

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

Southwest Region
733 Exeter Road
London, ON N6E 1L3
Phone: 519-873-5000

Région Sud-Ouest
733 rue Exeter
London, ON N6E 1L3
Tél: 519-873-5000

November 16, 2023

The Corporation of the Township of Southwold
35663 Fingal Line
Fingal, ON N0L 1K0

Attention: Lisa Higgs, Cao/Clerk

Re: Southwold Distribution System Inspection Report (#210001362)

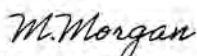
The enclosed Drinking Water Inspection Report outlines non-compliance, if any, with Ministry legislation, and policies for the above noted water system. Violations noted in this report, if any, have been evaluated based on community risk. These violations will be monitored for compliance with the minimum 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.

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

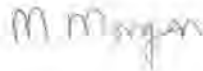
cc. Southwestern Public Health Unit
Kettle Creek Conservation Authority



SOUTHWOLD DISTRIBUTION SYSTEM
35663 FINGAL LINE, SOUTHWOLD, ON, N0L 1K0
INSPECTION REPORT

Entity: ONTARIO CLEAN WATER
AGENCY
CORPORATION OF THE
TOWNSHIP OF SOUTHWOLD

Inspection Start Date: August 29, 2023
Inspection End Date: November 08, 2023
Inspected By: Meghan Morgan
Badge #: 1315



(signature)

NON-COMPLIANCE

This should not be construed as a confirmation of full compliance with all potential applicable legal requirements. 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.

RECOMMENDATIONS

This should not be construed as a confirmation of full conformance with all potential applicable 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:** DW Municipal Residential

| Question ID | DWMR1001000 | Question Type | Information |
|--|-------------|---------------|-------------|
| Legislative Requirement(s): Not Applicable | | | |
| Question: What was the scope of this inspection? | | | |
| Compliance Response(s)/Corrective Action(s)/Observation(s): <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.</p> <p>A site visit was performed on October 5, 2023 by Water Inspector Meghan Morgan. Several documents were reviewed as part of the inspection, these documents include but are not limited to:</p> <ol style="list-style-type: none"> 1. Operations and Maintenance Manual most recently revised December 2022. 2. Drinking Water Works Permit #055-201 – Issue #4 dated July 20, 2021. 3. Municipal Drinking Water Licence #055-101 – Issue #3 dated July 20 2021. 4. Certificates of analysis and operational documents maintained by the owner/operator for the inspection period. <p>It should be noted that this inspection covers the period from October 1, 2022 to September 30, 2023.</p> | | | |

| Question ID | DWMR1000000 | Question Type | Information |
|---|-------------|---------------|-------------|
| Legislative Requirement(s): Not Applicable | | | |
| Question: Does this drinking water system provide primary disinfection? | | | |

Compliance Response(s)/Corrective Action(s)/Observation(s):

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.

Treated potable water is provided by the Elgin Area Primary Water Supply by way of the St. Thomas Area Secondary Water Supply System, St. Thomas Water Distribution System and the Central Elgin Distribution System.

Water enters the Southwold Distribution System from the St. Thomas Area Secondary Water Supply System and the Central Elgin Distribution System. The Southwold Distribution System supplies water to the Dutton-Dunwich Distribution System, St. Thomas Distribution System and Middlesex Centre.

Secondary disinfection is supplied by the St. Thomas Area Secondary Water Supply. The Shedden Re-Chlorination Facility boosts the free chlorine residual of the water passing through as needed.

| Question ID | DWMR1018000 | Question Type | Legislative |
|---|-------------|---------------|-------------|
| Legislative Requirement(s): SDWA 31 (1); | | | |
| Question: Has the owner ensured that all equipment is installed in accordance with Schedule A and Schedule C of the Drinking Water Works Permit? | | | |
| Compliance Response(s)/Corrective Action(s)/Observation(s): The owner had ensured that all equipment was installed in accordance with Schedule A and Schedule C of the Drinking Water Works Permit. | | | |

| Question ID | DWMR1020000 | Question Type | Legislative |
|---|-------------|---------------|-------------|
| Legislative Requirement(s): SDWA 31 (1); | | | |
| Question: 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? | | | |
| Compliance Response(s)/Corrective Action(s)/Observation(s): 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 operating authority completed one "Form 1 – Record of Watermains Authorized as a Future Alterations" document during this inspection period for the installation of a new watermain. | | | |

