QEMS.

3.3.2 Operations Management are responsible for ensuring operations personnel receive site-specific training on the Operational Plan, the organizational structure for the facility including the roles and responsibilities and authorities (outlined in OP-09 Organizational Structure, Roles, Responsibilities and Authorities), QEMS Procedures and other related operating instructions and procedures as part of the orientation process and on an on-going basis as required.

 Ontario Clean Water Agency	<p style="text-align: center;">OPERATIONAL PLAN Mattawa Drinking Water System</p>	QEMS Proc.: OP-12 Rev Date: 2024-06-17 Rev No: 8 Pages: 2 of 4
COMMUNICATIONS		
Reviewed by: PCT	Approved by: Senior Operations Manager	

3.3.3 The Safety Process and Compliance Manager is responsible for ensuring training is provided for the Regional Hub (in consultation with Operations Management as required) on applicable legislative and regulatory requirements and the QEMS.

3.3.4 The QEMS Representative assists Operations Management and/or the SPC Manager in the coordination/delivery of training as required.

3.3.5 Revisions to the QEMS and associated documentation are communicated as per OP-05 Document and Records Control.

3.3.6 The QEMS Policy is available to all OCWA personnel through OCWA's intranet and as outlined in 3.6.2 of this procedure.

3.3.7 Operations personnel are responsible for identifying potential hazards at the facility that could affect the environmental and/or public health, and communicating these to Operations Management. They may also recommend changes be made to improve the facility's QEMS by making a request to the QEMS Representative (as per OP-05).

3.3.8 The QEMS Representative is responsible for ensuring that the Operations Management and the Safety, Process and Compliance Manager are informed regarding the compliance/quality status of the facility and QEMS implementation and any need for improved processes/procedures at the cluster/facility level.

3.3.9 The SPC Manager reports to the Regional Hub Manager on the compliance status, the QEMS performance and effectiveness, any need for improvement and on issues that may have Agency-wide significance. Operations Management reports to the Regional Hub Manager on facility operational performance.

3.4 Communication with the Owner:

3.4.1 The Regional Hub Manager, Operations Management, SPC Manager ensures that the Owner is provided with QEMS updates and that they are kept informed of the status of the facility's operational and compliance performance during regularly scheduled meetings and/or through electronic and/or verbal communications. The QEMS Representative/PCT assists in the coordination of these meetings and with communicating the updates as directed.

3.4.2 The continuing suitability, adequacy and effectiveness of OCWA's QEMS are communicated to the Owner as part of the Management Review process (refer to OP-20 Management Review).

 Ontario Clean Water Agency	<p align="center">OPERATIONAL PLAN</p> <p align="center">Mattawa Drinking Water System</p>	QEMS Proc.: OP-12 Rev Date: 2024-06-17 Rev No: 8 Pages: 3 of 4
COMMUNICATIONS		
Reviewed by: PCT	Approved by: Senior Operations Manager	

3.5 Communications with Suppliers of Essential Supplies and Services:

3.5.1 Communication requirements to ensure suppliers of essential supplies and services understand the relevant OCWA QEMS policies, procedures and expectations are described in OP-13 Essential Supplies and Services.

3.6 Communication with the Public:

3.6.1 Media enquiries must be directed to the facility's designated media spokesperson as identified in the Facility Emergency Plan. The media spokesperson coordinates with local and corporate personnel (as appropriate) and the Owner in responding to media enquiries.

3.6.2 OCWA's QEMS and QEMS Policy are communicated to the public through OCWA's public website (www.ocwa.com). The QEMS Policy is also posted at Mattawa Well House.

3.6.3 Facility tours of interested parties must be approved in advance by the Operations Management. Also, facility tours are documented in facility log book.

3.6.4 All complaints, whether received from the consumer, the community or other interested parties, are documented on a community complaint form. As appropriate, the Operations Management ensures that the Owner is informed of the complaint and/or an action is developed to address the issue in a timely manner. The QEMS Representative ensures that consumer feedback is included for discussion at the Management Review.


4. Related Documents

OP-05 Document and Records Control
 OP-09 Organizational Structure, Roles, Responsibilities and Authorities
 OP-13 Essential Supplies and Services
 OP-18 Emergency Management
 OP-20 Management Review
 Facility Emergency Plan
 Corporate Emergency Response Plan
 Community Complaint Form

 Ontario Clean Water Agency	OPERATIONAL PLAN Mattawa Drinking Water System	QEMS Proc.: OP-12 Rev Date: 2024-06-17 Rev No: 8 Pages: 4 of 4
COMMUNICATIONS		
Reviewed by: PCT	Approved by: Senior Operations Manager	

5. Revision History

Date	Revision #	Reason for Revision
2013-08-01	2	Added revision history, removed all references to RMM, updated policy to include training matrix.
2014-06-06	3	Updated policy to better reflect current practices, further defined responsibilities section, updated references section.
2015-08-26	4	Changed "approver" changed responsibilities of QMS rep and Public Works Superintendent.
2016-08-17	5	Minor wording changes, removed PW Superintendent from responsibilities, etc.
2019-07-23	6	DWQMS-12 procedure renamed OP-12 as per OCWA template. Information within OP-12 was originally set out in DWQMS-12 of Mattawa DWS Operational Plan (last revision 5 dated 2016-08-25). Removed Scope and Responsibilities sections. Added definitions for Operations Management and Operations Personnel. Reordered and created separate sections to clarify communications to each of the 4 parties. Clarified suppliers were those listed as essential as per Element 13 (as per DWQMS v. 2.0) and replaced references to Senior Operations Manager with 'Operations Management'. Updated training sections for OCWA personnel (s. 3.3.1 to s. 3.3.4) to reference new Environmental Compliance 101 course completed within first year of hire and to outline how training is coordinated between SPC Manager/Operations Management, and QEMS Representative. Included sections on R&Rs for performance reporting within OCWA (s. 3.3.7 to s. 3.3.9) and to Client (3.4.1). Replaced identification of media spokesperson (s. 3.6.1) with 'as identified in Facility Emergency Plan'. Added reference to site-specific records/documents used for recording tours (s. 3.6.3). Other minor edits. Added Community Complaint Form to section 4.
2021-09-22	7	Updated OP-12 with phrase "suppliers of essential supplies and services", as it is the products and services that are essential, and not the suppliers.
2024-06-17	8	Procedure revised to reference updated title of Corporate Emergency Response Plan, removed watermark.

	<p style="text-align: center;">OPERATIONAL PLAN Mattawa Drinking Water System</p>	<p>QEMS Proc.: OP-13 Rev Date: 2024-11-28 Rev No: 7 Pages: 1 of 3</p>
ESSENTIAL SUPPLIES AND SERVICES		
Reviewed by: PCT	Approved by: Senior Operations Manager	

1. Purpose

To describe OCWA's procedures for procurement and for ensuring the quality of essential supplies and services.

2. Definitions

Essential Supplies and Services – supplies and services deemed to be critical to the delivery of safe drinking water

3. Procedure

3.1 Essential supplies and services for the Mattawa Drinking Water System are contained in the Facility Emergency Plan, Essential Supplies and Services List. The list is reviewed and updated at least once every calendar year by the QEMS Representative.

3.2 Purchasing is conducted in accordance with OCWA's Corporate Procurement and Administration policies, procedures and guidelines, which are adopted from those of the Ontario Public Service.

Purchases of capital equipment are subject to formal approval by the facility's owner.

3.3 As part of the corporate procurement process, potential suppliers/service providers are informed of relevant aspects of OCWA's QEMS through the tendering process and through specific terms and conditions set out in our agreements and purchase orders. Essential suppliers and service providers (including those contracted locally) are sent a letter that provides an overview of the relevant aspects of the QEMS.

3.4 Contractors are selected based on their qualifications and ability to meet the facility's needs without compromising operational performance and compliance with applicable legislation and regulations.

Contracted personnel including suppliers may be requested or required to participate in additional relevant training/orientation activities to ensure conformance with facility procedures and to become familiar with OCWA workplaces.

