

Ministry of the Environment,  
Conservation and Parks

Ministère de l'Environnement, de la  
Protection de la nature et des Parcs

Drinking Water and Environmental  
Compliance Division

Division de la conformité en matière d'eau  
potable et d'environnement

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November 8, 2022

The Corporation of the Municipality of Dutton-Dunwich  
199 Currie Road  
Dutton-Dunwich, ON N0L 1J0

Attention: Tim Hansen, Manager of Water Operations

Re: Dutton-Dunwich Distribution System Inspection Report (WW# 260002967)

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The enclosed Drinking Water Inspection Report outlines non-compliance, if any, with Ministry legislation, and policies for the above noted water system. Violations noted in this report, if any, have been evaluated based on community risk. These violations will be monitored for compliance with the minimum standards for drinking water in Ontario as set forth under the *Safe Drinking Water Act* and associated regulations. Where risk is deemed to be high and/or compliance is an ongoing concern, violations will be forwarded to this Ministry's Investigation and Enforcement Branch.

In order to measure individual inspection results, the Ministry has established an inspection compliance risk framework based on the principles of the Inspection, Investigation & Enforcement (II&E) Secretariat and advice of internal/external risk experts. The Inspection Summary Rating Record (IRR) provides the Ministry, the system owner and the local Public Health Units with a summarized quantitative measure of the drinking water system's annual inspection and regulated water quality testing performance.

Section 19 of the *Safe Drinking Water Act* (Standard of Care) creates a number of obligations for individuals who exercise decision-making authority over municipal drinking water systems. Please be aware that the Ministry has encouraged such individuals, particularly municipal councillors, to take steps to be better informed about the drinking water systems over which they have decision-making authority. These steps could include asking for a copy of this inspection report and a review of its findings. Further information about Section 19 can be found in "*Taking Care of Your Drinking Water: A guide for members of municipal council*" found under "Resources" on the Drinking Water Ontario website at [www.ontario.ca/drinkingwater](http://www.ontario.ca/drinkingwater).

Please note the attached IRR methodology memo describing how the risk rating model has improved to better reflect the health related and administrative non-compliance found in an inspection report. IRR ratings are published (for the previous inspection year) in the Ministry's Chief Drinking Water Inspector's Annual Report. **Please note that due to a change in IT systems, the Inspection Rating Report (IRR) cannot be generated at the same time as the inspection report. The IRR will be sent separately and prior to any public release (typically within 1-2 month of the completion of the inspection).** If you have any questions regarding the report, please feel free to call me at (226) 926-1785.

Sincerely,



Meghan Morgan  
Provincial Officer, Water Inspector  
London District Office  
[Meghan.Morgan@ontario.ca](mailto:Meghan.Morgan@ontario.ca)

cc. Southwestern Public Health Unit  
Kettle Creek Conservation Authority



DUTTON-DUNWICH DISTRIBUTION SYSTEM  
199 CURRIE RD, DUTTON, DUTTON-DUNWICH, ON, N0L  
1J0

## Inspection Report

System Number: 220002967  
Entity: MUNICIPALITY OF DUTTON-  
DUNWICH  
Inspection Start Date: 06/09/2022  
Inspection End Date: 10/17/2022  
Inspected By: Meghan Morgan  
Badge #: 1315

*M. Morgan*

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(signature)

## **NON-COMPLIANCE/NON-CONFORMANCE ITEMS**

This should not be construed as a confirmation of full compliance with all potential applicable legal requirement and BMPs. These inspection findings are limited to the components and/or activities that were assessed, and the legislative framework(s) that were applied. It remains the responsibility of the owner to ensure compliance with all applicable legislative and regulatory requirements.

If you have any questions related to this inspection, please contact the signed Provincial Officer.

### INSPECTION DETAILS

This section includes all questions that were assessed during the inspection.

**Ministry Program:** DRINKING WATER | **Regulated Activity:**

| Question ID  | MRDW1001001    | Question Type | Information |
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| <b>Question:</b>   |                |               |             |
| What was the scope of this inspection?   |                |               |             |
| Legislative Requirement  | Not Applicable |               |             |
| <b>Observation</b>   |                |               |             |
| <p>The primary focus of this inspection is to confirm compliance with Ministry of the Environment, Conservation and Parks (MECP) legislation as well as evaluating conformance with ministry drinking water policies and guidelines during the inspection period. The ministry utilizes a comprehensive, multi-barrier approach in the inspection of water systems that focuses on the source, treatment, and distribution components as well as management practices.</p> <p>This drinking water system is subject to the legislative requirements of the Safe Drinking Water Act, 2002 (SDWA) and regulations made therein, including Ontario Regulation 170/03, "Drinking Water Systems" (O. Reg. 170/03). This inspection has been conducted pursuant to Section 81 of the SDWA.</p> <p>This inspection report does not suggest that all applicable legislation and regulations were evaluated. It remains the responsibility of the owner to ensure compliance with all applicable legislative and regulatory requirements. A site visit was performed on June 30, 2022 by Water Inspector Meghan Morgan.</p> <p>Several documents were reviewed as part of the inspection, these documents include but are not limited to:</p> <ol style="list-style-type: none"> <li>1. Operations and Procedures Manual most recently revised June 2022.</li> <li>2. Drinking Water Works Permit #047-201 – Issue #4 dated January 18, 2021.</li> <li>3. Municipal Drinking Water Licence #047-101 – Issue #3 dated January 18, 2021.</li> <li>4. Certificates of analysis and operational documents maintained by the owner/operator for the inspection period.</li> </ol> <p>It should be noted that this inspection covers the period from August 1, 2021 to June 30, 2022.</p> |                |               |             |

| Question ID | MRDW1000001 | Question Type | Information |
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| <b>Question:</b><br>Does this drinking water system provide primary disinfection?  |                |
| <b>Legislative Requirement</b>   | Not Applicable |
| <b>Observation</b><br>This Drinking Water System provides for only secondary disinfection and distribution of water. Primary disinfection is undertaken by another regulated Drinking Water System which provides treated water to this Drinking Water System. |                |