| | | | |
|--|-------------|----------------------|-------------|
| Question ID | DWMR1114000 | Question Type | Legislative |
| Legislative Requirement(s): SDWA 31 (1); | | | |
| Question: Does the owner have evidence that, when required, all legal owners associated with the DWS were notified of the requirements of the Licence & Permit? | | | |
| Compliance Response(s)/Corrective Action(s)/Observation(s): The owner had evidence that required notifications to all legal owners associated with the Drinking Water System had been made during the inspection period. | | | |

| | | | |
|---|-------------|----------------------|-------------|
| Question ID | DWMR1028000 | Question Type | Legislative |
| Legislative Requirement(s): SDWA 31 (1); | | | |
| Question: Are up-to-date plans for the drinking water system kept in place, or made available in such a manner, that they may be readily viewed by all persons responsible for all or part of the operation of the drinking water system in accordance with the DWWP and MDWL issued under Part V of the SDWA? | | | |
| Compliance Response(s)/Corrective Action(s)/Observation(s): Up-to-date plans for the drinking water system were kept in a place, or made available in such a manner, that they could be readily viewed by all persons responsible for all or part of the operation of the drinking water system in accordance with the DWWP and MDWL issued under Part V of the SDWA. Up-to-date drawings were observed to be at the Shedden Re-Chlorination Facility and are also available electronically. | | | |

| | | | |
|--|-------------|----------------------|-------------|
| Question ID | DWMR1025000 | Question Type | Legislative |
| Legislative Requirement(s): SDWA 31 (1); | | | |
| Question: 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? | | | |
| Compliance Response(s)/Corrective Action(s)/Observation(s): All parts of the drinking water system were disinfected in accordance with a procedure listed in Schedule B of the Drinking Water Works Permit. Drinking Water Works Permit # 055-201, Issue # 4, Section 2.3 of Schedule B stipulates that all parts of the drinking water system in contact with drinking water which are added, modified, replaced, extended; or taken out of service for inspection, repair or other activities that may lead | | | |

to contamination, shall be disinfected before being put into service in accordance with a procedure approved by the Director or in accordance with the applicable provisions of the following documents:

- a) As of February 10, 2021 the ministry's Watermain Disinfection Procedure, August 1, 2020;
- b) Subject to condition 2.3.2, any updated version of the ministry's Watermain Disinfection Procedure;
- c) AWWA C652 – Standard for Disinfection of Water-Storage Facilities;
- d) AWWA C653 – Standard for Disinfection of Water

A review of the disinfection records produced for new watermains and watermain repairs, the Owner and Operating Authority demonstrated that the MECP and AWWA procedures for the disinfection of water system components are followed.

| Question ID | DWMR1027000 | Question Type | Legislative |
|--|-------------|---------------|-------------|
| Legislative Requirement(s): SDWA 31 (1); | | | |
| Question: Does the owner have evidence indicating that all chemicals and materials which come in contact with water within the drinking water system have met all applicable AWWA and ANSI standards in accordance with the DWWP and MDWL issued under Part V of the SDWA? | | | |
| Compliance Response(s)/Corrective Action(s)/Observation(s): The owner had evidence indicating that all chemicals and materials that come in contact with water within the drinking water system met the AWWA and ANSI standards in accordance with the Municipal Drinking Water Licence and Drinking Water Works Permit issued under Part V of the SDWA. | | | |

| Question ID | DWMR1024000 | Question Type | Legislative |
|---|-------------|---------------|-------------|
| Legislative Requirement(s): SDWA O. Reg. 170/03 1-2 (2); | | | |
| Question: Do records confirm that the water treatment equipment which provides chlorination or chloramination for secondary disinfection purposes was operated as required? | | | |
| Compliance Response(s)/Corrective Action(s)/Observation(s): 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. | | | |

| Question ID | DWMR1033000 | Question Type | Legislative |
|------------------------------------|-------------|---------------|-------------|
| Legislative Requirement(s): | | | |

SDWA | O. Reg. 170/03 | 7-2 | (3); SDWA | O. Reg. 170/03 | 7-2 | (4);

Question:

Is the secondary disinfectant residual measured as required for the large municipal residential distribution system?

Compliance Response(s)/Corrective Action(s)/Observation(s):

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 48hrs after the samples taken on the first day.

