Municipality of Kincardine Drinking Water Quality Management System Operational Plans

Scott Point Drinking Water System Operational Plan #088-401
Kincardine Drinking Water System Operational Plan #088-402
Underwood Drinking Water System Operational Plan #088-403
Tiverton Drinking Water System Operational Plan #088-404
Armow Drinking Water System Operational Plan #088-405

Revision 10 May 2023

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Introduction

This Operational Plan describes the Drinking Water Quality Management System developed in accordance with the Ministry of the Environment, Conservation and Parks (MECP) Drinking Water Quality Management Standard (DWQMS). The Quality Management System (QMS) has been developed and implemented by the Municipality of Kincardine Environmental Services Department.

All elements of the DWQMS are addressed within this Operational Plan. The Plan is written to meet or exceed the requirements of the DWQMS and is applicable to the management and operation of each system described in Section 6 of this Plan.

For a listing of all external documents referenced within the Operational Plan, appendices and QMS procedures please see Appendix H: QMS Document Listings.

1. Quality Management System

The Municipality of Kincardine Operational Plan documents a Quality Management System that meets all the requirements of the DWQMS. The Operational Plan was developed by the Operating Authority and approved by Top Management. The Municipal Council, Owner-Representative and Operating Authority personnel are jointly responsible for understanding, implementing, maintaining, and contributing to the continuous improvement of the Quality Management System.

2. Quality Management System Policy

The Quality Management System policy statement was developed at the operations level, reviewed by Top Management, and approved by Council. The QMS Policy is communicated to all Operations personnel and is posted at the Environmental Services Department Office. The public can access a copy of the Policy through the Environmental Services Department or the Municipality of Kincardine web site. The Quality Management System Representative and Top Management will review this policy on an annual basis to coincide with the management review. Any changes proposed, will be subject to approval by Council.

A copy of the QMS Policy can be found in Appendix A.

3. Commitment and Endorsement

The Municipality of Kincardine is committed to managing and operating the drinking water systems in a responsible manner in accordance with documented QMS policies and procedures. Top Management fully supports and is committed to the development, maintenance and continuous improvement of the Operational Plan by providing the necessary training and resources. Top Management ensured the QMS Policy was brought forward to Council where it was approved and passed.

Changes to the QMS Policy and Operational Plan will be approved by Top Management and the Owner-Representative (on behalf of Council). Major revisions to the Operational Plan and Policy will be provided to Council, typically on the committee of the whole agenda. When there are changes to the Owner (Council), the Owner-Representative or Top Management, they will be provided with a copy of the most current Operational Plan and Policy. A new Owner-Representative or Top Management will endorse the Plan and Policy within one year of employment with the municipality.

Copies of Council resolution(s) and revision endorsements are found in Appendix B.

4. Quality Management System Representative

The Environmental Compliance Officer has been appointed as the Quality Management System Representative by Top Management. As the QMS Representative, the Environmental Compliance Officer is responsible for establishing and maintaining the QMS and ensuring that the most current versions of documents are always in use.

It is the QMS Representative's responsibility to be aware of the regulatory requirements, any changes that have been made to them and to ensure that they are reflected in the QMS. Notification of changes may be obtained through various channels such as ministry web sites, updates from industry associations or various communications such as letters and e-mails. The QMS Representative shall ensure that operations staff are aware of the QMS and all legislative and regulatory requirements that pertain to their duties within the drinking water systems. The QMS Representative reports to Top Management on an on-going basis the status of the QMS, any issues or concerns regarding it, and any improvements that need to be made that require additional resources.

5. Document and Records Control

For this Operational Plan, records are defined as documented information that states results achieved or provides proof of activities performed. Records cannot be changed and refer to events that have happened in the past. Some examples of records are laboratory test results, logbooks, log sheets, completed forms and checklists, training records and meeting minutes.

Documents are defined as information such as documented policies, procedures, manuals, maps, drawings, forms, legislation and regulations. Documents can be generated internally or come from external sources and therefore may not be controlled entirely by the Municipality of Kincardine staff. Documents are subject to change and so every effort must be made to ensure that the most current version is in use. Some examples of QMS documents are the QMS Policy, this Operational Plan, QMS Procedures, Standard Operating Procedures, blank forms and checklists, licences and certificates, Permits to Take Water, legislation and regulations.

Both records and documents provide proof that the QMS is being implemented and therefore must be controlled so that they are kept up-to-date, legible, and easily accessible. The *QMS Procedure for Document and Records Control* (QMS001) outlines how records and documents will be created or obtained and managed – this includes how they will be filed, stored, protected, disposed of and how long they will be retained.

