

Appendix I- Summary of Non-Compliance Events

Drinking Water System	Responsibility	Legislative Requirement	Statement of Non-Compliance	Immediate Action Taken	Risk to Drinking Water Safety and Public Health	Control Measures
Caledon Village - Alton	Region of Peel	Permit to Take Water (PTTW) #P-300-9058863382, Condition 3.2 (Table A) The combined taking (flow rate) from Alton Well 3 and Alton Well 4A shall not exceed 727 L/min	<p>On July 6, 2021, Alton Well 3 exceeded its maximum permitted flow rate for eight (8) minutes (10:33 am - 10:41 am) during well maintenance activities. The well was disinfected the day prior and on July 6 operations staff pumped the superchlorinated water to waste as required.</p> <p>The residual chlorine remained despite pumping at the maximum permitted flow rate. Operations staff increased the flow rate to 900 L/min, and peaked as high as 1,080 L/min, until the residual chlorine in the well was purged.</p> <p>Upon review of 72-hour trends the following day, the flow exceedance was identified. Local Ministry office was notified of the event on July 8.</p>	<p>At 10:45 am on July 6, 2021, when chlorine residual measured 0 mg/L from the purged well water, the flow rate was immediately adjusted to below the maximum permitted rate.</p> <p>The on-the-spot decision to temporarily exceed the PTTW limit was made to avoid negative impact to the natural environment by allowing a plume of superchlorinated water to remain and disperse further into the aquifer.</p>	LOW Increased pumping rate during maintenance work that resulted in over-pumping and exceedance of the daily limit of water taking had no impact on the safety of the drinking water supply and posed no risk to public health.	Peel staff reviewed internal practices to identify opportunities to improve the well maintenance and recommissioning processes. Where planned maintenance work has the potential for causing an exceedance of a water taking limit, staff will consider the option of obtaining Ministry permission for low-risk short-term water takings prior to the required work.
Palgrave - Caledon East	Region of Peel	Permit to Take Water (PTTW) #P-300-2095321129, Condition 3.2 (Table A) The flow rate for Caledon East Well 3 shall not exceed 1,776 L/min	<p>On December 28, 2021, upon initial well start-up of a routine production run, Caledon East Well 3 raw water flow exceeded its maximum permitted rate for seven (7) minutes (11:23 am - 11:30 am), peaking at 1,998 L/min.</p> <p>It is suspected that there was entrapped air in the well header that made its way to the flow control valve, restricting it from achieving set flow rate.</p> <p>Upon review of 72-hour trends the following day, the flow exceedance was identified by Operations staff; however, the Christmas holiday office closure delayed communication to Compliance staff.</p> <p>Exceedance was identified during monthly review of flow trends on January 18, 2022. Local Ministry office was notified of the event on January 20.</p>	<p>At 11:30 am on December 28, 2021, the flow automatically stabilized to its set/normal rate of 1,380 L/min.</p> <p>When the operator arrived at the station that afternoon, in response to the high flow alarm, the issue had already rectified itself and the well flow rate was at 1,380 L/min, well below the limit. There was no further action necessary.</p>	LOW Exceedance of the water taking limit caused by increased pumping rate due to malfunction of flow control instrumentation had no impact on the safety of the drinking water supply and posed no risk to public health.	<p>Water flow meters have alarms that are triggered when the high flow rate setpoints are reached. Operators are dispatched to site to troubleshoot and take the necessary corrective action to restore flow to within permitted rates.</p> <p>On January 19, 2022, operations staff who review 72-hour trends were reminded of the compliance and reporting requirements regarding flow rate exceedances. This topic will also be covered in the February 2022 staff meetings, to ensure Operators who perform work at the water stations are also reminded of the requirements.</p> <p>Going forward, during statutory holidays and extended office closures, 72-hour trend review communication will include on-call Compliance staff, in order to ensure appropriate and timely action.</p>
Caledon Village - Alton	Region of Peel	DWWP #009-205 Schedule B, Section 2.3 All parts of the drinking water system that come in contact with drinking water that are added, modified, replaced, extended shall be disinfected in accordance with a procedure approved by the Ministry or in accordance with the applicable provisions of the disinfection related documents. Watermain Disinfection Procedure When performing maintenance and repair activities, the operating authority shall maintain records of the information listed in Section 4 of the procedure as a minimum.	<p>Review of records during the 2021 Ministry Inspection revealed three (3) instances where the operator had not completed the "Watermain Break/Appurtenance Failure Information" section on the work order. In all three cases, the repair was completed by a contractor. The contractor also did not document on their Contractor Report that disinfection was completed on the pipe and repair parts, in order to fulfill the documentation requirements.</p>	<p>On September 15, 2021, communication was sent to all contractors who perform repair work on Peel watermain requesting an update to the Contractor Report to include a mandatory field for recording disinfection of all pipe and repair parts.</p> <p>In November/December staff meetings, operations staff were informed of the Ministry inspection finding that repair details were not consistently recorded. Staff were reminded that the contractor is required to fill out the details on the Contractor Report and if Peel is performing the repair work, the Operator-in-Charge must complete this information on the work order.</p>	LOW Disinfection of the watermain and parts was performed during the repair work as required. With repair documentation lacking complete disinfection work details, the Region was unable to demonstrate compliance with all steps of the disinfection procedure. As a standard practice, Region collects samples following watermain repair work to confirm water quality. Impact to the safety of drinking water and public health resulting from this administrative oversight was assessed to be low.	Water and Wastewater Business Support staff will be monitoring completion of the work order fields during monthly reviews, and similarly review Contractor Reports received for completeness.