Records reviewed indicate that secondary disinfection is maintained in the Southwold Distribution System. Secondary disinfection is measured in the distribution system by operators who take at least seven grab samples on two separate days every week. The chlorine residual results are documented on round sheets or in the logbook by the operator with measured results being above 0.05mg/L for free chlorine. In addition, the Shedden re-chlorination station is equipped with two online 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.

| | | | |
|---|-------------|----------------------|-----|
| Question ID | DWMR1049000 | Question Type | BMP |
| Legislative Requirement(s): Not Applicable | | | |
| Question: Do records confirm that disinfectant residuals are routinely checked at the extremities and dead ends of the distribution system? | | | |
| Compliance Response(s)/Corrective Action(s)/Observation(s): Records confirmed that disinfectant residuals were routinely checked at the extremities and dead ends of the distribution system. | | | |

| | | | |
|---|-------------|----------------------|-------------|
| Question ID | DWMR1036000 | Question Type | Legislative |
| Legislative Requirement(s): SDWA O. Reg. 170/03 6-7 (1); | | | |
| Question: Where continuous monitoring equipment is not used for chlorine residual analysis, are samples tested using an acceptable portable device? | | | |
| Compliance Response(s)/Corrective Action(s)/Observation(s): | | | |

Samples for chlorine residual analysis were tested using an acceptable portable device.

| Question ID | DWMR1099000 | Question Type | Information |
|---|-------------|---------------|-------------|
| Legislative Requirement(s): Not Applicable | | | |
| Question: 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)? | | | |
| Compliance Response(s)/Corrective Action(s)/Observation(s): 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). | | | |

| Question ID | DWMR1081000 | Question Type | Legislative |
|--|-------------|---------------|-------------|
| Legislative Requirement(s): SDWA O. Reg. 170/03 10-2 (1); SDWA O. Reg. 170/03 10-2 (2); SDWA O. Reg. 170/03 10-2 (3); | | | |
| Question: For LMR systems, are all microbiological water quality monitoring requirements for distribution samples being met? | | | |
| Compliance Response(s)/Corrective Action(s)/Observation(s): 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 service population of approximately 4,395 the owner/operating authority is required to take a minimum of twelve 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 operating authority typically takes 5 samples per week and that this requirement has been met. | | | |

| Question ID | DWMR1096000 | Question Type | Legislative |
|--|-------------|---------------|-------------|
| Legislative Requirement(s): SDWA O. Reg. 170/03 6-3 (1); | | | |
| Question: Do records confirm that chlorine residual tests are being conducted at the same time and at the same location that microbiological samples are obtained? | | | |

Compliance Response(s)/Corrective Action(s)/Observation(s):

Records confirmed that chlorine residual tests were being conducted at the same time and at the same location that microbiological samples were obtained.

| Question ID | DWMR1086000 | Question Type | Legislative |
|--|-------------|---------------|-------------|
| Legislative Requirement(s): | | | |
| 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); | | | |
| Question: | | | |
| Are all haloacetic acid water quality monitoring requirements prescribed by legislation conducted within the required frequency and at the required location? | | | |
| Compliance Response(s)/Corrective Action(s)/Observation(s): | | | |
| All haloacetic acid water quality monitoring requirements prescribed by legislation were conducted within the required frequency and at the required location. | | | |
| In accordance with Section 5.(1) of Ontario Regulation 170/03, on the owner of a drinking water system that obtains all of its water from a large municipal residential system must sample in accordance with Section 13-6.1 (1). This section requires the owner of a drinking water system that provides chlorination or chloramination and the operating authority for the system to ensure that at least one distribution sample is taken in each calendar quarter, from a point in the drinking water system's distribution system, or plumbing that is connected to the drinking water system, that is likely to have an elevated potential for the formation of haloacetic acids. Further, (2) The owner of the drinking water system and the operating authority for the system shall ensure that each of the samples taken under subsection (1) is tested for haloacetic acids (HAAs). A review of the records provided for the inspection review period indicate that this requirement has been met and sample results are below the standard. | | | |

| Question ID | DWMR1087000 | Question Type | Legislative |
|---|-------------|---------------|-------------|
| Legislative Requirement(s): | | | |
| 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); | | | |
| Question: | | | |
| Have all trihalomethane water quality monitoring requirements prescribed by legislation been conducted within the required frequency and at the required location? | | | |
| Compliance Response(s)/Corrective Action(s)/Observation(s): | | | |
| All trihalomethane water quality monitoring requirements prescribed by legislation were conducted within the required frequency and at the required location. | | | |
| All trihalomethane water quality monitoring requirements prescribed by legislation were conducted within the required frequency and at the required location. Ontario Regulation 170/03, | | | |