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| <b>Question ID</b>  | MRDW1018001      | <b>Question Type</b> | Legislative |
| <b>Question:</b><br>Has the owner ensured that all equipment is installed in accordance with Schedule A and Schedule C of the Drinking Water Works Permit?    |                  |                      |             |
| <b>Legislative Requirement</b>  | SDWA   31   (1); |                      |             |
| <b>Observation</b><br>The owner had ensured that all equipment was installed in accordance with Schedule A and Schedule C of the Drinking Water Works Permit. |                  |                      |             |

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| <b>Question ID</b>   | MRDW1020001      | <b>Question Type</b> | Legislative |
| <b>Question:</b><br>Is the owner/operating authority able to demonstrate that, when required during the inspection period, Form 1 documents were prepared in accordance with their Drinking Water Works Permit?  |                  |                      |             |
| <b>Legislative Requirement</b>   | SDWA   31   (1); |                      |             |
| <b>Observation</b><br>The owner/operating authority was in compliance with the requirement to prepare Form 1 documents as required by their Drinking Water Works Permit during the inspection period. The owner completed three "Form 1 – Record of Watermains Authorized as a Future Alteration" documents for proposed new watermains and one watermain break. |                  |                      |             |

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| <b>Question ID</b>  | MRDW1021001 | <b>Question Type</b> | Legislative |
| <b>Question:</b><br>Is the owner/operating authority able to demonstrate that, when required during the inspection period, Form 2 documents were prepared in accordance with their Drinking Water Works Permit? |             |                      |             |

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| <b>Legislative Requirement</b>  | SDWA   31   (1); |
| <b>Observation</b>  |                  |
| <p>The owner/operating authority was in compliance with the requirement to prepare Form 2 documents as required by their Drinking Water Works Permit during the inspection period. The owner completed one "Form 2 – Record of Minor Modifications or Replacements to the Drinking Water System" document for new SCADA upgrades to hardware and software located at the WTP.</p> |                  |

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| <b>Question ID</b>   | MRDW1114001      | <b>Question Type</b> | Legislative |
| <b>Question:</b>   |                  |                      |             |
| Does the owner have evidence that, when required, all legal owners associated with the DWS were notified of the requirements of the Licence & Permit?        |                  |                      |             |
| <b>Legislative Requirement</b>   | SDWA   31   (1); |                      |             |
| <b>Observation</b>   |                  |                      |             |
| The owner had evidence that required notifications to all legal owners associated with the Drinking Water System had been made during the inspection period. |                  |                      |             |

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| <b>Question ID</b>  | MRDW1025001      | <b>Question Type</b> | Legislative |
| <b>Question:</b>  |                  |                      |             |
| Were all parts of the drinking water system that came in contact with drinking water (added, modified, replaced or extended) disinfected in accordance with a procedure listed in Schedule B of the Drinking Water Works Permit?  |                  |                      |             |
| <b>Legislative Requirement</b>  | SDWA   31   (1); |                      |             |
| <b>Observation</b>  |                  |                      |             |
| All parts of the drinking water system were disinfected in accordance with a procedure listed in Schedule B of the Drinking Water Works Permit. A review of disinfection documents produced for watermain repairs demonstrated that MECP and AWWA procedures for disinfection of water system components were followed in accordance with the Permit. |                  |                      |             |

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| <b>Question ID</b>  | MRDW1024001 | <b>Question Type</b> | Legislative |
| <b>Question:</b>  |             |                      |             |
| Do records confirm that the water treatment equipment which provides chlorination or chloramination for secondary disinfection purposes was operated as required? |             |                      |             |

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| <b>Legislative Requirement</b>  | SDWA   O. Reg. 170/03   1-2   (2); |
| <b>Observation</b>  |                                    |
| Records confirmed that the water treatment equipment which provides chlorination or chloramination for secondary disinfection purposes was operated so that at all times and all locations in the distribution system the chlorine residual was never less than 0.05 mg/l free or 0.25 mg/l combined. |                                    |

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| <b>Question ID</b>   | MRDW1038001                           | <b>Question Type</b> | Legislative |
| <b>Question:</b>   |                                       |                      |             |
| Is continuous monitoring equipment that is being utilized to fulfill O. Reg. 170/03 requirements performing tests for the parameters with at least the minimum frequency specified in the Table in Schedule 6 of O. Reg. 170/03 and recording data with the prescribed format?   |                                       |                      |             |
| <b>Legislative Requirement</b>   | SDWA   O. Reg. 170/03   6-5   (1)1-4; |                      |             |
| <b>Observation</b>   |                                       |                      |             |
| Continuous monitoring equipment that was being utilized to fulfill O. Reg. 170/03 requirements was performing tests for the parameters with at least the minimum frequency specified in the Table in Schedule 6 of O. Reg. 170/03 and recording data with the prescribed format. |                                       |                      |             |