If necessary, appropriate control measures are implemented while contracted work is being carried out and communicated to all relevant parties to minimize the risk to the integrity of the drinking water system and the environment.

3.5 All third-party drinking water testing services are provided by accredited and licensed laboratories. The Ministry of the Environment, Conservation and Parks (MECP) has agreement with The Canadian Association for Laboratory Accreditation (CALA) for accreditation of laboratories testing drinking water. The QEMS Representative is responsible for notifying the MECP of any change to the drinking water testing services being utilized.

	<p style="text-align: center;">OPERATIONAL PLAN Mattawa Drinking Water System</p>	<p>QEMS Proc.: OP-13 Rev Date: 2024-11-28 Rev No: 7 Pages: 2 of 3</p>
ESSENTIAL SUPPLIES AND SERVICES		
Reviewed by: PCT	Approved by: Senior Operations Manager	

- 3.6 Internal verification and calibration activities (e.g. chlorine analyzer, turbidimeter, flow meters etc.) are conducted by operations personnel in accordance with equipment manuals and/or procedures (Refer to OP-17 Measurement Recording Equipment Calibration and Maintenance).
- 3.7 External calibration activities (e.g. portable chlorine analyzers and portable turbidity analyzers) are conducted by qualified third-party providers. Qualifications of the service provider are verified during the procurement process. The service provider is responsible for providing a record/certificate of all calibrations conducted.
- 3.8 Chemicals purchased for use in the drinking water treatment process must meet AWWA Standards and be ANSI/NSF certified as per the Municipal Drinking Water Licence (MDWL).
- 3.9 The facility orders and receives ongoing deliveries of chemicals to satisfy current short-term needs based on processing volumes and storage capacities. Incoming chemical orders are verified by reviewing the manifest or invoice in order to confirm that the product received is the product ordered.
- 3.10 Process components/equipment provided by the supplier must meet applicable regulatory requirements and industry standards for use in drinking water systems prior to their installation.


4. Related Documents

Essential Supplies and Services List
OP-17 Measurement Recording Equipment Calibration and Maintenance
ANSI/NSF Documentation
AWWA Standards
MDWL
Calibration Certificates/Records

	<p style="text-align: center;">OPERATIONAL PLAN Mattawa Drinking Water System</p>	<p>QEMS Proc.: OP-13 Rev Date: 2024-11-28 Rev No: 7 Pages: 3 of 3</p>
ESSENTIAL SUPPLIES AND SERVICES		
Reviewed by: PCT	Approved by: Senior Operations Manager	

5. Revision History

Date	Revision #	Reason for Revision
2013-08-01	2	Added revision history, removed all references to RRAM.
2014-06-06	3	Updated policy section and removed responsibilities section to better mirror current practices. Reissued for approval.
2015-08-26	4	Changed “approver”.
2016-08-17	5	Minor wording changes, re-issued for approval.
2019-07-19	6	DWQMS-13 procedure renamed OP-13 as per OCWA template. Information within OP-13 was originally set out in DWQMS-13 of Mattawa DWS Operational Plan (last revision 5 dated 2016-08-25). Removed Scope and Responsibilities sections. Changes to wording to provide clarification on ensuring quality of essential supplies and services (s. 3.5, 3.6, 3.7 and 3.9). Updated MOECC to MECP.
2024-11-28	7	Removed watermark

	<p style="text-align: center;">OPERATIONAL PLAN Mattawa Drinking Water System</p>	<p>QEMS Proc.: OP-14 Rev Date: 2024-11-28 Rev No: 7 Pages: 1 of 2</p>
REVIEW AND PROVISION OF INFRASTRUCTURE		
Reviewed by: PCT	Approved by: Senior Operations Manager	

1. Purpose

To describe OCWA's procedure for reviewing the adequacy of infrastructure necessary to operate and maintain the Mattawa Drinking Water System.

2. Definitions

Infrastructure – the set of interconnected structural elements that provide the framework for supporting the operation of the drinking water system, including buildings, workspace, process equipment, hardware, software and supporting services, such as transport or communication

3. Procedure

3.1 At least once every calendar year, Operations Management in conjunction with operations personnel (Senior Operator, PCT, operators and mechanic/operator) conducts a review of the drinking water system's infrastructure to assess its adequacy for the operation and maintenance of the system. Operations personnel assist with identifying the need for infrastructure repairs, replacements or alterations and with prioritizing each identified item. Documents and records that are reviewed may include:


- Maintenance records
- Call-in reports
- Adverse Water Quality Incidents (AWQIs) or other incidents
- Health & Safety Inspections
- MECP Inspection Reports
- QEMS Audit Reports

3.2 The outcomes of the risk assessment documented as per OP-08 are considered as part of this review.

3.3 The output of the review is a 5 year minimum rolling Capital and Major Maintenance Recommendations Report to assist the Owner and OCWA with planning infrastructure needs for the short and long-term. A letter, summarizing capital works recommendations and estimated expenditures for the upcoming year, is submitted to the Owner for review and approval. A capital letter is submitted, at least once every calendar year by Operations Management.

3.4 The final approved capital items form the long term forecast for any major infrastructure maintenance, rehabilitation and renewal activities as per OP-15.

3.5 Operations Management ensures that results of this review are considered during the Management Review process (OP-20).


	<p style="text-align: center;">OPERATIONAL PLAN Mattawa Drinking Water System</p>	<p>QEMS Proc.: OP-14 Rev Date: 2024-11-28 Rev No: 7 Pages: 2 of 2</p>
REVIEW AND PROVISION OF INFRASTRUCTURE		
Reviewed by: PCT	Approved by: Senior Operations Manager	

4. Related Documents

OP-08 Risk Assessment Outcomes
 OP-15 Infrastructure Maintenance, Rehabilitation and Renewal
 OP-20 Management Review
 Capital and Major Maintenance Recommendations Report
 Capital Letter & Acknowledgement/Approval from the owner
 Management Review Minutes

5. Revision History

Date	Revision #	Reason for Revision
2013-08-01	2	Added revision history, removed all references to RRAM, revised procedure to mirror current practices.
2014-06-11	3	Reviewed procedure and reissued as revision 3.
2015-08-27	4	Changed "approver", substituted Public Works Department for Public Works Superintendent, added ORO.
2016-08-17	5	Minor wording changes, replaced PW Department with Environmental Services Department, re-Issued.
2019-07-23	6	DWQMS-14 procedure renamed OP-14 as per OCWA template. Information within OP-14 was originally set out in DWQMS-14 of Mattawa DWS Operational Plan (last revision 5 dated 2016-08-25) Removed Scope and Responsibilities sections. Replaced 'once every 12 months' with 'once every calendar year' (s. 3.1) to reflect wording in DWQMS v. 2.0. Added s. 3.2 to consider the outcomes of the risk assessment under Element 8 during the review to reflect wording in DWQMS v. 2.0. Changes to wording to provide clarification on who is required to attend the review and what documents and records may be considered during the review (s. 3.1). Linked the procedure with OP-15 in terms of documenting a long-term forecast (s. 3.3 and s. 3.4). Updated MOECC to MECP.
2024-11-28	7	Removed watermark

	<p style="text-align: center;">OPERATIONAL PLAN Mattawa Drinking Water System</p>	<p>QEMS Proc.: OP-15 Rev Date: 2025-07-14 Rev No: 8 Pages: 1 of 3</p>
INFRASTRUCTURE MAINTENANCE, REHABILITATION AND RENEWAL		
Reviewed by: PCT	Approved by: Senior Operations Manager	

1. Purpose

To describe OCWA's infrastructure maintenance, rehabilitation and renewal program for the Mattawa Drinking Water System

2. Definitions

Infrastructure – the set of interconnected structural elements that provide the framework for supporting the operation of the drinking water system, including buildings, workspace, process equipment, hardware, software and supporting services, such as transport or communication

Rehabilitation – the process of repairing or refurbishing an infrastructure element.

Renewal – the process of replacing the infrastructure elements with new elements.