Schedule 13-6 requires the owner of a drinking water system that provides chlorination or chloramination and the operating authority for the system to ensure that at least one distribution sample is taken in each calendar quarter, from a point in the drinking water system's distribution system, or plumbing that is connected to the drinking water system, that is likely to have an elevated potential for the formation of trihalomethanes. Further, (2) The owner of the drinking water system and the operating authority for the system shall ensure that each of the samples taken under subsection (1) is tested for trihalomethanes. A review of the records provided for the inspection review period indicate that this requirement has been met and sample results are below the standard.

| Question ID | DWMR1092000 | Question Type | Legislative |
|---|-------------|---------------|-------------|
| Legislative Requirement(s): SDWA O. Reg. 170/03 6-2; | | | |
| Question: Has the owner ensured that water samples are taken at the prescribed location? | | | |
| Compliance Response(s)/Corrective Action(s)/Observation(s): The owner ensured that water samples were taken at the prescribed location. | | | |

| Question ID | DWMR1095000 | Question Type | Legislative |
|---|-------------|---------------|-------------|
| Legislative Requirement(s): SDWA O. Reg. 170/03 15.1-10; SDWA O. Reg. 170/03 15.1-4 (1); SDWA O. Reg. 170/03 15.1-5 (1); SDWA O. Reg. 170/03 15.1-5 (10); SDWA O. Reg. 170/03 15.1-5 (11); SDWA O. Reg. 170/03 15.1-5 (12); SDWA O. Reg. 170/03 15.1-5 (2); SDWA O. Reg. 170/03 15.1-5 (3); SDWA O. Reg. 170/03 15.1-5 (4); SDWA O. Reg. 170/03 15.1-5 (5); SDWA O. Reg. 170/03 15.1-5 (6); SDWA O. Reg. 170/03 15.1-5 (7); SDWA O. Reg. 170/03 15.1-5 (8); SDWA O. Reg. 170/03 15.1-5 (9); SDWA O. Reg. 170/03 15.1-7 (1); SDWA O. Reg. 170/03 15.1-7 (2); SDWA O. Reg. 170/03 15.1-7 (3); SDWA O. Reg. 170/03 15.1-7 (4); SDWA O. Reg. 170/03 15.1-9 (1); SDWA O. Reg. 170/03 15.1-9 (2); SDWA O. Reg. 170/03 15.1-9 (3); SDWA O. Reg. 170/03 15.1-9 (4); SDWA O. Reg. 170/03 15.1-9 (5); SDWA O. Reg. 170/03 15.1-9 (6); SDWA O. Reg. 170/03 15.1-9 (7); SDWA O. Reg. 170/03 15.1-9 (8); SDWA O. Reg. 170/03 15.1-9 (9); | | | |
| Question: Have all lead sampling requirements prescribed by Schedule 15.1 of O. Reg. 170/03 been met? | | | |
| Compliance Response(s)/Corrective Action(s)/Observation(s): All sampling requirements for lead prescribed by schedule 15.1 of O. Reg. 170/03 were being met. The operating authority is sampling for lead in accordance with the SDWA, O. Reg. 170/03, Section 15.1-5 (10) and as such is sampling and testing for lead during each of the periods described in subsection (5) in every third 12-month period. Lead sampling occurred during this inspection period on February 21, 2023 and July 10, 2023, all sample results were below the | | | |

standard.

| | | | |
|---|--------------|----------------------|-------------|
| Question ID | DWMMR1098000 | Question Type | Legislative |
| Legislative Requirement(s): SDWA O. Reg. 170/03 13 (1); SDWA O. Reg. 170/03 13 (2); SDWA O. Reg. 170/03 13 (3); | | | |
| Question: Has the owner indicated that the required records are kept and will be kept for the required time period? | | | |
| Compliance Response(s)/Corrective Action(s)/Observation(s): The owner indicated that the required records are kept and will be kept for the required time period. | | | |

| | | | |
|--|--------------|----------------------|-------------|
| Question ID | DWMMR1110000 | Question Type | Legislative |
| Legislative Requirement(s): SDWA O. Reg. 170/03 11 (6); | | | |
| Question: Was an Annual Report containing the required information prepared by February 28 of the following year? | | | |
| Compliance Response(s)/Corrective Action(s)/Observation(s): The Annual Report containing the required information was prepared by February 28th of the following year. | | | |