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| <b>Question ID</b>   | MRDW1035001  | <b>Question Type</b> | Legislative |
| <b>Question:</b>   |  |                      |             |
| Are operators examining continuous monitoring test results and are they examining the results within 72 hours of the test?   |  |                      |             |
| <b>Legislative Requirement</b>   | SDWA   O. Reg. 170/03   6-5   (1)1-4; SDWA   O. Reg. 170/03   6-5   (1)5-10; |                      |             |
| <b>Observation</b>   |  |                      |             |
| Operators were examining continuous monitoring test results and they were examining the results within 72 hours of the test. |  |                      |             |

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| <b>Question ID</b>  | MRDW1037001 | <b>Question Type</b> | Legislative |
| <b>Question:</b>  |             |                      |             |
| Are all continuous monitoring equipment utilized for sampling and testing required by O. Reg. 170/03, or MDWL or DWWP or order, equipped with alarms or shut-off mechanisms that satisfy the standards described in Schedule 6? |             |                      |             |

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| <b>Legislative Requirement</b>  | SDWA   O. Reg. 170/03   6-5   (1)1-4; SDWA   O. Reg. 170/03   6-5   (1)5-10; SDWA   O. Reg. 170/03   6-5   (1.1); |
| <b>Observation</b>  |   |
| All continuous monitoring equipment utilized for sampling and testing required by O. Reg. 170/03, or Municipal Drinking Water Licence or Drinking Water Works Permit or order, were equipped with alarms or shut-off mechanisms that satisfy the standards described in Schedule 6. |   |

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| <b>Question ID</b>  | MRDW1040000  | <b>Question Type</b> | Legislative |
| <b>Question:</b>  |  |                      |             |
| Are all continuous analysers calibrated, maintained, and operated, in accordance with the manufacturer's instructions or the regulation?  |  |                      |             |
| <b>Legislative Requirement</b>  | SDWA   O. Reg. 170/03   6-5   (1)1-4; SDWA   O. Reg. 170/03   6-5   (1)5-10; |                      |             |
| <b>Observation</b>  |  |                      |             |
| All continuous analysers were calibrated, maintained, and operated, in accordance with the manufacturer's instructions or the regulation. |  |                      |             |

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| <b>Question ID</b>   | MRDW1108001   | <b>Question Type</b> | Legislative |
| <b>Question:</b>   |   |                      |             |
| Where continuous monitoring equipment used for the monitoring of free chlorine residual, total chlorine residual, combined chlorine residual or turbidity, required by O. Reg. 170/03, an Order, MDWL, or DWWP issued under Part V, SDWA, has triggered an alarm or an automatic shut-off, did a qualified person respond in a timely manner and take appropriate actions? |   |                      |             |
| <b>Legislative Requirement</b>   | SDWA   O. Reg. 170/03   6-5   (1)1-4; SDWA   O. Reg. 170/03   6-5   (1)5-10; SDWA   O. Reg. 170/03   6-5   (1.1); |                      |             |
| <b>Observation</b>   |   |                      |             |
| Where required continuous monitoring equipment used for the monitoring of chlorine residual and/or turbidity triggered an alarm or an automatic shut-off, a qualified person responded in a timely manner and took appropriate actions.  |   |                      |             |

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| <b>Question ID</b>  | MRDW1033001 | <b>Question Type</b> | Legislative |
| <b>Question:</b>  |             |                      |             |
| Is the secondary disinfectant residual measured as required for the large municipal |             |                      |             |



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| residential distribution system?  |   |
| <b>Legislative Requirement</b>  | SDWA   O. Reg. 170/03   7-2   (3); SDWA   O. Reg. 170/03   7-2   (4); |
| <b>Observation</b>  |   |
| <p>The secondary disinfectant residual was measured as required for the large municipal residential distribution system. Ontario Regulation 170/03, Schedule 7-2 requires the owner/operating authority of a large municipal residential system that provides secondary disinfection to ensure that at least seven distribution samples are taken each week and tested immediately for free chlorine residual. At least four of the samples must be taken on one day of the week, and at least three samples must be taken on a second day of the week, at least 48 hours after the samples taken on the first day.</p> <p>Records reviewed indicate that secondary disinfection is maintained in the Dutton-Dunwich Distribution System. Secondary disinfection is measured in the distribution system by operators who collect manual samples each day of the week excluding weekends. The chlorine residual results are documented by the operator with measured results being above 0.05mg/L for free chlorine. In addition, the Wallacetown Elevated Tower and the Iona Re-chlorination Station are equipped with free chlorine analyzers which continuously measure the concentration of free chlorine and have alarm set points to ensure the free chlorine residual is maintained above 0.05mg/L.</p> |   |

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| <b>Question ID</b>   | MRDW1099001    | <b>Question Type</b> | Information |
| <b>Question:</b>   |                |                      |             |
| Do records show that all water sample results taken during the inspection review period did not exceed the values of tables 1, 2 and 3 of the Ontario Drinking Water Quality Standards (O. Reg. 169/03)? |                |                      |             |
| <b>Legislative Requirement</b>   | Not Applicable |                      |             |
| <b>Observation</b>   |                |                      |             |
| Records showed that all water sample results taken during the inspection review period did not exceed the values of tables 1, 2 and 3 of the Ontario Drinking Water Quality Standards (O. Reg. 169/03).  |                |                      |             |