3. Procedure

3.1 OCWA, under contract with the Owner, maintains a computerized Work Management System (WMS) to manage maintenance, rehabilitation and renewal of infrastructure for which it is operationally responsible. The major components of the WMS consist of planned maintenance, unplanned maintenance, rehabilitation, renewal and program monitoring and reporting.


3.1.1 Planned Maintenance

Routine planned maintenance activities include:

- Inspect, adjust and calibrate process control equipment to ensure proper operation of water systems, pumps, chemical feeders, and all other equipment installed at the facilities.
- Inspect reservoir
- Perform routine maintenance duties to equipment including checking machinery and electrical equipment when required.
- Perform routine maintenance of the distribution systems (flushing and valve cycling)
- Maintain an inventory of all equipment
- Maintain accurate records of work conducted, activities, and achievements.

Planned maintenance activities are scheduled in the WMS that allows the user to:

- Enter detailed asset information;
- Generate and process work orders;
- Access maintenance and inspection procedures;
- Plan preventive maintenance and inspection work;
- Plan, schedule and document all asset related tasks and activities; and

	<p style="text-align: center;">OPERATIONAL PLAN Mattawa Drinking Water System</p>	<p>QEMS Proc.: OP-15 Rev Date: 2025-07-14 Rev No: 8 Pages: 2 of 3</p>
INFRASTRUCTURE MAINTENANCE, REHABILITATION AND RENEWAL		
Reviewed by: PCT	Approved by: Senior Operations Manager	

- Access maintenance records and asset histories.

Planned maintenance activities are communicated to the person responsible for completing the task through the issuance of WMS work orders. Work orders are automatically generated on a daily, weekly, monthly, quarterly and annual schedule as determined based on manufacturer's recommendations and site specific operational and maintenance needs and are assigned directly to the appropriate operations personnel. Work orders are completed and electronically entered into WMS by the person responsible for completing the task. Records of these activities are maintained as per OP-05 Document and Records Control.

The Senior Operator maintains the inventory of equipment in WMS and ensures that appropriate maintenance plans are in place. Maintenance plans are developed according to the manufacturer's instructions, regulatory requirements, industry standards, and/or client service requirements. Equipment Operation and Maintenance (O&M) manuals are accessible to operations personnel at the locations specified in OP-05 Document and Records Control.

3.1.2 Unplanned Maintenance


Unplanned maintenance is conducted as required. Minor unplanned maintenance activities are performed by operations as needed without authorization. Major unplanned repairs that incur a cost must be approved by management. During emergency circumstances, prior approval from Operation Management may not required if immediate action is necessary to protect safety or continuity. Unplanned maintenance activities are recorded in the facility's logbook and as corrective/emergency work order and are entered into WMS by the person responsible for completing the unplanned maintenance activity.

3.1.3 Rehabilitation and Renewal

Rehabilitation and renewal activities including capital upgrades (major infrastructure maintenance) are determined at least once every calendar year in consultation with Operations Management and the Owner. A list of required replacement or desired new equipment is compiled and prioritized by Operations Management in conjunction with operations personnel and is presented to the Owner for review and comment. All major expenditures require the approval of the Owner. In addition to the short-term facility needs (i.e. current year), the Capital and Major Maintenance Recommendations Report also provides a long-term (i.e. rolling 5-year) list of major maintenance recommendations. (Refer to OP-14 Review and Provision of Infrastructure).

3.1.4 Program Monitoring and Reporting

Maintenance needs for the facility are determined through review of manufacturer's instructions, regulatory requirements, industry standards, and/or

	<p style="text-align: center;">OPERATIONAL PLAN Mattawa Drinking Water System</p>	<p>QEMS Proc.: OP-15 Rev Date: 2025-07-14 Rev No: 8 Pages: 3 of 3</p>
INFRASTRUCTURE MAINTENANCE, REHABILITATION AND RENEWAL		
Reviewed by: PCT	Approved by: Senior Operations Manager	

client service requirements and are communicated by means of work orders. Additionally, Operations Management and operations personnel (Senior Operator, PCT, operators and mechanic/operator) conduct a review of the drinking water system's infrastructure to assess its adequacy for the operation and maintenance of the system. (Refer to OP-14 Review and Provision of Infrastructure).

To assist in monitoring the effectiveness of the program Operations Management (or designate) can generate summary reports as needed from WMS.


3.2 OCWA's infrastructure maintenance, rehabilitation and renewal program is initially communicated to the Owner through the operating agreement. OCWA's program is communicated to the Owner on an on-going basis through quarterly reports and at a minimum once every calendar year through submission of the capital letter and the results of the Management Review.

4. Related Documents

OP-05 Document and Records Control
OP-14 Review and Provision of Infrastructure
Capital and Major Maintenance Recommendations Report
Capital Letter & Acknowledgement/Approval from the Owner
Minutes of Management Review

5. Revision History

Date	Revision #	Reason for Revision
2013-08-01	2	Added revision history, removed all references to RRAM, revised procedure to mirror current practice (eliminated KPI's, etc.)
2014-06-11	3	Minor wording adjustment, reissued for approval.
2015-08-27	4	Changed "reviewer", added ORO, changed responsibilities.
2016-08-18	5	Minor wording change, replaces PW Super with PCT, reissued.
2019-07-23	6	DWQMS-15 procedure renamed OP-15 as per OCWA template. Information within OP-15 was originally set out in DWQMS-15 of Mattawa DWS Operational Plan (last revision 5, dated 2016-08-25). New Purpose, Definitions, Procedure, Related Documents and separate Revision History sections. Added the requirement to ensure the long term forecast is reviewed at once every calendar year and to document a long term forecast (s. 3.1.3) to reflect in DWQMS v. 2.0. Minor wording updates to reflect OCWA's current WMS.
2024-11-28	7	Removed watermark
2025-07-14	8	Updated 3.1.2 clarification of minor, major and emergency unplanned repairs and Operation Management authorization.

	<p style="text-align: center;">OPERATIONAL PLAN Mattawa Drinking Water System</p>	<p>QEMS Proc.: OP-16 Rev Date: 2024-11-28 Rev No: 9 Pages: 1 of 3</p>
SAMPLING, TESTING AND MONITORING		
Reviewed by: PCT	Approved by: Senior Operations Manager	

1. Purpose

To describe the procedure for sampling, testing and monitoring for process control and finished drinking water quality.

2. Definitions

Challenging Conditions – any existing characteristic of the water source or event-driven fluctuations that impact the operational process as identified and listed under OP-06 Drinking Water System


3. Procedure

- 3.1 All sampling, monitoring and testing is conducted at a minimum in accordance with SDWA O. Reg. 170/03 and the facility's Municipal Drinking Water License (MDWL).
- 3.2 Sampling requirements for the facility are defined in the facility's sampling schedule which is available to operations personnel, at the location(s) noted in OP-05 Document and Records Control. The sampling schedule is maintained by the PCT and is updated as required.
- 3.3 Samples that are required to be tested by an accredited and licensed laboratory, are collected, handled and submitted according to the directions provided by the licensed laboratory(ies) that conducts the analysis. The laboratory(ies) used for this facility are listed in the Essential Supplies and Services List (within the Facility Emergency Plan (FEP)).

Electronic and/or hardcopy reports received from the laboratory are maintained as per OP-05 Document and Records Control. Analytical results from laboratory reports are uploaded into OCWA's Process Data Management system (PDM).

- 3.4 Continuous monitoring equipment is used to sample and test for the following parameters related to process control and finished drinking water quality:
 - *Free chlorine residual* – treated water to distribution system
 - *UV Transmittance* – treated water to distribution system
 - *UV Intensity* – treated water to distribution
 - *Free chlorine residual* – distribution water
 - *Discharge pressure* – treated water into the distribution system
 - *Flow rates (including totalized flows)* – raw/treated water
 - *Water levels* – reservoir

Test results from continuous monitoring equipment are captured by OCWA's SCADA and are reviewed by a certified operator in accordance with the requirements of SDWA

	<p style="text-align: center;">OPERATIONAL PLAN Mattawa Drinking Water System</p>	<p>QEMS Proc.: OP-16 Rev Date: 2024-11-28 Rev No: 9 Pages: 2 of 3</p>
SAMPLING, TESTING AND MONITORING		
Reviewed by: PCT	Approved by: Senior Operations Manager	

O. Reg. 170/03. A Standard Operating Procedure for Continuous Monitoring Data Review is available in the systems SOP Binder.