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Arthur P. Kennedy Water Treatment Plant	Ontario Clean Water Agency (OCWA)	Municipal Drinking Water Licence Schedule C, Condition 4.0 Calibration of CT [disinfection] monitoring system instrumentation must be checked when necessary and calibrated at least once every 12 months.	Review of records during the 2020 Ministry Inspection revealed that the temperature analyzers located at the raw water intake and reservoir north and south cells, which form part of the CT monitoring instrumentation, were not inspected/calibrated annually.	OCWA has performed a review of measurement instrumentation that forms part of the CT monitoring system to ensure that the equipment is scheduled for calibration at a minimum every 12 months, including confirming that temperature calibrations are performed and recorded.	LOW Temperature calibration was a new Licence condition. Temperature is measured on multi-parameter analyzer units. Although the units were calibrated for the other parameters, according to existing practice, the new requirement to calibrate for temperature was overlooked. Impact to the quality of drinking water and public health resulting from this oversight was assessed to be low.	OCWA has made changes to the preventive maintenance system to ensure CT monitoring instruments are scheduled for calibration of all parameters as required. Staff performing the work have been informed of the requirements and frequencies.
South Peel Distribution System	Region of Peel	Municipal Drinking Water Licence # 009-101, Schedule B, Section 10.1 Water systems must not discharge a contaminant into the natural environment that causes, or is likely to cause, an adverse effect.	On several occasions throughout 2021, water emerging from a watermain break picked up soil (silt) and washed it into nearby storm sewers or waterbody until the water supply was isolated for watermain repair efforts to be initiated.	All the events were reported to the Ministry appropriately. The Region of Peel Environmental Control immediately responds to these events to assess impact to fish, wildlife, or plant life and report the event to the Ministry.	N/A	During these unplanned events, staff strive to maintain drinking water system pressure to ensure the integrity of the drinking water supply, and also minimize impact on the environment and the public.
	Region of Peel	Watermain Disinfection Procedure The backflow prevention provisions within Section 4.8.9 of ANSI/AWWA Standard C651 shall be mandatory for the commissioning of new watermain.	Review of records during the 2021 Ministry Inspection revealed that not all records were readily available to demonstrate backflow preventer (BFP) installation and testing for new watermain commissioning work.	During the November/December 2021 staff meetings, Operations staff were advised that the BFP test reports must be completed and verified before they continue with commissioning activities.	LOW Records of BFP installation and testing were stored in different repositories, depending on the scope of project. Inability to locate all BFP reports for the inspection period to demonstrate compliance posed low risk to public health and low impact on the integrity of drinking water system.	Peel has been working on a process to ensure all watermain commissioning BFP test report records are managed appropriately. Moving forward, Construction Inspector on site will collect the completed BFP test report from contractor and submit it to Peel's Backflow Prevention group for record keeping. A central repository has been created to save the records using an identifiable file naming convention.
	Region of Peel	Watermain Disinfection Procedure When performing maintenance and repair activities, the operating authority shall maintain records of the information listed in Section 4 of the procedure as a minimum.	Review of records during the 2021 Ministry Inspection revealed several instances where records were not available to demonstrate that pipe and repair parts had been disinfected immediately before use. Some Peel work orders had incomplete information in the "Watermain Break/Appurtenance Failure Information" section. The Contractor Report for the project also did not include these details.	On September 15, 2021, communication was sent to all contractors who perform repair work on Peel watermain requesting an update to the Contractor Report to include a mandatory field for recording disinfection of all pipe and repair parts. In November/December staff meetings, operations staff were informed of the Ministry inspection finding that repair details were not consistently recorded. Staff were reminded that the contractor is required to fill out the details on the Contractor Report and if Peel is performing the repair work, the Operator-in-Charge must complete this information on the work order.	LOW Disinfection of the watermain and parts was performed during the repair work as required. With repair documentation lacking complete disinfection work details, the Region was unable to demonstrate compliance with all steps of the disinfection procedure. As a standard practice, Region collects samples following watermain repair work to confirm water quality. Impact to the safety of drinking water and public health resulting from this administrative oversight was assessed to be low.	Water and Wastewater Business Support staff will be monitoring completion of the work order fields during monthly reviews, and similarly review Contractor Reports received for completeness.