Internal QMS documents can only be edited by the ES Supervisor, the Environmental Compliance Officer or by a person designated by them. The QMS Representative is responsible for ensuring that all QMS documentation is reviewed on an annual basis to ensure that the information is still correct and current. Any internal QMS documents that are revised will be approved by the Environmental Services Supervisor prior to being put into circulation. In the absence of the ES Supervisor, the Manager of Environmental Services can approve QMS documentation.

6. Drinking Water System Description

The Municipality of Kincardine owns and operates five drinking water systems.

The Kincardine Drinking Water System is the largest treatment and distribution system. It draws water from Lake Huron and the water is treated by chemically assisted conventional filtration. The distribution system includes the town of Kincardine, Huronville Subdivision plus a pipeline to the north feeding customers up to and including the Inverhuron Provincial Park.

The Tiverton Drinking Water System is the second largest treatment and distribution system. It is a multi-well system that services the village of Tiverton.

Three smaller well systems owned and operated by the municipality are located in Underwood, Scott Point and Armow and service customers in these communities.

Tiverton, Scott Point and Underwood use sodium hypochlorite to provide primary and secondary disinfection. Primary disinfection at Armow is by ultraviolet light and secondary disinfection is by sodium hypochlorite.

More in-depth system descriptions and up-to-date treatment Process Flow Charts are included in Appendix C.

7. Risk Assessment

A risk assessment was performed on each drinking water system operated by the Municipality of Kincardine to identify potential hazardous events and associated hazards and evaluate their significance. A risk assessment will be completed at least once every thirty-six months, with annual reviews used to ensure that the information is still current and applicable. Currently, the risk assessments are performed by the Environmental Services Department following procedure *QMS002 Risk Assessment*.

8. Risk Assessment Outcomes

The results of the Risk Assessment are documented in a Risk Assessment Table. Appendix D contains the most current Risk Assessment Table and related documentation. The Risk Assessment Table is a living document, subject to change. The QMS Representative will ensure that this information is kept up to date.

Deviations from critical control limits are reported to the Overall Responsible Operator, Environmental Services Supervisor and, where applicable, to Top Management, the Ministry of the Environment, Conservation and Parks and the Ministry of Health and Long-Term Care. Deviations from critical control limits are recorded in the appropriate place(s) (ie. facility log book, data review sheets, alarm response work order, etc.) and summarized for the Management Review.

9. Organizational Structure, Roles, Responsibilities and Authorities

The Municipality of Kincardine is the Owner and Operating Authority. The Infrastructure and Development Department within the Municipality oversees the Environmental Services Department. The Environmental Services Department attends to the daily operations of the drinking water systems. The organizational structure of the Owner and Operating Authority is shown in the organizational chart below.

Municipality of Kincardine Organizational Chart
(Owner/Operating Authority)

The Mayor and Council as the Owners of the drinking water system ultimately have the responsibility for ensuring a safe and reliable supply of potable water and for providing the necessary resources and infrastructure for all municipal water systems. The Chief Administrative Officer, as the Owner-Representative, has the authority to hire and terminate Operating Authority personnel.

The Director of Infrastructure and Development and the Environmental Services Manager have the next level of responsibility for the municipal water systems as well as the Quality Management System and decide what information is passed on to the Owner and when. As QMS Top Management, the Environmental Services Manager is responsible for keeping the Operating Authority structure, respective roles, responsibilities, and authorities current, and ensuring that this information is communicated to operations personnel. The Director of Infrastructure and Development oversees the ES Manager and will perform all top management duties in their absence. The Director of Infrastructure and Development and the Manager of Environmental Services also have the authority to hire and terminate Operating Authority personnel.

The Environmental Services Compliance Officer reports to the Environmental Services manager and is the QMS representative. The Environmental Compliance Officer works with the ES supervisor to update and implement changes to the QMS.

The Environmental Services Supervisor reports to the Environmental Services Manager and oversees all water operations including the Operating Authority personnel. The ES Supervisor and the ES Lead Operator perform the Overall Responsible Operator Role on a rotating basis. The roles, responsibilities and authorities of the Operating Authority are outlined in Appendix E.

The Environmental Services Lead Operator reports to the Environmental Services Supervisor and directs staff on daily work following the ES supervisors' schedules and instructions.

During times when the Environmental Services Manager is unavailable (i.e. on vacation or sick leave), the Environmental Services Supervisor would then report directly to the Director of Infrastructure and Development. If both the Environmental Services Manager and the Director of Infrastructure and Development are both unavailable (i.e. on vacation or sick leave), the Environmental Services Supervisor or the Overall Responsible Operator has the authority to make necessary decisions related to operations.

There are additional personnel, not listed in the Operating Authority structure above, that may directly or indirectly work for the Operating Authority such as Environmental Services Administrative personnel, the Environmental Services Utility Locator and answering service staff. These personnel support the Operating Authority but do not fulfill a legal obligation under the Ministry of the Environment, Conservation and Parks legislation and therefore are not included in Appendix E.