| | | | |
|--|--------------|----------------------|-------------|
| Question ID | DWMMR1056000 | Question Type | Information |
| Legislative Requirement(s): Not Applicable | | | |
| Question: Has the donor provided an Annual Report to the owner of this receiver drinking water system? | | | |
| Compliance Response(s)/Corrective Action(s)/Observation(s): The donor provided an Annual Report to the owner of this receiver drinking water system. | | | |

| | | | |
|---|--------------|----------------------|-------------|
| Question ID | DWMMR1111000 | Question Type | Legislative |
| Legislative Requirement(s): SDWA O. Reg. 170/03 22-2 (1); SDWA O. Reg. 170/03 22-2 (2); SDWA O. Reg. 170/03 22-2 (3); SDWA O. Reg. 170/03 22-2 (4); | | | |
| Question: Have Summary Reports for municipal council been completed on time, include the required | | | |

content, and distributed in accordance with the regulatory requirements?

Compliance Response(s)/Corrective Action(s)/Observation(s):

Summary Reports for municipal council were completed on time, included the required content, and were distributed in accordance with the regulatory requirements.

| | | | |
|--|-------------|----------------------|-------------|
| Question ID | DWMR1113000 | Question Type | Legislative |
| Legislative Requirement(s): SDWA O. Reg. 170/03 10.1 (3); | | | |
| Question: Have all changes to the system registration information been provided to the Ministry within ten (10) days of the change? | | | |
| Compliance Response(s)/Corrective Action(s)/Observation(s): All changes to the system registration information were provided within ten (10) days of the change. | | | |

| | | | |
|--|-------------|----------------------|-------------|
| Question ID | DWMR1045000 | Question Type | Legislative |
| Legislative Requirement(s): SDWA 31 (1); | | | |
| Question: Has the owner updated the document describing the distribution components within 12 months of completion of alterations to the system? | | | |
| Compliance Response(s)/Corrective Action(s)/Observation(s): The owner had up-to-date documents describing the distribution components as required. | | | |

| | | | |
|--|-------------|----------------------|-----|
| Question ID | DWMR1046000 | Question Type | BMP |
| Legislative Requirement(s): Not Applicable | | | |
| Question: Is there a backflow prevention program, policy and/or bylaw in place that addresses cross connections and connections to high hazard facilities? | | | |
| Compliance Response(s)/Corrective Action(s)/Observation(s): There was a backflow prevention program, policy and/or bylaw in place. | | | |

| | | | |
|--|-------------|----------------------|-----|
| Question ID | DWMR1053000 | Question Type | BMP |
| Legislative Requirement(s): Not Applicable | | | |

Question:

Is the Owner able to maintain proper pressures in the distribution system and is pressure monitored to alert the operator of conditions which may lead to loss of pressure below the value under which the system is designed to operate?

Compliance Response(s)/Corrective Action(s)/Observation(s):

The owner was able to maintain proper pressures in the distribution system and pressure was monitored to alert the operator of conditions which may lead to loss of pressure below the value under which the system is designed to operate.

| | | | |
|---|-------------|----------------------|-----|
| Question ID | DWMR1048000 | Question Type | BMP |
| Legislative Requirement(s): Not Applicable | | | |
| Question: Has the owner implemented a program for the flushing of watermains as per industry standards? | | | |
| Compliance Response(s)/Corrective Action(s)/Observation(s): The owner had implemented a program for the flushing of watermains as per industry standards. | | | |

| | | | |
|---|-------------|----------------------|-----|
| Question ID | DWMR1050000 | Question Type | BMP |
| Legislative Requirement(s): Not Applicable | | | |
| Question: Is there a program in place for inspecting and exercising valves? | | | |
| Compliance Response(s)/Corrective Action(s)/Observation(s): There was a program in place for inspecting and exercising valves. Valves in this system are exercised on an annual basis. | | | |

| | | | |
|--|-------------|----------------------|-----|
| Question ID | DWMR1051000 | Question Type | BMP |
| Legislative Requirement(s): Not Applicable | | | |
| Question: Is there a program in place for inspecting and operating hydrants? | | | |
| Compliance Response(s)/Corrective Action(s)/Observation(s): There was a program in place for inspecting and operating hydrants. Hydrants are flushed and inspected on a semi-annual basis in the spring and fall. | | | |

| | | | |
|--|--------------|----------------------|-----|
| Question ID | DWMMR1052000 | Question Type | BMP |
| Legislative Requirement(s): Not Applicable | | | |
| Question: Is there a by-law or policy in place limiting access to hydrants? | | | |
| Compliance Response(s)/Corrective Action(s)/Observation(s): There was a by-law or policy in place limiting access to hydrants. | | | |