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| <b>Question ID</b>   | MRDW1081001   | <b>Question Type</b> | Legislative |
| <b>Question:</b>   |   |                      |             |
| For LMR systems, are all microbiological water quality monitoring requirements for distribution samples being met? |   |                      |             |
| <b>Legislative Requirement</b>   | SDWA   O. Reg. 170/03   10-2   (1); SDWA   O. Reg. 170/03   10-2   (2); SDWA   O. Reg. 170/03   10-2   (3); |                      |             |

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| <b>Observation</b>  |
| All microbiological water quality monitoring requirements prescribed by legislation for distribution samples in a large municipal residential system were being met. Ontario Regulation 170/03 - Schedule 10-2 stipulates that distribution water samples are required to be collected for testing every week within the frequency prescribed by the Regulation. Based on the service population the Owner/Operating Authority is required to take a minimum of 12 distribution samples every month. Every distribution system sample must be analyzed for: E.coli; total coliforms; and 25% of the required samples must be tested for general bacteria population expressed as colony counts on a heterotrophic plate count. A review of the records for the inspection period indicate the number of microbiological samples collected ranged from 16 to 20 per month. |

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| <b>Question ID</b>  | MRDW1096001                        | <b>Question Type</b> | Legislative |
| <b>Question:</b>  |                                    |                      |             |
| Do records confirm that chlorine residual tests are being conducted at the same time and at the same location that microbiological samples are obtained?  |                                    |                      |             |
| <b>Legislative Requirement</b>  | SDWA   O. Reg. 170/03   6-3   (1); |                      |             |
| <b>Observation</b>  |                                    |                      |             |
| Records confirmed that chlorine residual tests were being conducted at the same time and at the same location that microbiological samples were obtained. |                                    |                      |             |

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| <b>Question ID</b>   | MRDW1086001   | <b>Question Type</b> | Legislative |
| <b>Question:</b>   |   |                      |             |
| Are all haloacetic acid water quality monitoring requirements prescribed by legislation conducted within the required frequency and at the required location?  |   |                      |             |
| <b>Legislative Requirement</b>   | SDWA   O. Reg. 170/03   13-6.1   (1); SDWA   O. Reg. 170/03   13-6.1   (2); SDWA   O. Reg. 170/03   13-6.1   (3); SDWA   O. Reg. 170/03   13-6.1   (4); SDWA   O. Reg. 170/03   13-6.1   (5); SDWA   O. Reg. 170/03   13-6.1   (6); |                      |             |
| <b>Observation</b>   |   |                      |             |
| All haloacetic acid water quality monitoring requirements prescribed by legislation were conducted within the required frequency and at the required location. Haloacetic Acid samples are required to be collected and tested each calendar quarter from the distribution system in accordance with Schedule 13-6.1 of O.Reg. 170/03 with the frequency stipulated in Schedule 6-1.1(4), and shall be taken from a point in the drinking water system's distribution system that is likely to have an elevated potential for the formation of haloacetic acids.<br>A review of the records provided for the inspection review period indicate that this |   |                      |             |

requirement has been met, and all sample results were below the standard.

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| <b>Question ID</b>  | MRDW1087001   | <b>Question Type</b> | Legislative |
| <b>Question:</b><br>Have all trihalomethane water quality monitoring requirements prescribed by legislation been conducted within the required frequency and at the required location?  |   |                      |             |
| <b>Legislative Requirement</b>  | SDWA   O. Reg. 170/03   13-6   (1); SDWA   O. Reg. 170/03   13-6   (2); SDWA   O. Reg. 170/03   13-6   (3); SDWA   O. Reg. 170/03   13-6   (4); SDWA   O. Reg. 170/03   13-6   (5); SDWA   O. Reg. 170/03   13-6   (6); |                      |             |
| <b>Observation</b><br>All trihalomethane water quality monitoring requirements prescribed by legislation were conducted within the required frequency and at the required location. Trihalomethane samples are required to be collected and tested each calendar quarter from the distribution system in accordance with Schedule 13-6 of O.Reg. 170/03 with the frequency stipulated in Schedule 6-1.1(4), and shall be taken from a point in the drinking water system's distribution system that is likely to have an elevated potential for the formation of trihalomethanes.<br>A review of the records provided for the inspection review period indicate that this requirement has been met, and all sample results were below the standard. |   |                      |             |

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| <b>Question ID</b>  | MRDW1113000                         | <b>Question Type</b> | Legislative |
| <b>Question:</b><br>Have all changes to the system registration information been provided to the Ministry within ten (10) days of the change? |                                     |                      |             |
| <b>Legislative Requirement</b>  | SDWA   O. Reg. 170/03   10.1   (3); |                      |             |
| <b>Observation</b><br>All changes to the system registration information were provided within ten (10) days of the change.                    |                                     |                      |             |

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| <b>Question ID</b>  | MRDW1059000                 | <b>Question Type</b> | Legislative |
| <b>Question:</b><br>Do the operations and maintenance manuals contain plans, drawings and process descriptions sufficient for the safe and efficient operation of the system? |                             |                      |             |
| <b>Legislative Requirement</b>  | SDWA   O. Reg. 128/04   28; |                      |             |