10. Competencies

Operating Authority personnel must be competent in their jobs based upon appropriate education, training, skills and experience. Appendix E outlines required and desired competencies for each role within the Operating Authority.

The competency requirements are satisfied through the following measures:

- All new employees must provide evidence of certification and other competency requirements.
- New employees undergo on-the-job training at all facilities, conducted by experienced staff.
- All operators are required to work towards attaining and maintaining a minimum Class 2 in Water Treatment and Distribution
- All employees receive training which meets or exceeds the requirements of Ontario Regulations 128/04.
- Training and competency requirements are met through various ways, including in-house training, on-the-job practical training and training through outside providers. Training documentation is signed by the Environmental Services Supervisor, unless a certificate is received, showing proof that the training was provided. All records of training are maintained by the Environmental Compliance Officer at the Environmental Services Department office as proof that training has been successfully completed.

Summer Students with Operator in Training certifications may not be trained at all facilities due to the short duration of time they are employed with the Municipality. Training will be provided and documented for the specific duties they will be performing such as hydrant flushing or valve turning.

Contingency Plan CP018 Overall Responsible Operator (ORO) designates both the Environmental Services Supervisor and the Environmental Services Lead Operator as ORO on a rotating basis. The ORO must hold a minimum Class 1 Water Treatment and Water Distribution certificate as per Regulation 128/04.

Standard Operating Procedure #SOP007 outlines who can be an Operator-in-Charge (OIC) and some of their duties. All operators must have a minimum Class 1 certification in order to act as OIC as per Regulations 128/04 and 129/04.

Because all Operations personnel must meet minimum education requirements (Operator in Training) to work as an operator they are expected to have a general understanding of the relevance of their duties and how they affect safe drinking water. To reinforce this principle and ensure that personnel are aware of the importance of their work, various activities are carried out. Activities that personnel are involved in are in-house training sessions and tailgate sessions. In-house training sessions may include discussions on things such as recent Orders, Convictions or Charges across the province and the results of recent Ministry Inspections. Tailgate sessions include a debrief of daily work, discussions on events and alarms, any actions that were taken and the results achieved as well as what may need to be done or things to watch out for in the future. Operators also discuss

general issues that have been encountered and what worked or didn't work in these situations. Reviewing contingency plans, standard operating procedures, and operations manuals can be included in in-house training or tailgate sessions. These are a constant reminder that what they are doing does indeed affect safe drinking water.

11. Personnel Coverage

The Municipality of Kincardine takes the necessary steps to ensure that adequate staffing levels are maintained to efficiently run all water systems.

The Environmental Services Department office hours are from 8:30am to 4:30pm Monday to Friday. Operator working hours are from 7:00 am – 4:30 pm Monday to Thursday and from 7:00 am – 11:00 am on Fridays. Outside of these hours, an assigned Operator is on-call to address any issues that may arise. All operators with a minimum Class 1 certification are on the on-call rotation, overseen by the Environmental Services Supervisor. New hires are placed on the on-call rotation at the discretion of the Supervisor.

One on-call operator is capable of completing all minimal weekend rounds during routine operations. Similarly, most alarm conditions can be addressed by a single operator when following standard operating procedures. If circumstances arise that require assistance, the on-call operator will contact the Overall Responsible Operator. The ORO will determine how to best assist the on-call operator. Contact information for all operations personnel is readily accessible to the on-call operator.

The Environmental Services Supervisor, Lead Operator and each of the Operators have an assigned cell phone. The Overall Responsible Operator and on-call operator carry their cell phones at all times. The other operators carry their cell phones during regular working hours. Operators are asked to carry their cell phones after hours, if possible, in case of an emergency, so that they can be easily reached. If an operator will not be available outside of regular working hours, they are asked to inform the Overall Responsible Operator if possible.

When the Overall Responsible Operator is unavailable, a replacement Overall Responsible Operator is designated as outlined in Emergency Response Procedure #CP018 and identified in the facility logbook. The Operator-in-Charge is designated by the Environmental Services Supervisor as per Standard Operating Procedure #SOP007 and identified in the facility logbook.

Personnel are not at the water systems at all times, but all systems are monitored and alarmed. All alarms are responded to in accordance with Standard Operating Procedure #SOP002 and as required by regulation.

All vacation requests must be approved by the Manager of Environmental Services, Environmental Services Supervisor or Environmental Services Lead Operator prior to the day(s) requested.

12. Communications

Relevant aspects of the Quality Management System will be communicated between Top Management and:

- the Owner,
- Operating Authority personnel,
- Essential Suppliers and Service Providers and
- the Public.

Procedure *QMS003 Communications* outlines various methods that can be used to achieve and maintain this communication.