- 3.5 Adverse water quality incidents are responded to and reported as per Adverse Water Quality Reporting SOP found in the Facility Emergency Plan Binder.
- 3.6 In-house process control activities are conducted on a regular basis by the certified operator(s) on duty and are as follows:

Operational Parameter	Location	Frequency
Turbidity	Raw Water Tap	Grab – minimum once per month on each well
Free Chlorine Residual	Treated Water Tap	Grab - weekly
	Distribution Water (various locations)	Grab - weekly (4 & 3)
Sodium Hypochlorite Usage	Water Treatment Plant	Reading – monthly

In-house samples are analyzed following approved laboratory procedures. The sampling results are recorded on a facility round sheet and are entered into the PDM system. Any required operational process adjustments are recorded in the facility log book.


- 3.7 Additional sampling, testing and monitoring activities related to the facility's most challenging conditions are captured in the existing in-house program as described above.
- 3.8 There are no relevant upstream sampling, testing and monitoring activities that take place for this facility/system.
- 3.9 Sampling, testing and monitoring results are readily accessible to the Owner at the Kirkland Lake Process and Compliance office and/or the Town Office.

Owners are provided Quarterly Operations Reports which discusses regulatory results and operational issues. Owners are also provided with an annual summary of sampling, testing and monitoring results through the SDWA O. Reg. 170/03 Section 11 - Annual Report, Schedule 22 - Municipal Summary Report and through the Management Review process outlined in OP-20 Management Review.

In addition, updates regarding sampling, testing and monitoring activities are provided as per the operating agreement and during regular client meetings.

4. Related Documents


Annual Report (O. Reg. 170 Section 11)
Continuous Monitoring Data Review SOP

 Ontario Clean Water Agency	OPERATIONAL PLAN Mattawa Drinking Water System	QEMS Proc.: OP-16 Rev Date: 2024-11-28 Rev No: 9 Pages: 3 of 3
SAMPLING, TESTING AND MONITORING		
Reviewed by: PCT	Approved by: Senior Operations Manager	

Facility Emergency Plan (FEP) Binder
 Facility Logbook
 Round Sheets
 Laboratory Analysis Reports
 Laboratory Chain of Custody Forms
 Municipal Summary Report (O. Reg. 170 Schedule 22)
 Process Data Management System (PDM)
 Quarterly Operations Reports
 Adverse Water Quality Reporting SOP
 Sampling Schedule
 SOP Binder
 OP-05 Document and Records Control
 OP-06 Drinking Water System
 OP-20 Management Review

5. Revision History

Date	Revision #	Reason for Revision
2013-08-01	2	Added revision history, removed all references to RRAM.
2014-06-11	3	Reworded policy, added references. Reissued for approval.
2015-08-27	4	Changed "reviewer", eliminated PW Super, added ORO.
2016-08-18	5	Minor wording change, re-issued.
2019-07-19	6	DWQMS-16 procedure renamed OP-16 as per OCWA template. Information within OP-16 was originally set out in DWQMS-16 of Mattawa DWS Operational Plan (last revision 5 dated 2016-08-25). Removed Scope and Responsibilities sections. Updated s. 3.1 to reference Municipal Drinking Water License and s. 3.2 to reference sampling calendar/plan and removed sampling table. Expanded information related to accredited and licensed laboratories (s. 3.3). Removed pumping and static levels. Reordered some sections and other minor edits. Updated Table 3.6 to include frequency of sodium hypochlorite usage reading taken monthly. Added minimum once per month on each well to grab frequency for raw water turbidity.
2019-09-17	7	Updated section 3.4 to include UV Transmittance and UV intensity as they are both continuously monitored.
2021-09-22	8	Updated paragraph below section 3.4 to mention location of Continuous Monitoring Data Review SOP is in the SOP Binder.
2024-11-28	9	Removed Watermark

	<p style="text-align: center;">OPERATIONAL PLAN Mattawa Drinking Water System</p>	<p>QEMS Proc.: OP-17 Rev Date: 2024-11-28 Rev No: 7 Pages: 1 of 2</p>
MEASUREMENT AND RECORDING EQUIPMENT CALIBRATION AND MAINTENANCE		
Reviewed by: PCT	Approved by: Senior Operations Manager	

1. Purpose

To describe the procedure for the calibration and/or verification and maintenance of measurement and recording equipment at the Mattawa Drinking Water System.

2. Definitions

None

3. Procedure

- 3.1 All measurement and recording equipment calibration and maintenance activities must be performed by appropriately trained and qualified personnel or by a qualified third-party calibration service provider (refer to OP-13 Essential Supplies and Services).
- 3.2 Operations personnel maintains a list of measurement and recording devices and associated calibration and/or verification schedules using the automated Work Management System (WMS). When a new device is installed, it is added to the WMS system by a SuperUser. The new device is tagged with a unique identification number and the maintenance schedule is set up. Work orders are then automatically generated as per the schedule (refer to OP-15 Infrastructure Maintenance, Rehabilitation and Renewal).
- 3.3 Details regarding the results of the calibration and/or verification are recorded within each individual work order generated by the WMS and/or in the facility logbook and/or on verification certificate.
- 3.4 Calibration and maintenance activities are carried out in accordance with procedures specified in the manufacturer's manual, instructions specified in WMS or OCWA's calibration procedures.
- 3.5 Hach (a qualified third party calibration service provider) also performs annual calibration/verification on the portable chlorine analyzer and benchtop instrument(s). The calibration/maintenance records are maintained on the public drive.
- 3.6 Standards, reagents and/or chemicals that may be utilized during calibration and/or verification and/or maintenance activities are verified before use to ensure they are not expired. Any expired standards, reagents and/or chemicals are appropriately disposed of and are replaced with new standards, reagents and/or chemicals as applicable.
- 3.7 Any measurement device which does not meet its specified performance requirements during calibration and/or verification must be removed from service (if practical) until repaired, replaced or successfully calibrated. The failure must be reported to the Operations Management and ORO, as soon as possible so that immediate measures can be taken to ensure that drinking water quality has not been compromised by the

	<p style="text-align: center;">OPERATIONAL PLAN Mattawa Drinking Water System</p>	<p>QEMS Proc.: OP-17 Rev Date: 2024-11-28 Rev No: 7 Pages: 2 of 2</p>
MEASUREMENT AND RECORDING EQUIPMENT CALIBRATION AND MAINTENANCE		
Reviewed by: PCT	Approved by: Senior Operations Manager	

malfunctioning device. Any actions taken as a result of the failure are recorded in the facility logbook and/or WMS work order. Operations Management or the PCT ensures that any notifications required by applicable legislation are completed and documented within the specified time period.


- 3.8 Calibration and maintenance records and maintenance/equipment manuals are maintained as per OP-05 Document and Records Control.

4. Related Documents

Calibration/Maintenance Records
Facility Logbook
Maintenance/Equipment Manuals
WMS Records
OP-05 Document and Records Control
OP-13 Essential Supplies and Services
OP-15 Infrastructure Maintenance, Rehabilitation and Renewal

5. Revision History

Date	Revision #	Reason for Revision
2013-08-01	2	Added revision history, removed all references to RRAM.
2014-06-11	3	Revised procedure eliminated Responsibilities and References sections. Reissued for approval.
2015-08-27	4	Changed "reviewer".
2016-08-18	5	Minor wording changes, re-issued.
2019-07-19	6	DWQMS-17 procedure renamed OP-17 as per OCWA template. Information within OP-17 was originally set out in DWQMS-17 of Mattawa DWS Operational Plan (last revision 5 dated 2016-08-25). Removed Scope and Responsibilities sections. Added s. 3.3 to clarify how calibration and/or verification activities are documented. Added s. 3.5 to include how standards, reagents and/or chemicals are verified before use to ensure they are not expired. Other minor edits. Updated section 3.3 to include and/or facility logbook and/or on verification certificate. Updated section 3.5 – Hach (qualified third party calibration service provider) also performs annual calibration/verification on the portable chlorine analyzer and benchtop instrument(s). The calibration/maintenance records are maintained on public drive.
2024-11-28	7	Removed watermark

 Ontario Clean Water Agency	OPERATIONAL PLAN Mattawa Drinking Water System	QEMS Proc.: OP-18 Rev Date: 2024-06-17 Rev No: 7 Pages: 1 of 4
EMERGENCY MANAGEMENT		
Reviewed by: PCT	Approved by: Senior Operations Manager	

1. Purpose

To describe the procedure for maintaining a state of emergency preparedness at the facility level under OCWA's Emergency Management Program.