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| <b>Observation</b>  |
| The operations and maintenance manuals contained plans, drawings and process descriptions sufficient for the safe and efficient operation of the system. A review of the operations and maintenance manual found that it contains relevant, adequate and up-to-date descriptions of processes employed in the system as well as plans/drawings to meet the requirements of O. Reg. 128. |

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| <b>Question ID</b>   | MRDW1060000      | <b>Question Type</b> | Legislative |
| <b>Question:</b><br>Do the operations and maintenance manuals meet the requirements of the DWWP and MDWL issued under Part V of the SDWA?  |                  |                      |             |
| <b>Legislative Requirement</b>   | SDWA   31   (1); |                      |             |
| <b>Observation</b>   |                  |                      |             |
| The operations and maintenance manuals met the requirements of the Drinking Water Works Permit and Municipal Drinking Water Licence issued under Part V of the SDWA. Municipal Drinking Water Licence #047-101, Issue #3, Section 16 of Schedule B specifies the requirements for the Operations and Maintenance Manual. The manual for the Dutton-Dunwich Distribution System contained the required information. |                  |                      |             |

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| <b>Question ID</b>   | MRDW1061001   | <b>Question Type</b> | Legislative |
| <b>Question:</b><br>Are logbooks properly maintained and contain the required information? |   |                      |             |
| <b>Legislative Requirement</b>   | SDWA   O. Reg. 128/04   27   (1); SDWA   O. Reg. 128/04   27   (2); SDWA   O. Reg. 128/04   27   (3); SDWA   O. Reg. 128/04   27   (4); SDWA   O. Reg. 128/04   27   (5); SDWA   O. Reg. 128/04   27   (6); SDWA   O. Reg. 128/04   27   (7); |                      |             |
| <b>Observation</b>   |   |                      |             |
| Logbooks were properly maintained and contained the required information.                  |   |                      |             |

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| <b>Question ID</b>  | MRDW1062001                  | <b>Question Type</b> | Legislative |
| <b>Question:</b><br>Do records or other record keeping mechanisms confirm that operational testing not performed by continuous monitoring equipment is being done by a certified operator, water quality analyst, or person who meets the requirements of O. Reg. 170/03 7-5? |                              |                      |             |
| <b>Legislative Requirement</b>  | SDWA   O. Reg. 170/03   7-5; |                      |             |

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| <b>Observation</b>   |
| Records or other record keeping mechanisms confirmed that operational testing not performed by continuous monitoring equipment was being done by a certified operator, water quality analyst, or person who suffices the requirements of O. Reg. 170/03 7-5. |

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| <b>Question ID</b>   | MRDW1071000   | <b>Question Type</b> | BMP |
| <b>Question:</b><br>Has the owner provided security measures to protect components of the drinking water system? |   |                      |     |
| <b>Legislative Requirement</b>   | Not Applicable  |                      |     |
| <b>Observation</b>   | The owner had provided security measures to protect components of the drinking water system. The security measures provided include intrusion alarms, fully covered water storage facilities and regular visits from operators. |                      |     |

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| <b>Question ID</b>  | MRDW1073001  | <b>Question Type</b> | Legislative |
| <b>Question:</b><br>Has the overall responsible operator been designated for all subsystems which comprise the drinking water system? |  |                      |             |
| <b>Legislative Requirement</b>  | SDWA   O. Reg. 128/04   23   (1);  |                      |             |
| <b>Observation</b>  | The overall responsible operator had been designated for each subsystem. |                      |             |

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| <b>Question ID</b>  | MRDW1074001  | <b>Question Type</b> | Legislative |
| <b>Question:</b><br>Have operators-in-charge been designated for all subsystems for which comprise the drinking water system? |  |                      |             |
| <b>Legislative Requirement</b>  | SDWA   O. Reg. 128/04   25   (1);  |                      |             |
| <b>Observation</b>  | Operators-in-charge had been designated for all subsystems which comprise the drinking water system. |                      |             |

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| <b>Question ID</b>  | MRDW1075001                 | <b>Question Type</b> | Legislative |
| <b>Question:</b><br>Do all operators possess the required certification?  |                             |                      |             |
| <b>Legislative Requirement</b>  | SDWA   O. Reg. 128/04   22; |                      |             |
| <b>Observation</b><br>All operators possessed the required certification. |                             |                      |             |

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|---|------------------------------------|----------------------|-------------|
| <b>Question ID</b>  | MRDW1076001                        | <b>Question Type</b> | Legislative |
| <b>Question:</b><br>Do only certified operators make adjustments to the treatment equipment?  |                                    |                      |             |
| <b>Legislative Requirement</b>  | SDWA   O. Reg. 170/03   1-2   (2); |                      |             |
| <b>Observation</b><br>Only certified operators made adjustments to the treatment equipment. A review of the logbooks indicated that only certified operators make adjustments to the treatment equipment. |                                    |                      |             |

**Ontario**



**Ministry of the Environment, Conservation and Parks  
Drinking Water System Inspection Report Appendix A**

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**Stakeholder References**

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# Key Reference and Guidance Material for Municipal Residential Drinking Water Systems

Many useful materials are available to help you operate your drinking water system. Below is a list of key materials owners and operators of municipal residential drinking water systems frequently use.

To access these materials online click on their titles in the table below or use your web browser to search for their titles. Contact the Ministry if you need assistance or have questions at 1-866-793-2588 or [waterforms@ontario.ca](mailto:waterforms@ontario.ca).