| | | | |
|---|--------------|----------------------|-------------|
| Question ID | DWMMR1058000 | Question Type | Legislative |
| Legislative Requirement(s): SDWA O. Reg. 128/04 28; | | | |
| Question: Do operators and maintenance personnel have ready access to operations and maintenance manuals? | | | |
| Compliance Response(s)/Corrective Action(s)/Observation(s): Operators and maintenance personnel had ready access to operations and maintenance manuals. | | | |

| | | | |
|--|--------------|----------------------|-------------|
| Question ID | DWMMR1059000 | Question Type | Legislative |
| Legislative Requirement(s): SDWA O. Reg. 128/04 28; | | | |
| Question: Do the operations and maintenance manuals contain plans, drawings and process descriptions sufficient for the safe and efficient operation of the system? | | | |
| Compliance Response(s)/Corrective Action(s)/Observation(s): The operations and maintenance manuals contained plans, drawings and process descriptions sufficient for the safe and efficient operation of the system. | | | |

| | | | |
|--|--------------|----------------------|-------------|
| Question ID | DWMMR1060000 | Question Type | Legislative |
| Legislative Requirement(s): SDWA 31 (1); | | | |
| Question: Do the operations and maintenance manuals meet the requirements of the DWWP and MDWL issued under Part V of the SDWA? | | | |
| Compliance Response(s)/Corrective Action(s)/Observation(s): 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 #055-101 – Issue # 3, Section 16 of Schedule B outline the requirements for the Operations and Maintenance Manuals. The Southwold Distribution System's Operations and Maintenance Manual contain the aforementioned requirements as stated in the MDWL including but not limited to; contingency plans, procedures to deal with emergencies, procedures for dealing with complaints associated with the drinking water system and copies of the current permit and licence.

| Question ID | DWMR1061000 | Question Type | Legislative |
|---|-------------|---------------|-------------|
| Legislative Requirement(s): 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); | | | |
| Question: Are logbooks properly maintained and contain the required information? | | | |
| Compliance Response(s)/Corrective Action(s)/Observation(s): Logbooks were properly maintained and contained the required information. | | | |

| Question ID | DWMR1062000 | Question Type | Legislative |
|--|-------------|---------------|-------------|
| Legislative Requirement(s): SDWA O. Reg. 170/03 7-5; | | | |
| Question: 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? | | | |
| Compliance Response(s)/Corrective Action(s)/Observation(s): 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. | | | |

| Question ID | DWMR1063000 | Question Type | Legislative |
|--|-------------|---------------|-------------|
| Legislative Requirement(s): SDWA O. Reg. 170/03 6-10 (1); | | | |
| Question: For every required operational test and for every required sample, is a record made of the date, time, location, name of the person conducting the test and result of the test? | | | |
| Compliance Response(s)/Corrective Action(s)/Observation(s): For every required operational test and every required sample, a record was made of the date, time, location, name of the person conducting the test and result of the test. | | | |

| | | | |
|--|--------------|----------------------|-------------|
| Question ID | DWMMR1064000 | Question Type | Legislative |
| Legislative Requirement(s): SDWA O. Reg. 128/04 26 (2); | | | |
| Question: Did the operator-in-charge ensure that records were maintained of all adjustments made to the processes within his or her responsibility? | | | |
| Compliance Response(s)/Corrective Action(s)/Observation(s): The operator-in-charge ensured that records were maintained of all adjustments made to the processes within his or her responsibility. | | | |

| | | | |
|---|--------------|----------------------|-------------|
| Question ID | DWMMR1065000 | Question Type | Legislative |
| Legislative Requirement(s): SDWA O. Reg. 128/04 27 (6); | | | |
| Question: Are logs and other record keeping mechanisms available for at least five (5) years? | | | |
| Compliance Response(s)/Corrective Action(s)/Observation(s): Logs or other record keeping mechanisms were available for at least five (5) years. | | | |

| | | | |
|---|--------------|----------------------|-----|
| Question ID | DWMMR1066000 | Question Type | BMP |
| Legislative Requirement(s): Not Applicable | | | |
| Question: Is spill containment provided for process chemicals and standby power generator fuel? | | | |
| Compliance Response(s)/Corrective Action(s)/Observation(s): Spill containment was provided for process chemicals and/or standby power generator fuel. | | | |