13. Essential Supplies and Services

The Municipality of Kincardine operates multiple facilities, some using the same chemicals and equipment. This allows for supplies to be shared among these facilities. The Environmental Services Supervisor oversees the inventory of supplies including supplies that are kept on-site in case of an emergency. A listing of emergency supplies and equipment is included in appendix F. Purchases are typically made by a Purchase Order, but a credit card may be used as well.

An operator must be on site to accept chemical shipments and oversee offloading. Appropriate paperwork must be provided upon delivery to confirm the product being delivered. Where applicable, supplies must meet NSF standards. Chemicals used for coagulation must have a Certificate of Analysis delivered with each shipment or one must be available from the supplier upon request.

All drinking water samples are tested in accordance with Reg. 248/03 Drinking Water Testing Services. All laboratories used for testing water samples are accredited to test for the parameters requested. A Notification of Lab Services must be submitted to the Ministry of the Environment, Conservation and Parks, prior to lab use as required under O. Reg. 170/03.

Contractors hired by the Municipality of Kincardine are required to abide by the municipality's policies and procedures and applicable legislative and regulatory requirements under the Ministry of the Environment, Conservation and Parks, and the Ministry of Labour.

A list of all supplies and services deemed essential for the production and delivery of safe water can be found in Appendix F. Included here are the names of primary suppliers/service providers and alternates, ordering information and delivery times. The Environmental Services Administrative Assistant or Environmental Compliance Officer make changes on an on-going basis to ensure that contact information is current.

If any issue occurs with any supplier, service provider or product, the information will be documented on a DWQMS Supplier and Service Provider Occurrence Report form. The occurrence Report forms will be reviewed annually as part of the essential supplier evaluation process described in QMS007 Essential Supplier & Service Provider Evaluation.

If at any time, the Environmental Services Supervisor is not satisfied with a product, supplier or service provider, changes may be made to this Essential Supplier and Service Provider list.

Companies and contractors listed in Appendix F are notified of the Municipality's QMS and applicable requirements. After the initial notification, the QMS is communicated on an ongoing basis, approximately every three years.

14. Review and Provision of Infrastructure

Adequate infrastructure to produce and provide safe drinking water needs to be in place, maintained and improved when necessary. The Municipality of Kincardine supports regularly examining its infrastructure, reviewing what is in place and determining what is needed to operate the municipal water systems safely and effectively.

The water infrastructure includes such things as buildings, process equipment, distribution mains, hardware and software. Infrastructure needs are reviewed on an on-going basis by the Environmental Services Supervisor and these needs are communicated to Top Management. A summary of the identified needs is compiled and reviewed annually to ensure that adequate infrastructure is available and/or planned for to operate and maintain the systems. Information from both the municipality's Asset Management Plan and the Supervisor are used in planning for infrastructure replacements and capital projects. Top Management uses a 5 to 10 year rolling plan to assist with meeting future needs.

Procedure *QMS004 Infrastructure Review* provides details on the infrastructure review procedure. Results of the review are communicated to the Owner through annual budgets.

15. Infrastructure Maintenance, Rehabilitation and Renewal

The Environmental Services Department strives to maintain the water infrastructure to ensure adequate treatment of water and a consistent supply of potable water for all users. This is accomplished through preventative maintenance, rehabilitation and renewal. For the purposes of this Plan, rehabilitation refers to the repairing or refurbishing of infrastructure and renewal refers to the replacement of infrastructure.

All planned and unplanned maintenance, rehabilitation and renewal of infrastructure are the direct responsibility of the Environmental Services Supervisor.

The maintenance, rehabilitation, and renewal program is monitored by the Environmental Services Supervisor to determine its effectiveness. The maintenance-monitoring program reviews such things as the frequency of unplanned maintenance activities and infrastructure performance.

The Environmental Services Department uses Cityworks, a computerized maintenance management system, for tracking inventory and maintenance activities, scheduling work and for monitoring the maintenance program.

Maintenance

Wherever possible, preventative maintenance is performed with the intent of lengthening the useful life of equipment and avoiding unplanned maintenance activities. Preventative maintenance scheduling is the responsibility of the Environmental Services Supervisor and is based on manufacturer's recommendations, history and overall performance. A tentative schedule is kept

by the Supervisor and work assigned to operations staff by the Supervisor or Lead Operator accordingly.

Planned preventative maintenance includes such things as visually inspecting, lubricating, flushing and changing fluids on equipment, spring flushing and winterizing of hydrants, valve inspection/exercising, and cleaning aerators, influent chambers and bar screens. Planned and unplanned maintenance activities at the treatment plants are documented in the facility log books and/or Cityworks. Maintenance activities in the distribution and collection systems are documented in Cityworks.

Rehabilitation

Operations staff performing daily checks on the drinking water systems are responsible for identifying infrastructure needs while on-site. Repairs that can be done immediately are dealt with and logged in the facility logbook or documented in Cityworks. Any other issues are reported to the Environmental Services Supervisor and ORO for future follow-up.