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South Peel Distribution System	Region of Peel	Watermain Disinfection Procedure Preface Watermain that form part of a Drinking Water System can only be isolated and placed into service by Certified Operators. Activities performed on isolated watermain are not required to be performed by Certified Operators. Section 12(1), of the Safe Drinking Water Act (SDWA) No person shall operate a municipal drinking water system unless the person holds a valid operator's certificate issued in accordance with the regulations	Review of records during the 2021 Ministry Inspection revealed that on March 3, 2021, a watermain break on Burnhamthorpe Road in Mississauga was repaired by a contractor on a live watermain without a Certified Operator present.	Management reviewed the incident with the Operations staff involved and reminded staff about requirements of the Ministry Watermain Disinfection Procedure.	LOW In response to COVID-19 , and through temporary relief from regulatory requirements granted by the Ministry, watermain repair practices were modified. Changes to the Ministry Watermain Disinfection Procedure that came to effect in early 2021 provided operational flexibility initially included in the Region's regulatory relief. These periodic changes lead to some misunderstanding and inconsistency of how watermain repair work was performed. As a standard practice, Region collects samples following watermain repair work to confirm water quality. The deviation from prescribed practice at the time of this repair was assessed to pose low risk to public health and water safety.	The Region has developed a Watermain Break Repair training module that was delivered to Operations staff during the November and December tailgates. It is planned to repeat this training annually.
	Region of Peel	Ontario Regulation 170/03 Schedule 6-7 Chlorine residual testing must be conducted using an electronic direct readout colorimetric or amperometric chlorine analyzer. Schedule 6-10 For every sample, the date, name of the person who conducted the test, and the results of the test must be recorded and maintained.	Review of handheld chlorine analyzer verification records during the 2021 Ministry Inspection revealed instances of missing information or inaccurate records related to the date, name of the person who conducted the test, or calibration standard lot expiry date.	The Region has reviewed the current process with operations staff to ensure awareness of record-keeping requirements and implemented monitoring efforts to identify and address deficiencies.	LOW Calibration of chlorine analyzers was performed as required; however, incomplete records of calibration made it difficult to demonstrate that work was completed as prescribed. This oversight caused low impact to safety of drinking water and low risk to public health.	A digital calibration/verification form has been created, with mandatory fields, to ensure all necessary steps are performed and information recorded. Operations staff have been trained on the use of the new digital form. The digital form includes an automated email reminder to the Operator, with follow-up notification to the Foreperson if verification is not performed as scheduled.
	OCWA	Ontario Regulation 128/04 Section 27 (4) A person who makes an entry in a log or other record-keeping mechanism shall do so in a manner that permits the person to be unambiguously identified as the maker of the entry.	Review of the transmission system logbooks during the 2021 Ministry Inspection showed that the night shift (19:00 to 07:00) logbook entries that begin on February 5 and 8, 2021 were not initialed by the Operator-in-Charge, and the names were not filled in for the shift Operator(s)-in-Charge and/or Overall Responsible Operator.	OCWA has communicated the errors with the individual(s) and planned staff meeting to reinforce the requirements regarding entries in logbooks and other record-keeping mechanisms.	LOW Each work shift has a designated Operator-in-Charge and an Overall Responsible Operator on shift schedule. Incomplete logbook entries that did not include these operators' names did not impact the quality of treated water or public health.	OCWA reviewed transmission staff training records to identify any staff who had not completed OCWA's logbook training within the last year and ensure that these individuals complete it as soon as reasonably possible. OCWA is in the process of implementing electronic logbook software that has mandatory fields, which is expected to prevent similar logbook entry issues once in place.
	OCWA	Ontario Regulation 170/03 Schedule 6-5(1)3 A certified operator must examine continuous monitoring test results within 72 hours after the tests are conducted. Municipal Drinking Water Licence, Schedule D, Condition 1.1 The daily minimum, maximum and average free chlorine residuals must be reviewed at a minimum every 72 hours, supplemented by a review of continuous trends when the daily minimum, maximum and average results warrant further investigation.	Review of records during the 2021 Ministry Inspection revealed that operator name was missing from the <i>24 Hour Trend Review</i> form for July 25 and August 10, 2020, and April 22, 2021. On April 1, 2021, the night shift section of the <i>24 Hour Trend Review</i> form was not completed.	OCWA investigated the occurrences. For each instance, although the form was not completed, the data trend was printed and initialed, demonstrating completion of the trend review for this time period as required. OCWA reviewed the findings with the individual(s) to ensure they are aware of their responsibilities regarding completion of the <i>24 Hour Trend Review</i> form.	LOW Although confirmation of data trend review was available, the name of operator conducting the review missing on the 24 Hour Trend Review Forms, used specifically for documenting the review, did not meet the prescribed requirement. This administrative oversight posed no risk to the safety of treated water.	The inspector's findings and recommendations were reviewed by OCWA and Peel. OCWA has directed Operations staff to record in the logbook that trend review has been completed for their shift. OCWA compliance staff will review the <i>24 Hour Trend Review</i> forms monthly to identify deficiencies and have them rectified by the individual who made the entry.