For more information on Ontario's drinking water visit [www.ontario.ca/drinkingwater](http://www.ontario.ca/drinkingwater)



| PUBLICATION TITLE  | PUBLICATION NUMBER                  |
|--|-------------------------------------|
| <b>FORMS:</b><br>Drinking Water System Profile Information<br>Laboratory Services Notification<br>Adverse Test Result Notification | 012-2149E<br>012-2148E<br>012-4444E |
| Taking Care of Your Drinking Water: A Guide for Members of Municipal Councils  | Website                             |
| Procedure for Disinfection of Drinking Water in Ontario  | Website                             |
| Strategies for Minimizing the Disinfection Products Trihalomethanes and Haloacetic Acids   | Website                             |
| Filtration Processes Technical Bulletin  | Website                             |
| Ultraviolet Disinfection Technical Bulletin  | Website                             |
| Guide for Applying for Drinking Water Works Permit Amendments, & License Amendments  | Website                             |
| Certification Guide for Operators and Water Quality Analysts   | Website                             |
| Guide to Drinking Water Operator Training Requirements   | 9802E                               |
| Community Sampling and Testing for Lead: Standard and Reduced Sampling and Eligibility for Exemption                               | Website                             |
| Drinking Water System Contact List   | 7128E01                             |
| Ontario's Drinking Water Quality Management Standard - Pocket Guide  | Website                             |
| Watermain Disinfection Procedure   | Website                             |
| List of Licensed Laboratories  | Website                             |



# Principaux guides et documents de référence sur les réseaux résidentiels municipaux d'eau potable

De nombreux documents utiles peuvent vous aider à exploiter votre réseau d'eau potable. Vous trouverez ci-après une liste de documents que les propriétaires et exploitants de réseaux résidentiels municipaux d'eau potable utilisent fréquemment. Pour accéder à ces documents en ligne, cliquez sur leur titre dans le tableau ci-dessous ou faites une recherche à l'aide de votre navigateur Web. Communiquez avec le ministère au 1-866-793-2588, ou encore à [waterforms@ontario.ca](mailto:waterforms@ontario.ca) si vous avez des questions ou besoin d'aide.



Pour plus de renseignements sur l'eau potable en Ontario, consultez le site [www.ontario.ca/eaupotable](http://www.ontario.ca/eaupotable)

| TITRE DE LA PUBLICATION   | NUMÉRO DE PUBLICATION |
|---|-----------------------|
| Renseignements sur le profil du réseau d'eau potable  | 012-2149F             |
| Avis de demande de services de laboratoire  | 012-2148F             |
| Avis de résultats d'analyse insatisfaisants et de règlement des problèmes   | 012-4444F             |
| Prendre soin de votre eau potable - Un guide destiné aux membres des conseils municipaux  | Site Web              |
| Marche à suivre pour désinfecter l'eau potable en Ontario   | Site Web              |
| Stratégies pour minimiser les trihalométhanes et les acides haloacétiques de sous-produits de désinfection                          | Site Web              |
| Filtration Processes Technical Bulletin (en anglais seulement)  | Site Web              |
| Ultraviolet Disinfection Technical Bulletin (en anglais seulement)  | Site Web              |
| Guide de présentation d'une demande de modification du permis d'aménagement de station de production d'eau potable                  | Site Web              |
| Guide sur l'accréditation des exploitants de réseaux d'eau potable et des analystes de la qualité de l'eau de réseaux d'eau potable | Site Web              |
| Guide sur les exigences relatives à la formation des exploitants de réseaux d'eau potable   | 9802F                 |
| Échantillonnage et analyse du plomb dans les collectivités : échantillonnage normalisé ou réduit et admissibilité à l'exemption     | Site Web              |
| Liste des personnes-ressources du réseau d'eau potable  | Site Web              |
| L'eau potable en Ontario - Norme de gestion de la qualité - Guide de poche  | Site Web              |
| Procédure de désinfection des conduites principales   | Site Web              |
| Laboratoires autorisés  | Site Web              |

# APPLICATION OF THE RISK METHODOLOGY USED FOR MEASURING MUNICIPAL RESIDENTIAL DRINKING WATER SYSTEM INSPECTION RESULTS



The Ministry of the Environment (MOE) has a rigorous and comprehensive inspection program for municipal residential drinking water systems (MRDWS). Its objective is to determine the compliance of MRDWS with requirements under the Safe Drinking Water Act and associated regulations. It is the responsibility of the municipal residential drinking water system owner to ensure their drinking water systems are in compliance with all applicable legal requirements.

This document describes the risk rating methodology, which has been applied to the findings of the Ministry's MRDWS inspection

results since fiscal year 2008-09. The primary goals of this assessment are to encourage ongoing improvement of these systems and to establish a way to measure this progress.

MOE reviews the risk rating methodology every three years.

The Ministry's Municipal Residential Drinking Water Inspection Protocol contains 15 inspection modules consisting of approximately 100 regulatory questions. Those protocol questions are also linked to definitive guidance that ministry inspectors use when conducting MRDWS inspections.

[ontario.ca/drinkingwater](http://ontario.ca/drinkingwater)

The questions address a wide range of regulatory issues, from administrative procedures to drinking water quality monitoring. The inspection protocol also contains a number of non-regulatory questions.