Repairs to the treatment systems are documented in the facility log books on-site while distribution and collection repairs are documented through Cityworks work orders.

In order to deal with unplanned repairs as quickly and efficiently as possible, back-up units, spare parts and current drawings/mapping are available to operations staff.

Renewal

Budgeting for the repair and replacement of major infrastructure components is the responsibility of Top Management. This is done through a 5-year rolling plan for operating and a 10-year plan for Capital, with annual capital and operating budgets approved by Council. The municipality has an Asset Management Plan that tracks infrastructure replacement needs. Industry standards are used to estimate the useful life of infrastructure to aid in the timing and budgeting of replacements. The Asset Management Plan is continually being updated with current information to make it a useful living document. Infrastructure needs that arise through operations are communicated from the Environmental Services Supervisor to Top Management. Information from both the Asset Management Plan and the Supervisor are used in planning for infrastructure replacements and capital projects. For some infrastructure replacements, consideration is given to other municipal components and activities such as road repairs and replacements, and new or expanding subdivisions.

The appropriate Form 1, 2 or 3 forms are completed for additions, replacements, modifications, or extensions of water infrastructure and equipment in accordance with the facility Drinking Water Works Permits. Subsequently, a Director Notification form is completed and submitted to the Ministry of the Environment, Conservation and Parks within thirty days of placing into service or completing any addition, modification, replacement, or extension if the Schedule A description needs to be revised or authorization was given through Schedule C.

16. Sampling, Testing and Monitoring

Sampling, testing and monitoring is carried out for all water systems to ensure process control and adequate treatment. The finished water quality is monitored to verify that the applicable legislative requirements have been met or exceeded.

Sampling, testing and monitoring for the drinking water systems is based on O. Reg. 170, the Drinking Water Works Permit and the Municipal Drinking Water Licence.

The Kincardine Drinking Water System is a surface water system, and as such, sampling, testing and monitoring is required of various parameters of the raw, process, treated and distribution water. The facility Operations Manual outlines the sampling, testing and monitoring for this system, some of which are beyond regulatory requirements to maintain process control or because of possible challenging conditions. Raw water quality is monitored for various parameters, and some are used to make process adjustments, the most significant of these being turbidity.

All the Municipal Residential Systems owned and operated by the Municipality that are well systems are non-GUDI systems, and require only a minimum of sampling, testing and monitoring of the raw, process, treated and distribution water. The facility's Operations Manuals outline the sampling, testing and monitoring for these systems. No sampling or testing upstream of the wells takes place. Monitoring of the well heads and surrounding areas are outlined in *SOP004* in the Operations Manuals.

A Sampling Requirements spreadsheet and Sampling Schedule, as referenced in *SOP006 Sampling Requirements*, outlines the microbiological and chemical sampling requirements and current years' schedule for all water systems operated by the Municipality of Kincardine. In addition, Appendix G contains a Sampling and Monitoring Table for the drinking water systems.

Certified operators perform all sampling and monitoring. Important process data is continuously monitored, recorded on a data logger (for the well systems) or SCADA system (for the Kincardine DWS) and alarmed. The SCADA system is programmed to monitor some parameters, such as free chlorine residual, in several locations to maintain the treatment process and identify potential problems early. The operator can use the information gathered on-site and from the data logging or SCADA systems to adjust processes affecting water quality. Some information may be monitored and alarmed but not data logged, such as power and pressure. The data logger and SCADA trends are reviewed by a licenced operator at a minimum of every 72 hours. Review days are every Monday to Friday. In addition, the Environmental Compliance Officer is responsible for the review of relevant sampling, testing and monitoring results and summarizing the data so that this information can be reviewed by the Environmental Services Supervisor and shared with Top Management, Owner, engineers and the Ministry of the Environment, Conservation and Parks, as necessary.

Contingency Plans have been developed for dealing with emergency situations. These can be found in the facility Operations Manual. Alarm limits are set such that an operator should have sufficient time to respond to the site and deal with the issue prior to an adverse effect.

In-house testing results are recorded on monthly log sheets and monitoring and adjustments notes are made in the logbook. For Municipal Residential Drinking Water Systems, Annual and Summary Reports required by O. Reg. 170 are combined into one report that is completed by the end of February and presented to Council prior to March 31st each year. Lab results are e-mailed to the Environmental Services Department and Municipal Administration Centre from the lab. Adverse notifications are completed by the Environmental Services Department and then sent to Top Management at the same time they are faxed or emailed to the Spills Action Centre (SAC) and the local Health Unit (MOH).