2. Definitions

Corporate Emergency Response Plan (CERP) – a corporate-level emergency preparedness plan for responding to and supporting serious (Level 3) operations emergencies

Facility Emergency Plan (FEP) – a facility-level emergency preparedness plan for responding to and recovering from operations emergencies

Operations Management – refers to the Senior Operations Manager and/or Operations Manager that directly oversees a facility's operations

3. Procedure


3.1 The Facility Emergency Plan (FEP) is the corporate standard for emergency management at OCWA-operated facilities. The FEP supports the facility-level response to and recovery from Level 1, 2 and 3 events related to water and wastewater operations and directly links to the Corporate Emergency Response Plan (CERP) for management of Level 3 events that require corporate support. Operations Management is responsible for establishing a site-specific FEP that meets the corporate standard for this drinking water system.

3.2 OCWA recognizes three levels of events:

Level 1 is an event that can be handled entirely by plant staff and regular contractors. The event and the actions taken to resolve it (and to prevent a reoccurrence, if possible) are then included in regular reporting (both internally and externally). Examples may include response to an operational alarm, first aid incident, small on-site spill, or a process upset that can be easily brought under control.

Level 2 is an event that is more serious and requires immediate notification of others (regulator, owner). Examples may include minor basement flooding, injury to staff that requires medical attention, or a spill that causes or is likely to cause localized, off-site adverse effects. If the event reaches this level, the instructions indicate the need to contact the Safety, Process and Compliance Manager and/or Regional Hub Manager.

Level 3 is an actual or potential situation that will likely require significant additional resources and/or threatens continued operations. It may require corporate-level support including activation of the OCWA Action Group and opening of an Emergency Operations Centre (EOC) as described in the corporate ERP. Level 3 events usually

 Ontario Clean Water Agency	<p align="center">OPERATIONAL PLAN</p> <p align="center">Mattawa Drinking Water System</p>	QEMS Proc.: OP-18 Rev Date: 2024-06-17 Rev No: 7 Pages: 2 of 4
EMERGENCY MANAGEMENT		
Reviewed by: PCT	Approved by: Senior Operations Manager	

involve intervention from outside organizations (client, emergency responders, Ministry, media, etc.). Examples may include:

- Disruption of service/inability to meet demand;
- Critical injury including loss of life;
- Breach of security that is a threat to public health;
- Intense media attention;
- Community emergency affecting water supply/treatment;
- Declared pandemic; or
- Catastrophic failure that could impact public health or the environment or cause significant property damage.

3.3 Potential emergency situations or service interruptions identified for the Mattawa Drinking Water System include:

- Unsafe Water
- Spill Response
- Critical Injury
- Critical Shortage of Staff
- Loss of Service
- Security Breach


3.4 The processes for responding to and recovering from each potential emergency situation/service disruption are documented within a site-specific contingency plan (CP). The CPs and related standard operating procedures (SOPs) are contained within the FEP.

3.5 OCWA's training requirements related to the FEP are as follows:

Training Topic	Training Provider	Type of Training	Frequency	Required For
Establishing and maintaining a FEP that meets the corporate standard	Safety, Process and Compliance Manager and/or Corporate Compliance (as required)	On-the-Job Practical	Upon hire and when changes are made to the corporate standard*	PCTs (or others identified by the Operations Management)
Contents of the site-specific FEP	Facility Level (coordinated by QEMS Representative)	On-the-Job Practical	Upon hire and when changes to the FEP are made*	All operations personnel with responsibilities for responding to an emergency

*Note: Changes to the corporate standard or site-specific FEP may only require the change to be communicated to Operations for implementation. Therefore, not all changes will require training.

3.6 At least one CP must be tested each calendar year and each CP must be reviewed at least once in a five-calendar year period. The reviews and tests are recorded on the FEP-01 Contingency Plan Review/Test Summary Form. This record includes the outcomes of the review/test, and identifies any opportunities for improvement and actions taken. A scheduled test of a CP may be regarded as a review of that particular


 Ontario Clean Water Agency	<p align="center">OPERATIONAL PLAN</p> <p align="center">Mattawa Drinking Water System</p>	QEMS Proc.: OP-18 Rev Date: 2024-06-17 Rev No: 7 Pages: 3 of 4
EMERGENCY MANAGEMENT		
Reviewed by: PCT	Approved by: Senior Operations Manager	

CP as long as the outcomes are evaluated using the FEP-01 form. A CP-related response to an actual event may also be considered a review or a test. A review of the incident including lessons learned should be recorded on FEP-01 following the resolution of the actual event, along with any opportunities for improvement/actions identified.

- 3.7 Revisions to the CPs, SOPs and other FEP documents are made (as necessary) following a review, test, actual event or other significant change (e.g., changes in regulatory requirements, corporate policy or operational processes and/or equipment, etc.). Results of the emergency response testing and any opportunities for improvement/actions identified are considered during the Management Review (OP-20).
- 3.8 Roles and responsibilities for emergency management at OCWA-operated facilities are set out in the FEP. Specific roles and responsibilities related to a particular emergency situation or service interruption (including those of the Owner where applicable) are set out in the relevant site-specific CP. A general description of the respective responsibilities of the Owner and the operating authority in the event an emergency occurs is included in the service agreement with the Owner (as required by the *Safe Drinking Water Act*).
- 3.9 Where they exist, any relevant sections of the Municipal Emergency Response Plan (MERP) are included or referenced in the appendices section of the FEP. Measures specified in the MERP are incorporated into CPs where appropriate.
- 3.10 An emergency contact list in conjunction with the essential supplies and services list is contained within the FEP and is reviewed/updated at least once per calendar year. An emergency communications protocol is contained within the FEP. Specific notification requirements during emergency situations or service interruptions are set out in the individual CPs and in the ERP.


4. Related Documents

Corporate Emergency Response Plan
Emergency Contact List/Essential Supplies & Services List (Contacts section of FEP)
Facility Emergency Plan
FEP-01 Contingency Plan Review/Test Summary Form
Municipal Emergency Response Plan (as applicable)
OP-20 Management Review

 Ontario Clean Water Agency	OPERATIONAL PLAN Mattawa Drinking Water System	QEMS Proc.: OP-18 Rev Date: 2024-06-17 Rev No: 7 Pages: 4 of 4
EMERGENCY MANAGEMENT		
Reviewed by: PCT	Approved by: Senior Operations Manager	

5. Revision History

Date	Revision #	Reason for Revision
2013-08-01	2	Added revision history, revised procedure, removal all references to RRAM.
2014-06-11	3	Revised procedure, reissued for approval.
2015-08-27	4	Changed "reviewer".
2016-08-18	5	Minor wording change, re-issued.
2019-07-19	6	DWQMS-18 procedure renamed OP-18 as per OCWA template. Information within OP-18 was originally set out in DWQMS-18 of Mattawa DWS Operational Plan (last revision 5 dated 2016-08-25). Removed Scope and Responsibilities sections and reordered some sections. Added definition 'Operations Management'. Throughout procedure replaced 'Senior Operations Manager' references with 'Operations Management'. Removed references to 'OCWA's <i>Approach to Facility Emergency Planning</i> ' document throughout procedure and referenced FEP instead. Aligned wording for level 1, 2 & 3 events (s. 3.2) with wording in 'OCWA's <i>Emergency Response Plan</i> '. Updated training section to include role of SPC Manager (s. 3.5) and expanded testing/review section specifically to clarify how an actual test is documented (s. 3.6). Other minor edit. Updated Ministry of the Environment and Climate Change to Ministry of the Environment, Conservation and Parks.
2024-06-17	7	Procedure updated as follows: Ministry of Environment and Climate Change revised to Ministry, removed watermark. Modified references to Emergency Response Plan to indicate it is now referred to as Corporate Emergency Response Plan (CERP).