A team of drinking water specialists in the ministry assessed each of the inspection protocol regulatory questions to determine the risk (not complying with the regulation) to the delivery of safe drinking water. This assessment was based on established provincial risk assessment principles, with each question receiving a risk rating referred to as the Question Risk Rating. Based on the number of areas where a system is deemed to be non-compliant during the inspection, and the significance of these areas to administrative, environmental, and health consequences, a risk-based inspection rating is calculated by the ministry for each drinking water system.

It is important to be aware that an inspection rating less than 100 per cent does not mean the drinking water from the system is unsafe. It shows areas where a system’s operation can improve. The ministry works with owners and operators of systems to make sure they know what they need to do to achieve full compliance.

The inspection rating reflects the inspection results of the specific drinking water system for the reporting year. Since the methodology is applied consistently over a period of years, it serves as a comparative measure both provincially and in relation to the individual system. Both the drinking water system and the public are able to track the performance over time, which encourages continuous improvement and allows systems to identify specific areas requiring attention.

The ministry’s annual inspection program is an important aspect of our drinking water safety net. The ministry and its partners share a common commitment to excellence and we continue to work toward the goal of 100 per cent regulatory compliance.

## Determining Potential to Compromise the Delivery of Safe Water

The risk management approach used for MRDWS is aligned with the Government of Ontario’s Risk Management Framework. Risk management is a systematic approach to identifying potential hazards, understanding the likelihood and consequences of the hazards, and taking steps to reduce their risk if necessary and as appropriate.

The Risk Management Framework provides a formula to be used in the determination of risk:

$$\text{RISK} = \text{LIKELIHOOD} \times \text{CONSEQUENCE}$$

(of the consequence)

Every regulatory question in the inspection protocol possesses a likelihood value (L) for an assigned consequence value (C) as described in **Table 1** and **Table 2**.

| TABLE 1:                                  |                  |
|---|------------------|
| Likelihood of Consequence Occurring       | Likelihood Value |
| 0% - 0.99% (Possible but Highly Unlikely) | L = 0            |
| 1 – 10% (Unlikely)                        | L = 1            |
| 11 – 49% (Possible)                       | L = 2            |
| 50 – 89% (Likely)                         | L = 3            |
| 90 – 100% (Almost Certain)                | L = 4            |

| TABLE 2:                          |                   |
|-----------------------------------|-------------------|
| Consequence                       | Consequence Value |
| Medium Administrative Consequence | C = 1             |
| Major Administrative Consequence  | C = 2             |
| Minor Environmental Consequence   | C = 3             |
| Minor Health Consequence          | C = 4             |
| Medium Environmental Consequence  | C = 5             |
| Major Environmental Consequence   | C = 6             |
| Medium Health Consequence         | C = 7             |
| Major Health Consequence          | C = 8             |

The consequence values (0 through 8) are selected to align with other risk-based programs and projects currently under development or in use within the ministry as outlined in **Table 2**.

The Question Risk Rating for each regulatory inspection question is derived from an evaluation of every identified consequence and its corresponding likelihood of occurrence:

- All levels of consequence are evaluated for their potential to occur
- Greatest of all the combinations is selected.

The Question Risk Rating quantifies the risk of non-compliance of each question relative to the others. Questions with higher values are those with a potentially more significant impact on drinking water safety and a higher likelihood of occurrence. The highest possible value would be 32 (4×8) and the lowest would be 0 (0×1).

**Table 3** presents a sample question showing the risk rating determination process.

| TABLE 3:  |   |  |                                       |   |  |  |                                       |
|---|---|--|---------------------------------------|---|--|--|---------------------------------------|
| Does the Operator in Charge ensure that the equipment and processes are monitored, inspected and evaluated? |   |  |                                       |   |  |  |                                       |
| Risk = Likelihood × Consequence   |   |  |                                       |   |  |  |                                       |
| C=1   | C=2   | C=3  | C=4                                   | C=5   | C=6  | C=7                                    | C=8                                   |
| <b>Medium</b><br>Administrative<br>Consequence  | <b>Major</b><br>Administrative<br>Consequence | <b>Minor</b><br>Environmental<br>Consequence | <b>Minor</b><br>Health<br>Consequence | <b>Medium</b><br>Environmental<br>Consequence | <b>Major</b><br>Environmental<br>Consequence | <b>Medium</b><br>Health<br>Consequence | <b>Major</b><br>Health<br>Consequence |
| L=4<br>(Almost<br>Certain)  | L=1<br>(Unlikely)                             | L=2<br>(Possible)                            | L=3<br>(Likely)                       | L=3<br>(Likely)                               | L=1<br>(Unlikely)                            | L=3<br>(Likely)                        | L=2<br>(Possible)                     |
| <b>R=4</b>  | <b>R=2</b>                                    | <b>R=6</b>                                   | <b>R=12</b>                           | <b>R=15</b>                                   | <b>R=6</b>                                   | <b>R=21</b>                            | <b>R=16</b>                           |

## Application of the Methodology to Inspection Results

Based on the results of a MRDWS inspection, an overall inspection risk rating is calculated. During an inspection, inspectors answer the questions related to regulatory compliance and input their “yes”, “no” or “not applicable” responses into the Ministry’s Laboratory and Waterworks Inspection System (LWIS) database. A “no” response indicates non-compliance. The maximum number of regulatory questions asked by an inspector varies by: system (i.e., distribution, stand-alone); type of inspection (i.e., focused, detailed); and source type (i.e., groundwater, surface water).

The risk ratings of all non-compliant answers are summed and divided by the sum of the risk ratings of all questions asked (maximum question rating). The resulting inspection risk rating (as a percentage) is subtracted from 100 per cent to arrive at the final inspection rating.