Source Water Protection studies have mapped out the Kincardine Intake Protection Zone and Well Head Protection Areas for the well systems and assessed the threats to each of the municipal drinking water systems. Source Protection Plans are in place for all Municipal Residential Drinking Water Systems in the municipality.

17. Measurement and Recording Equipment Calibration and Maintenance

Measurement and recording equipment accuracy is an essential part of ensuring that the consumer is provided with quality drinking water that meets or exceeds the legislated requirements and internal targets.

Equipment maintenance and calibrations are scheduled by the Environmental Services Supervisor. It is the responsibility of the Supervisor to ensure that all maintenance and calibrations are completed. Annual calibrations of flow meters, miltronics equipment and continuous monitoring chlorine analyzers are done through an outside contractor. Legislated continuous monitoring turbidity analyzers are calibrated quarterly, either in-house or by an outside contractor. More frequent calibrations are performed in-house on continuous monitoring chlorine and turbidity analyzers as required by maintenance activities and performance.

Maintenance and verification checks are done internally by operations staff on various equipment such as pH meters, pocket colorimeters and continuous monitoring chlorine and turbidity analyzers. Preventative maintenance is performed on an as-needed basis by observing equipment condition and performance. Verification checks are performed on portable colorimeters approximately once per month. These portable units are used to verify on-line analyzers.

Maintenance and calibration activities are documented in the facility logbook and/or Cityworks. The Environmental Compliance Officer and/or Supervisor report to Top Management when annual calibrations are completed for the flow meters and analyzers.

18. Emergency Management

Emergencies may still occur despite our best efforts to prevent them. Proper planning for emergencies is necessary to minimize potential health risks. The Municipality has developed procedures in preparation for potential situations or service interruptions that may result in the loss of the ability to maintain a supply of safe drinking water to consumers. These procedures cover how to respond and restore the system to normal operation.

Potential emergency situations or service interruptions for the Municipal Drinking Water Systems are listed in the Emergency Management table in Appendix H. The relevant Contingency Plans are listed for each emergency situation or service interruption. Printed copies of the Contingency Plans are located in the Operations Manuals located at each facility and at the Environmental Services Department Office. Electronic copies are stored on the shared drive and the Kintranet and can be accessed by all operators. The Environmental Compliance Officer is responsible for ensuring that the Contingency Plans are kept up to date.

Generally, all emergencies will be handled directly by the Environmental Services Department. The Environmental Services Manager will be kept informed of the emergencies at the time by the Environmental Services Supervisor or Environmental Compliance Officer. Details of the emergencies will be documented by the Supervisor or Environmental Compliance Officer for Top Management and other relevant parties. Any Operating Authority personnel may contact the Ministry of the Environment, Conservation and Parks or the Ministry of Health and Long-Term Care during an emergency situation.

For emergency situations that cannot be dealt with solely by the Environmental Services Department, the Municipality of Kincardine Emergency Response Plan will be put into effect. This will be arranged and coordinated through the Municipality of Kincardine Director of Infrastructure and Development as outlined in the Emergency Response Plan. A copy of the Emergency Response Plan is located at the Environmental Services Department Office.

An Emergency Contact List is posted at each water facility operated by the Environmental Services Department. In addition, contact lists and an emergency supplies list from Appendix F are kept at the Environmental Services Office and in each Environmental Services vehicle that detail contact information for key parties and supply locations. The Contact Lists are reviewed and updated by the Administrative Assistant as required, or at least once a year.

The Emergency Management section of the Operational Plan, along with the Contingency Plans, will be reviewed on a regular basis, as outlined in SOP022. The Environmental Compliance Officer is responsible for ensuring that these reviews are completed. Changes to the Contingency Plans are approved by the Environmental Services Supervisor or Manager of Environmental Services. Reviews and changes to emergency procedures may be initiated from an actual emergency, training or testing session, change at the facility, personnel change, or a scheduled review.

In-house training sessions are conducted every year and can include training on some of the Contingency Plans with those that are more critical given a higher priority. New Contingency

Plans as well as contingency plans with major revisions, once approved, will be reviewed with operations personnel within 2 months. Licenced operators are required to participate in the in-house training sessions to maintain a state of preparedness and to understand their roles and responsibilities. Because the Contingency Plans cannot all be reviewed during in-house training sessions, operators are given time to read through them on their own and discuss them with the Environmental Services Supervisor or Environmental Compliance Officer if they have questions. The internal goal is to have staff review each Contingency Plan every two years.

An Emergency Response Testing session will be held every 2 years. Training and testing for emergency response may be done through various means such as checklist testing, table-top walkthrough exercises, hands-on training (e.g. First Aid, CPR, Confined Space, etc.) or functional exercises (e.g. simulated disaster testing).

The Environmental Compliance Officer is responsible for organizing and scheduling training and testing sessions.