 Ontario Clean Water Agency	<p align="center">OPERATIONAL PLAN</p> <p align="center">Mattawa Drinking Water System</p>	QEMS Proc.: OP-19 Rev Date: 2024-06-17 Rev No: 7 Pages: 1 of 5
INTERNAL QEMS AUDITS		
Reviewed by: PCT	Approved by: Senior Operations Manager	

1. Purpose

To describe the procedure for conducting internal audits at the facility level that evaluate the conformance of OCWA's Quality & Environmental Management System (QEMS) to the requirements of the Drinking Water Quality Management Standard (DWQMS).

This procedure applies to Internal QEMS Audits conducted at the Mattawa Drinking Water System for the purpose of meeting the DWQMS requirements for internal audits.

Note: This procedure does not apply to internal compliance audits conducted in accordance with OCWA's Internal Audit Program.

2. Definitions

Audit Team – one or more Internal Auditors conducting an audit

Internal Auditor – an individual selected to conduct an Internal QEMS Audit

Internal QEMS Audit – a systematic and documented internal verification process that involves objectively obtaining and evaluating documents and processes to determine whether a quality management system conforms to the requirements of the DWQMS

Lead Auditor – Internal Auditor responsible for leading an Audit Team

Non-conformance – non-fulfillment of a DWQMS requirement

Objective Evidence – verifiable information, records or statements of facts. Audit evidence is typically based on interviews, examination of documents, observations of activities and conditions, reviewing results of measurements and tests or other means. Information gathered through interviews should be verified by acquiring supporting information from independent sources


Opportunity for Improvement (OFI) – an observation about the QEMS that may, in the opinion of the Internal Auditor, offer an opportunity to improve the effectiveness of the system or prevent future problems; implementation of an OFI is optional

3. Procedure

3.1 Audit Objectives, Scope and Criteria

3.1.1 In general, the objectives of an internal QEMS audit are:

- To evaluate conformance of the implemented QEMS to the requirements of the DWQMS;
- To identify non-conformances with the documented QEMS; and
- To assess the effectiveness of the QEMS and assist in its continual improvement.

 Ontario Clean Water Agency	<p align="center">OPERATIONAL PLAN</p> <p align="center">Mattawa Drinking Water System</p>	QEMS Proc.: OP-19 Rev Date: 2024-06-17 Rev No: 7 Pages: 2 of 5
INTERNAL QEMS AUDITS		
Reviewed by: PCT		Approved by: Senior Operations Manager

3.1.2 The scope of an internal QEMS audit includes activities and processes related to the QEMS as documented in the Operational Plan.

3.1.3 The criteria covered by an internal QEMS audit include:

- Drinking Water Quality Management Standard (DWQMS)
- Current Operational Plan
- QEMS-related documents and records

3.1.4 The audit scope and criteria may be customized as necessary to focus on a particular process/critical control point and/or any elements of the DWQMS which may warrant specific attention. The results of previous internal and external audits should also be considered.

3.2 Audit Frequency

3.2.1 Internal QEMS audits may be scheduled and conducted once every calendar year or may be separated into smaller audit sessions scheduled at various intervals throughout the calendar year. However, all elements of the DWQMS must be audited at least once every calendar year.

3.2.2 The QEMS Representative is responsible for maintaining the internal QEMS audit schedule. The audit schedule may be modified based on previous audit results.


3.3 Internal Auditor Qualifications

3.3.1 Internal QEMS audits shall only be conducted by persons approved by the QEMS Representative and having the following minimum qualifications:

- Internal auditor training or experience in conducting management system audits; and
- Familiarity with the DWQMS requirements.

3.3.2 Internal Auditors that do not meet the qualifications in s.3.3.1 may form part of the Audit Team for training purposes, but cannot act as Lead Auditor.

3.3.3 Internal Auditors must remain objective and, where practical, be independent of the areas/activities being audited. It may not be possible for internal auditors to be fully independent of the activity being audited, but every effort should be made to remove bias and encourage objectivity. Auditors should maintain objectivity throughout the audit process to ensure that the audit findings and conclusions are based only on the audit evidence. Objectivity can be demonstrated by obtaining sufficient appropriate evidence to provide a reasonable basis for the audit findings.

 Ontario Clean Water Agency	OPERATIONAL PLAN Mattawa Drinking Water System	QEMS Proc.: OP-19 Rev Date: 2024-06-17 Rev No: 7 Pages: 3 of 5
INTERNAL QEMS AUDITS		
Reviewed by: PCT	Approved by: Senior Operations Manager	

3.4 Audit Preparation

3.4.1 Together, the QEMS Representative and the Lead Auditor:

- Establish the audit objectives, scope and criteria;
- Confirm the audit logistics (locations, dates, expected time and duration of audit activities, any health and safety considerations, availability of key personnel, audit team assignments, etc.).

3.4.2 Each Internal Auditor is responsible for:

- Reviewing documentation to prepare for their audit assignments including:
 - the Operational Plan and related procedures;
 - results of previous internal and external QEMS audits;
 - the status and effectiveness of corrective and preventive actions implemented;
 - the results of the management review;
 - the status/consideration of OFIs identified in previous audits; and
 - other relevant documentation.
- Preparing work documents (e.g., checklists, forms, etc.) for reference purposes and for recording objective evidence collected during the audit

3.5 Conducting the Audit


3.5.1 Opening and closing meetings are not required, but may be conducted at the discretion of the QEMS Representative and the Lead Auditor taking into account expectations of Top Management.

3.5.2 The Audit Team gathers and records objective evidence by engaging in activities that may include conducting interviews with Operations Management and staff (in person, over the phone and/or through e-mail), observing operational activities and reviewing documents and records.

3.5.3 The Audit Team generates the audit findings by evaluating the objective evidence against the audit criteria (s. 3.1.3). In addition to indicating conformance or non-conformance, the audit findings may also lead to the identification of opportunities for improvement (OFIs). The Lead Auditor is responsible for resolving any differences of opinion among Audit Team members with respect to the audit findings and conclusions.

3.6 Reporting the Results

3.6.1 The Lead Auditor reviews the audit findings and conclusions with the QEMS Representative and Top Management. Other audit participants may also take part in this review as appropriate. This review may take place in person (e.g., during a closing meeting) or through other means (phone call, email, etc.). Any diverging opinions regarding the audit findings and conclusions should be

 Ontario Clean Water Agency	<p align="center">OPERATIONAL PLAN</p> <p align="center">Mattawa Drinking Water System</p>	QEMS Proc.: OP-19 Rev Date: 2024-06-17 Rev No: 7 Pages: 4 of 5
INTERNAL QEMS AUDITS		
Reviewed by: PCT		Approved by: Senior Operations Manager

discussed and, if possible, resolved. If not resolved, this should be noted by the Lead Auditor.

- 3.6.2 The Lead Auditor submits a written report and/or completed work documents to the QEMS Representative. The submitted documentation must identify (at a minimum):
- Audit objectives, scope and criteria;
 - Audit Team member(s) and audit participants;
 - Date(s) and location(s) where audit activities were conducted;
 - Audit findings including:
 - Related objective evidence for each element;
 - Any non-conformance identified referencing the requirement that was not met; and
 - OFIs or other observations.
 - Audit conclusions.
- 3.6.3 The QEMS Representative distributes the audit results to Top Management and others as appropriate.
- 3.6.4 The QEMS Representative ensures that results of internal QEMS audits are included as inputs to the Management Review as per OP-20 Management Review.