| | | | |
|--|--------------|----------------------|-----|
| Question ID | DWMMR1067000 | Question Type | BMP |
| Legislative Requirement(s): Not Applicable | | | |
| Question: Are clean-up equipment and materials in place for the clean up of spills? | | | |
| Compliance Response(s)/Corrective Action(s)/Observation(s): Clean-up equipment and materials were in place for the clean up of spills. | | | |

| | | | |
|--|--------------|----------------------|-----|
| Question ID | DWMMR1068000 | Question Type | BMP |
| Legislative Requirement(s): Not Applicable | | | |
| Question: If available, are standby power generators tested under normal load conditions? | | | |
| Compliance Response(s)/Corrective Action(s)/Observation(s): Standby power generators were tested under normal load conditions. | | | |

| | | | |
|--|--------------|----------------------|-----|
| Question ID | DWMMR1071000 | Question Type | BMP |
| Legislative Requirement(s): Not Applicable | | | |
| Question: Has the owner provided security measures to protect components of the drinking water system? | | | |
| Compliance Response(s)/Corrective Action(s)/Observation(s): The owner had provided security measures to protect components of the drinking water system. | | | |

| | | | |
|---|--------------|----------------------|-----|
| Question ID | DWMMR1072000 | Question Type | BMP |
| Legislative Requirement(s): Not Applicable | | | |
| Question: Has the owner and/or operating authority undertaken efforts to promote water conservation and reduce water losses in their system? | | | |
| Compliance Response(s)/Corrective Action(s)/Observation(s): The owner and/or operating authority undertook efforts to promote water conservation and reduce water losses in their system. | | | |

| | | | |
|--|--------------|----------------------|-------------|
| Question ID | DWMMR1073000 | Question Type | Legislative |
| Legislative Requirement(s): SDWA O. Reg. 128/04 23 (1); | | | |
| Question: Has the overall responsible operator been designated for all subsystems which comprise the drinking water system? | | | |
| Compliance Response(s)/Corrective Action(s)/Observation(s): The overall responsible operator had been designated for each subsystem. | | | |

| | | | |
|--------------------|--------------|----------------------|-------------|
| Question ID | DWMMR1074000 | Question Type | Legislative |
|--------------------|--------------|----------------------|-------------|

| |
|--|
| <p>Legislative Requirement(s): SDWA O. Reg. 128/04 25 (1);</p> |
| <p>Question: Have operators-in-charge been designated for all subsystems which comprise the drinking water system?</p> |
| <p>Compliance Response(s)/Corrective Action(s)/Observation(s): Operators-in-charge had been designated for all subsystems which comprise the drinking water system.</p> |

| Question ID | DWMR1075000 | Question Type | Legislative |
|---|-------------|---------------|-------------|
| <p>Legislative Requirement(s): SDWA O. Reg. 128/04 22;</p> | | | |
| <p>Question: Do all operators possess the required certification?</p> | | | |
| <p>Compliance Response(s)/Corrective Action(s)/Observation(s): All operators possessed the required certification.</p> | | | |

| Question ID | DWMR1076000 | Question Type | Legislative |
|---|-------------|---------------|-------------|
| <p>Legislative Requirement(s): SDWA O. Reg. 170/03 1-2 (2);</p> | | | |
| <p>Question: Do only certified operators make adjustments to the treatment equipment?</p> | | | |
| <p>Compliance Response(s)/Corrective Action(s)/Observation(s): Only certified operators made adjustments to the treatment equipment.</p> | | | |

Stakeholder References

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.

For more information on Ontario's drinking water visit www.ontario.ca/drinkingwater



| PUBLICATION TITLE | PUBLICATION NUMBER |
|--|-------------------------------------|
| FORMS: Drinking Water System Profile Information Laboratory Services Notification Adverse Test Result Notification | 012-2149E 012-2148E 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 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

| 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 |



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

Inspection Rating Record and Inspection Risk Methodology

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 up to 14 inspection modules and consists of approximately 120 regulatory questions. Those protocol questions are also linked to definitive guidance that ministry inspectors use when conducting MRDWS inspections.

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 |
|--|---|--|---------------------------------------|---|--|--|---------------------------------------|
| Medium Administrative Consequence | Major Administrative Consequence | Minor Environmental Consequence | Minor Health Consequence | Medium Environmental Consequence | Major Environmental Consequence | Medium Health Consequence | Major Health Consequence |
| L=4 (Almost Certain) | L=1 (Unlikely) | L=2 (Possible) | L=3 (Likely) | L=3 (Likely) | L=1 (Unlikely) | L=3 (Likely) | L=2 (Possible) |
| R=4 | R=2 | R=6 | R=12 | R=15 | R=6 | R=21 | R=16 |

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).