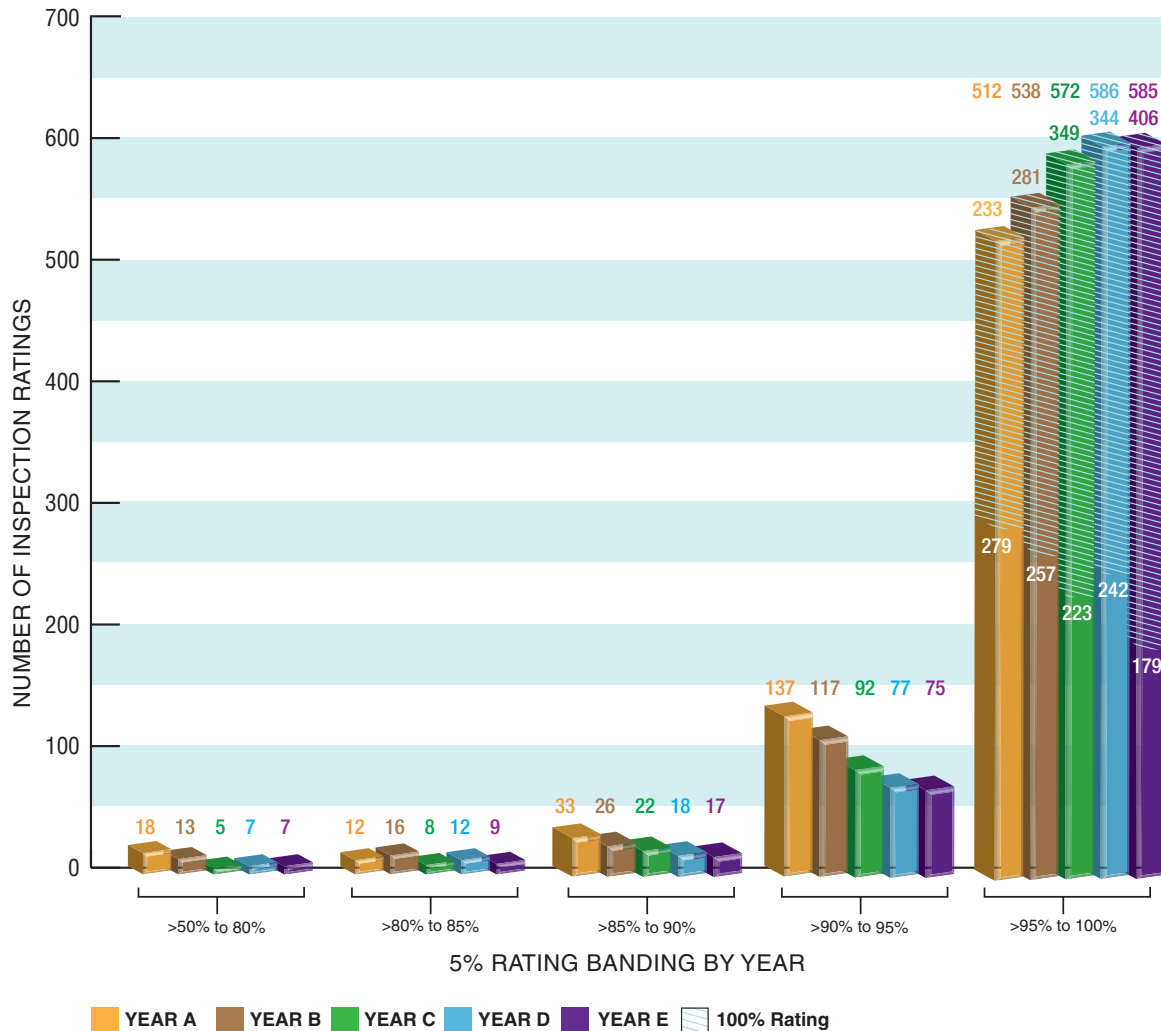


## Application of the Methodology for Public Reporting

The individual MRDWS Total Inspection Ratings are published with the ministry's Chief Drinking Water Inspector's Annual Report.

**Figure 1** presents the distribution of MRDWS ratings for a sample of annual inspections. Individual drinking water systems can compare against all the other inspected facilities over a period of inspection years.

**Figure 1: Year Over Year Distribution of MRDWS Ratings**



## Reporting Results to MRDWS Owners/Operators

A summary of inspection findings for each system is generated in the form of an Inspection Rating Record (IRR). The findings are grouped into the 15 possible modules of the inspection protocol,

which would provide the system owner/operator with information on the areas where they need to improve. The 15 modules are:

- |                         |                                 |  |  |
|-------------------------|---------------------------------|--|--|
| 1. Source               | 5. Treatment Process Monitoring | 9. Logbooks                            | 13. Water Quality Monitoring                       |
| 2. Permit to Take Water | 6. Process Wastewater           | 10. Contingency and Emergency Planning | 14. Reporting, Notification and Corrective Actions |
| 3. Capacity Assessment  | 7. Distribution System          | 11. Consumer Relations                 | 15. Other Inspection Findings                      |
| 4. Treatment Processes  | 8. Operations Manuals           | 12. Certification and Training         |  |

For further information, please visit [www.ontario.ca/drinkingwater](http://www.ontario.ca/drinkingwater)