19. Internal Audits

Internal audits are conducted to ensure the QMS conforms to the requirements of the DWQMS and that it has been effectively implemented. The Operating Authority is responsible for ensuring that internal audits of the QMS are conducted on an annual basis according to procedure *QMS005 Internal Audit*.

20. Management Review

Top Management is responsible for ensuring that a Management Review is completed at least once every calendar year. Management Reviews are designed to provide Top Management with appropriate and sufficient data to make decisions about the QMS and, whenever necessary, to prompt changes and improvement in the QMS. *QMS006 Management Review* outlines the procedure for performing these reviews.

21. Continual Improvement

The QMS is regularly reviewed by operations personnel for the purpose of implementation and improvement. The Operating Authority strives to continually improve the effectiveness of the QMS by reviewing industry Best Management Practices and identifying non-conformances and implementing Preventive and Corrective Actions. *QMS008 Continual Improvement* documents a procedure for tracking and measuring continual improvement of the QMS.

Internal and External Audits are reviewed by the QMS Representative for the purpose of effecting changes to continually improve the QMS. In addition to the Preventive and Corrective Action Requests that need to be addressed, the Recommendations and Opportunities for Improvement are reviewed and, whenever possible, revisions are made.

Document Location:

Operational Plan including Appendices and Procedures

- Kincardine Water Treatment Plant Office Information Room-Hard Copy
- Kincardine Water Treatment Plant Office-Shared Drive (X)
- Kintranet

Operational Plan only (no Appendices or Procedures)

- Municipal Administration Office on Laserfiche
- Municipality of Kincardine website

Revision History:

Revision	Date	Summary of Changes	Revised by
10	May 3, 2023	Entire document- minor grammatical updates Entire document-removed references to wastewater Section 3 paragraph 2 replaced 'consent agenda' with 'committee of the whole agenda' Section 9 revised paragraph 1 -removed the I&D dept oversees all water systems and changed to oversees the ES department Section 9 paragraph 4 split into 3 paragraphs to separate duties of Compliance officer and Lead Operator. Section 10 added new paragraph 3 for Summer students with OIT's Section 18 paragraph 7 changed 'revised contingency plans' to 'contingency plans with major revisions'	Crimmings
9	October 2022	Section 5 paragraph 4 added 'In the absence of the ES Supervisor, the Manager of Environmental Services can approve QMS documentation' Section 8 paragraph 2 added Overall Responsible Operator for deviations from CCL's, changed SCADA and Data logger sheets to data review sheets Section 9 paragraph 4 revised 'The ES supervisor is the ORO' to 'The ES Supervisor and the ES Lead Operator perform the Overall Responsible Operator Role on a rotating basis'	Crimmings

Revision	Date	Summary of Changes	Revised by
		Section 9 paragraph 5 added ‘or the Overall Responsible Operator has the authority’ and removed ‘When the Environmental Services Lead Operator is acting as the Environmental Services Supervisor, they have the authority to make decisions related to operations normally made by the Supervisor’ Section 10 bullet point 1 removed all licences and certificates are posted at the ES office Section 10 paragraph 2 Revised paragraph to include CP018 and rotating schedule for ORO Section 11 paragraph 2 removed ‘OIT’s’ from On call rotation Section 11 paragraph 3 changed ES Supervisor to ORO Section 11 paragraph 4 changed ES Supervisor to ORO Section 11 paragraph 5 changed ES Supervisor to ORO Section 11 paragraph 7 added ES Lead Operator and Manager of ES Section 13 Added Paragraph 6 referencing the occurrence reports and procedure QMS007 Section 13 parapraph 1 added a listing of emergency supplies and equipment is included in appendix F Section 14 paragraph 2 changed 5 year to 5-10 year rolling plan Section 15-Rehabilitation paragraph 1 added ORO Section 15 Renewal paragraph 1 added ‘for operating and a 10 year plan for Capital,’ Section 18 paragraph 6 added or Manager of Environmental Services, paragraph 7 added as well as revised CP’s Section 18 paragraph 5 added from Appendix F	
8	May 2022	Entire document- Updated titles to reflect new organizational structure as follows: Director of Public works changed to Director of Infrastructure and Development Water and Wastewater Supervisor changed to Environmental Services Supervisor.	Crimmings