3.7 Corrective Actions and Opportunities for Improvement (OFIs)


- 3.7.1 Corrective actions are initiated when non-conformances are identified through internal QEMS audits and are documented and monitored as per OP-21 Continual Improvement.
- 3.7.2 OFIs are considered, and preventive actions initiated, documented and monitored as per OP-21 Continual Improvement.

3.8 Record-Keeping

- 3.8.1 Internal QEMS audit records are filed by the QEMS Representative and retained as per OP-05 Document and Records Control.

4. Related Documents

Internal Audit Records (checklists, forms, reports, etc.)
 Summary of Findings Spreadsheet
 OP-05 Document and Records Control
 OP-20 Management Review
 OP-21 Continual Improvement

 Ontario Clean Water Agency	OPERATIONAL PLAN Mattawa Drinking Water System	QEMS Proc.: OP-19 Rev Date: 2024-06-17 Rev No: 7 Pages: 5 of 5
INTERNAL QEMS AUDITS		
Reviewed by: PCT	Approved by: Senior Operations Manager	

5. Revision History

Date	Revision #	Reason for Revision
2013-08-01	2	Added revision history, revised procedure and removed all references to RRAM.
2014-06-11	3	Minor rewording of document, eliminated Responsibilities Section.
2015-08-27	4	Changed 'reviewer', added QMS Rep to responsibilities Section.
2016-08-18	5	Minor wording change, re-issued.
2019-07-23	6	DWQMS-19 procedure renamed OP-19 as per OCWA template. Information within OP-19 was originally set out in DWQMS-19 of Mattawa DWS Operational Plan (last revision 5, dated 2016-08-25). Removed Scope and Responsibilities sections and moved scope wording to purpose section. Added definition 'Objective Evidence' and modified 'non-conformance' definition. Replaced 'audit evidence' with 'objective evidence', and 'conformity' with 'conformance' throughout procedure. Replaced 'once every 12 months' with 'once every calendar year' (s. 3.2.1, s. 3.2.3 and s. 3.4.1) to reflect wording in DWQMS v. 2.0. Added s. 3.2.3 (and modified s. 3.4.1) to describe the frequency for auditing all DWSs covered in multi-facility Operational Plans. Changed s. 3.4.2 to include preventive actions, the results of the management review and the status/consideration of OFIs. Included wording 'for each element', and 'identified referencing the requirement that was not met' to s. 3.6.2. Moved description of process for corrective actions from QP-10 s. 5.7 and OFIs from QP-10 s. 5.8 to OP-21. Added s. 3.7 to refer to OP-21.
2024-06-17	7	Procedure updated to describe and document how objectivity is maintained when an internal auditor is not fully independent of the activity being audited with additions to 3.3.3, removed watermark.

	<p style="text-align: center;">OPERATIONAL PLAN Mattawa Drinking Water System</p>	<p>QEMS Proc.: OP-20 Rev Date: 2024-11-28 Rev No: 7 Pages: 1 of 3</p>
MANAGEMENT REVIEW		
Reviewed by: PCT	Approved by: Senior Operations Manager	

1. Purpose

To describe the procedure for conducting a Management Review of the Quality & Environmental Management System (QEMS) at the facility level.

2. Definitions

Management Review – a formal (documented) meeting conducted at least once every calendar year by Top Management to evaluate the continuing suitability, adequacy and effectiveness of OCWA's Quality & Environmental Management System (QEMS)

Operations Management – refers to the Senior Operations Manager and/or Operations Manager that directly oversees a facility's operations

Top Management – a person, persons or group of people at the highest management level within an operating authority that makes decisions respecting the QMS and recommendations to the owner respecting the subject system or subject systems.

OCWA has defined Top Management for the Mattawa Drinking Water System as:

- Operations Management – Near North Cluster
- Regional Hub Manager – North Eastern Ontario Regional Hub
- Safety, Process & Compliance (SPC) Manager – North Eastern Ontario Regional Hub

3. Procedure

3.1 Top Management ensures that a Management Review is conducted at least once every calendar year.


Management Reviews for more than one drinking water system may be conducted at the same meeting provided the systems belong to the same owner and the considerations listed in section 3.4 below are taken into account for each individual system and documented in the Management Review meeting minutes.

3.2 At a minimum, the QEMS Representative, at least one member of Top Management and at least one facility operator must attend the Management Review meeting. Other members of Top Management may participate though their attendance is optional.

3.3 Other staff may be invited to attend the Management Review meeting or to assist with presenting information or in reviewing the information presented, where they offer additional expertise regarding the subject matter.

3.4 The standing agenda for Management Review meetings is as follows:

- a) Incidents of regulatory non-compliance;
- b) Incidents of adverse drinking water tests;
- c) Deviations from critical control limits and response actions;
- d) The effectiveness of the risk assessment process;

	<p style="text-align: center;">OPERATIONAL PLAN Mattawa Drinking Water System</p>	<p>QEMS Proc.: OP-20 Rev Date: 2024-11-28 Rev No: 7 Pages: 2 of 3</p>
MANAGEMENT REVIEW		
Reviewed by: PCT	Approved by: Senior Operations Manager	

- e) Internal and third-party audit results (including any preventive actions implemented to address Opportunities for Improvement (OFI) or rationale as to why OFIs were not implemented);
- f) Results of emergency response testing (including any OFIs identified);
- 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 QEMS;
- l) Consumer feedback;
- m) The resources needed to maintain the QEMS;
- n) The results of the infrastructure review;
- o) Operational Plan currency, content and updates;
- p) Staff suggestions; and
- q) Consideration of applicable Best Management Practices (BMPs).

3.5 In relation to standing agenda item q), applicable BMPs, if any, to address drinking water system risks discussed during other agenda items, are identified and documented in the Management Review minutes. Review and possible adoption of applicable BMPs are revisited during subsequent Management Reviews and are incorporated into preventive and/or corrective actions as per OP-21 as appropriate.

3.6 The SPC Manager coordinates the Management Review and distributes the agenda with identified responsibilities to participants in advance of the Management Review meeting along with any related reference materials.


3.7 The Management Review participants review the data presented and make recommendations and/or initiate action to address identified deficiencies as appropriate as per OP-21.

3.8 The QEMS Representative ensures that minutes of and actions resulting from the Management Review meeting are prepared and distributed to the appropriate OCWA Top Management, personnel and the Owner.

3.9 The QEMS Representative monitors the progress and documents the completion of actions resulting from the Management Review.


4. Related Documents

Management Review Reference Materials
Minutes and actions resulting from the Management Review
OP-21 Continual Improvement

	<p style="text-align: center;">OPERATIONAL PLAN Mattawa Drinking Water System</p>	<p>QEMS Proc.: OP-20 Rev Date: 2024-11-28 Rev No: 7 Pages: 3 of 3</p>
MANAGEMENT REVIEW		
Reviewed by: PCT	Approved by: Senior Operations Manager	

5. Revision History

Date	Revision #	Reason for Revision
2013-08-01	2	Added revision history, revised procedure, removed all references to RRAM, added reference to Management Review.
2014-06-11	3	Reviewed element, reissued for approval.
2015-08-27	4	Changed “reviewer”, added ORO and CAO.
2016-08-18	5	Removed PW Super, re-issued.
2019-07-23	6	<p>DWQMS-20 procedure renamed OP-20 as per OCWA template. Information within OP-20 was originally set out in DWQMS-20 of Mattawa DWS Operational Plan (last revision 5 dated 2016-08-25). Removed Scope and Responsibilities sections. Added definitions for Top Management and Operations Management. Revisions based on new requirements of the Standard; at least once every 12 months changed to once every calendar year (s. 3.1) and efficacy changed to effectiveness (s. 3.4). Added s. 3.2 and s. 3.3 to describe who is participating in the Management Review process. Added clarification on including any preventive actions implemented to address Opportunities for Improvement (OFI) or rationale as to why OFIs were not implemented when reviewing audit results (s. 3.4.e). Added Best Management Practices (BMPs) as a standing agenda item (s. 3.4.q). Added s. 3.5 to include consideration of BMPs and link OP-20 to OP-21 Continual Improvement.</p>
2024-11-28	7	Removed watermark

 Ontario Clean Water Agency	<p align="center">OPERATIONAL PLAN</p> <p align="center">Mattawa Drinking Water System</p>	QEMS Proc.: OP-21 Rev Date: 2024-11-28 Rev No: 7 Pages: 1 of 4
CONTINUAL IMPROVEMENT		
Reviewed by: PCT		Approved by: Senior Operations Manager

1. Purpose

To describe the procedure for tracking and measuring continual improvement of the Quality & Environmental Management System (QEMS) for the Mattawa Drinking Water System.