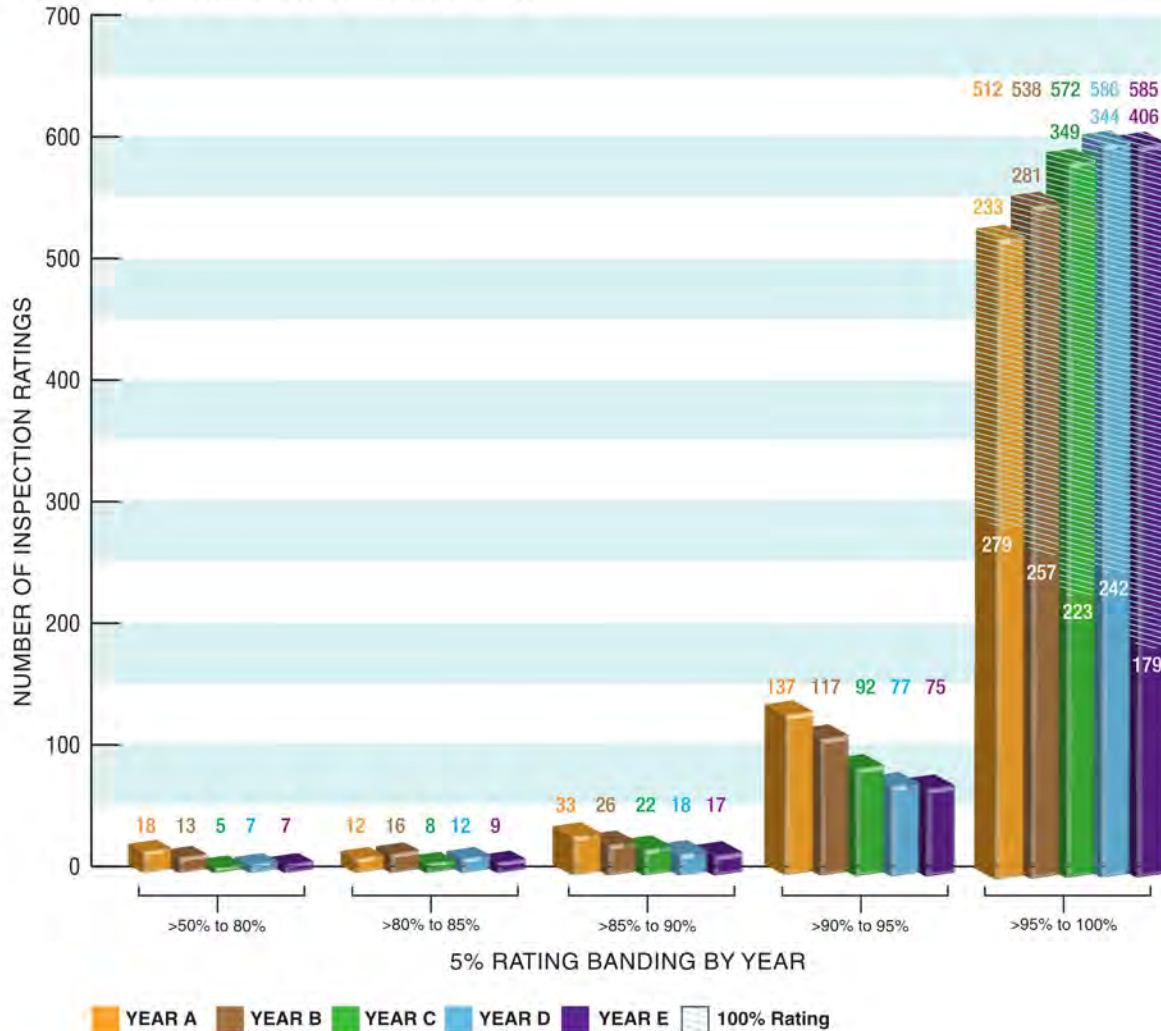
The risk ratings of all non-compliant answers are summed and divided by the sum of the risk ratings of all questions asked (maximum question rating). The resulting inspection risk rating (as a percentage) is subtracted from 100 per cent to arrive at the final inspection rating.

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 14 possible modules of the inspection protocol,

which would provide the system owner/operator with information on the areas where they need to improve. The 14 modules are:

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

For further information, please visit www.ontario.ca/drinkingwater