Revision	Date	Summary of Changes	Revised by
		Compliance Officer changed to Environmental Compliance Officer Water and Wastewater Lead Operator changed to Environmental Services Lead Operator Water and Wastewater Administrative Assistant changed to Environmental Services Administrative Assistant Utility Locator changed to Environmental Services Utility Locator Public works department also changed to Infrastructure and Development Department Changed the name of appendix H from Emergency Management to QMS Document Listings Introduction added 'For a listing of all external documents referenced within the Operational Plan, appendices and QMS procedures please see Appendix H: QMS Document Listings' Element 2 removed public works committee Element 3 removed public works committee Element 8 revised Datalogger Review Sheet to SCADA and Datalogger Review sheet Element 9 Added Environmental Services Manager to Organizational Chart, Revised-CAO has the authority to hire and terminate Operating Authority personnel other than Senior Managers. Changed Senior Managers to the Director and Manager. Revised paragraph 3 regarding top management duties for the Director and the Manager. Revised the ES Compliance Officer and ES Supervisor report to the ES Manager not the Director. Revised paragraph 5 to indicate in the absence of the ES Manager the ES Supervisor would report to the Director of I&D. If both are absent the ES Supervisor can make operations decisions. Element 10 changed morning tailgate sessions to just tailgate sessions, Added reviewing contingency plans, standard operating procedures and operations manuals.	

Revision	Date	Summary of Changes	Revised by
		Element 11-Added office hours of 8:30am to 4:30pm Monday to Friday Element 13-Changed the Essential supplier notification from 5 years to 3 years. Element 15-Maintenance Section- changed that work can be assigned to operations staff by the Supervisor or Lead Operator accordingly, Renewal section paragraph 2 added equipment in relation to Forms 1, 2 and 3 Element 16 paragraph 3 removed Certificate of Approval, paragraph 7 changed data review from mon-wed-fri to Monday to Friday, paragraph 9 changed Infrastructure and Development Dept to Top Management Element 18 Paragraph 2 added in the Emergency Management table in appendix H, and added Kintranet to document locations, paragraph 3 changed Director of Infrastructure and Development to Environmental Services Manager, Paragraph 5 added ES vehicles for contact list locations Document Location added shared drive (X), Kintranet, Laserfiche. Changed public works office to I&D Office	
7	September 2019	Elements 1 & 3 – referenced the Owner-Representative and more detail on endorsement Element 6 – moved system descriptions to Appendix C Elements 8, 15 & 17– reference to Cityworks Element 13 – purchases by credit card and reference to wastewater essential suppliers Element 16 – corrected Annual Summary Report, lab results and AWQIs references. Data Review M-W-F Element 21 – QMS008 Continual Improvement procedure reference	Hardman
6	September 2017	Added sign-off endorsement page Element 21 – addition of references to Preventive Actions and Best Management Practices Element 20 change to once every calendar year	Hardman

Revision	Date	Summary of Changes	Revised by
		Element 16 – removed reference to testing by Certified Operators. Updated information referring to Source Water Protection Element 15 – reference to Asset Management Plan, Forms 1, 2 and 3 and Director Notification added Element 13 – added that the Environmental Compliance Officer can edit the Essential Suppliers list and the QMS is communicated to the listed companies every 5 years Element 6 – Revised addresses to reflect civic addresses Updated the Armow DWS distribution system details. Updated the Underwood DWS distribution system details Removed the reference to 2008 when describing the Kincardine, Scott Point, Armow and Tiverton distribution system infrastructure. Updated the Scott Point DWS distribution details Revised the Tiverton DWS description to include *'The standpipe interior and exterior were recoated and a passive mixing system installed in 2016.'* and '*flushing at least once a year in the spring, with additional flushing as required,'* and *'an emergency generator is being installed at the Dent pumphouse in the fall of 2017'* and updated the distribution system details Revised the Kincardine DWS description to include *one vertical turbine high lift pump rated at 81 L/s at 82 m TDH* and *'In 2016 the interior and exterior coatings were replaced and a passive mixing system was installed in the standpipe.'* Added reference to the connection to the Lakeshore DWS and updated the distribution system details Element 2 – changed Environmental Compliance Officer reference to QMS Rep Element 1 – Removed reference to Environmental Services Department Added references to Wastewater where applicable Ministry of the Environment, Conservation and Parks *and Climate Change* name corrected References to the ORO changed to Environmental Services Supervisor as appropriate References to the Water and Wastewater Lead Operator position and duties were added	

All grammatical or typographical errors that do not change the intent of this Operational Plan shall be incorporated, without an Amendment to this Plan.

We, the undersigned, hereby endorse the Municipality of Kincardine Drinking Water Quality Management System Operational Plan #088-401, #088-402, #088-403, #088-404 and #088-405 Revision 10 dated May 2023, including the Quality Management System Policy Revision 3.

Manager of Environmental Services
Top Management
Mark O'Leary

Mark O'Leary
Signed with ConsignO Cloud (2023/05/15)
Verify with verifio.com or Adobe Reader.
notarius

Director of Infrastructure and Development
Top Management
Adam Weishar

Adam Weishar
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Chief Administrative Officer
The Corporation of the Municipality of Kincardine Owner-Representative
Jillene Bellchamber-Glazier

Jillene Bellchamber-Glazier
Signed with ConsignO Cloud (2023/05/15)
Verify with verifio.com or Adobe Reader.
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