2. Definitions

Continual Improvement - recurring activity to enhance performance (ISO 14001:2014)

Corrective Action – action to eliminate the cause of detected nonconformity of the QMS with the requirements of the DWQMS or other undesirable situation

Non-conformance – the non-fulfilment of a DWQMS requirement

Preventive Action – action to prevent the occurrence of nonconformity of the QMS with the requirements of the DWQMS or other undesirable situation

3. Procedure

3.1 OCWA strives to continually improve the effectiveness of its QEMS for this Mattawa Drinking Water System through the identification and implementation of corrective/preventive actions and, as appropriate, through review and consideration of applicable Best Management Practices (BMPs).


3.2 Corrective Actions

3.2.1 Non-conformances may be identified through an internal or external QEMS audit(s) conducted for the Mattawa Drinking Water System. They may also be identified as a result of other events such as:

- an incident/emergency;
- community/Owner complaint;
- other reviews; and
- operational checks, inspections or audits.

3.2.2 The QEMS Representative (in consultation with Operations Management and/or the SPC Manager) investigates the need for a corrective action to eliminate the root cause(s) so as to prevent the non-conformance from recurring. The investigation may also include input from the operators and other stakeholders and the consideration of BMPs as appropriate.

3.2.3 The QEMS Representative determines the corrective action needed based on this consultation. The Operations Management (or designate) assigns responsibility and a target date for resolution.

 Ontario Clean Water Agency	<p style="text-align: center;">OPERATIONAL PLAN</p> <p style="text-align: center;">Mattawa Drinking Water System</p>	QEMS Proc.: OP-21 Rev Date: 2024-11-28 Rev No: 7 Pages: 2 of 4
CONTINUAL IMPROVEMENT		
Reviewed by: PCT	Approved by: Senior Operations Manager	

3.2.4 The QEMS Representative ensures corrective actions are documented using Summary of Findings Spreadsheet. A root cause analysis is performed on any major or minor non-conformance identified during the audit. The QEMS Representative monitors the progress of corrective action(s) and provides status updates to Top Management.

3.2.5 The implementation and effectiveness of corrective actions are verified during subsequent internal QEMS audits and are considered during the Management Review. If there is evidence that the action taken was not effective, the Operations Management (or designate) initiates further corrective action and assigns resources as appropriate until the non-conformance is fully resolved.

3.3 Preventive Actions

3.3.1 Potential preventive actions may be identified through an internal or external QEMS audit as Opportunities For Improvement (OFIs), during the Management Review or through other means such as:


- staff/Owner suggestions;
- regulator observations;
- evaluation of incidents/emergency response/tests;
- the analysis of facility/Regional Hub or OCWA-wide data/trends;
- non-conformances identified at other drinking water systems; or
- a result of considering a BMP.

3.3.2 The QEMS Representative (in consultation with Operations Management and/or the SPC Manager) considers whether a preventive action is necessary. The review may also include input from the operators and other stakeholders and the consideration of BMPs as appropriate.

3.3.3 If it is decided that a preventive action is necessary, the QEMS Representative determines the action to be taken based on this consultation and the Operations Management (or designate) assigns responsibility and a target date for implementation.

3.3.4 The implementation of preventive actions are tracked by the QEMS Representative using the Summary of Findings Spreadsheet.

3.3.5 The implementation and effectiveness of preventive actions are verified during subsequent internal QEMS audits and are considered during the Management Review. If there is evidence that the action taken was not effective, the Operations Management (or designate) may consider further preventive actions and assigns resources as appropriate.

 Ontario Clean Water Agency	<p align="center">OPERATIONAL PLAN</p> <p align="center">Mattawa Drinking Water System</p>	QEMS Proc.: OP-21 Rev Date: 2024-11-28 Rev No: 7 Pages: 3 of 4
CONTINUAL IMPROVEMENT		
Reviewed by: PCT		Approved by: Senior Operations Manager

3.4 The QEMS Rep. and Operations Management monitor corrective/preventive actions on an ongoing basis and review the status and effectiveness of the actions during subsequent Management Review meetings.

3.5 Best Management Practices (BMPs)

3.5.1 The QEMS Representative and/or Operations Management in consultation with the SPC Manager will review and consider applicable internal and/or external BMPs identified by internal and/or external sources as part of the Management Review (OP-20) and in the corrective and preventive action processes described above.


3.5.2 BMPs may include, but are not limited to:

- Facility/Regional Hub practices developed and adopted as a result of changes to legislative or regulatory requirements, trends from audit findings or Mattawa Drinking Water System performance trends;
- OCWA-wide BMPs/guidance or recommended actions;
- Drinking water industry based standards/BMPs or recommendations; or
- Those published by the Ministry of the Environment, Conservation and Parks.

3.5.3 At a minimum, applicable BMPs must be reviewed and considered once every 36 months.

4. Related Documents

OP-05 Document and Records Control
 OP-20 Management Review
 Internal Audit Records
 Summary of Findings Spreadsheet

 Ontario Clean Water Agency	OPERATIONAL PLAN Mattawa Drinking Water System	QEMS Proc.: OP-21 Rev Date: 2024-11-28 Rev No: 7 Pages: 4 of 4
CONTINUAL IMPROVEMENT		
Reviewed by: PCT	Approved by: Senior Operations Manager	

5. Revision History

Date	Revision #	Reason for Revision
2013-07-30	2	Added revision history, removed RRAM I.D. from header, removed references to Process log books, yearly budget, etc.
2014-06-12	3	Reworded document, removed "General Improvements" section, reissued for approval.
2015-08-27	4	Changed "reviewer", reissued.
2016-08-18	5	Minor wording change, re-issued.
2019-07-23	6	DWQMS-21 procedure renamed OP-21 as per OCWA template. Information within OP-21 was originally set out in DWQMS-21 of Mattawa DWS Operational Plan (last revision 5, dated 2016-08-25) was not used in OP-21 as it did not meet the requirements of the new DWQMS v. 2.0. Information from DWQMS-19 Internal Audit (revision 5, dated 2016-08-18) was incorporated into s. 3.2 and s. 3.3 of OP-21 but was modified to address non-conformances identified from additional inputs other than internal audits and preventive actions resulting from means other than OFIs from internal audits. In addition R&Rs were revised to include the SPC Manager, and to clarify the role of the QEMS Representative in investigating and determining corrective and preventive actions needed. A section on Best Management Practices (s. 3.5) was added to meet the new requirements of DWQMS v. 2.0. Updated fifth bullet in section 3.3.1, removed Mattawa and left as other drinking water systems. Updated section 3.2.4 to include a statement referring to the root cause analysis for major and minor non-conformances. Updated Ministry of the Environment and Climate Change to Ministry of the Environment, Conservation and Parks.
2024-11-28	7	Removed Watermark

Schedule C – Director's Directions for Operational Plans (Subject System Description Form) Municipal Residential Drinking Water System

Fields marked with an asterisk (*) are mandatory.

Owner of Municipal Residential Drinking Water System *
The Corporation of the Town of Mattawa

Subject Systems

Name of Drinking Water System (DWS) *	Licence Number *	Name of Operating Subsystems (if applicable)	Name of Operating Authority *	DWS Number(s) *
1. Mattawa Drinking Water System	195-101		Ontario Clean Water Agency	210001905

Contact Information for Questions Regarding the Operational Plan

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