

Drinking Water System	Responsibility	Legislative Requirement	Statement of Non-Compliance	Immediate Action Taken	Control Measures
Palgrave - Caledon East  Caledon Village - Alton	Region of Peel	<b>Ontario Regulation 170/03 Schedule 6-5(1)3</b> A certified operator must examine continuous monitoring test results within 72-hours after the tests are conducted.  <b>Municipal Drinking Water Licence, Schedule D, Condition 1.1, Conditions for Relief from Regulatory Requirements</b> The daily minimum, maximum and average free chlorine residuals and UV disinfection parameters 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.	Test results from October 24, 2019 were not reviewed within the 72-hours time period. The review was completed and signed off by a certified operator on October 28, 2019, by 8:24 am, approximately 8.5 hours overdue, caused by staffing demands.	On November 6, 2019, when this oversight was identified, the Region notified the Ministry of the Environment, Conservation and Parks (Ministry).  A review of the minimum, maximum and average free chlorine residual and UV disinfection parameters concluded that critical water quality parameters did not deviate from established standards and the data did not require further investigation of continuous trends.	On December 5, 2019, the Region implemented a two-tier auto e-mail notification system that is sent prior to the 72-hour report review deadline. If the reports have not been signed off by 15 hours before the deadline, an e-mail notification is sent to all certified operators who complete the 72-hour report review. If the reports still have not been signed off by 12 hours before the deadline, a second e-mail is sent and escalated to management for action.  To date, the system has been working as intended with no new occurrences of 72-hour reports not reviewed in time.
Palgrave - Caledon East  Caledon Village - Alton  Inglewood  Cheltenham	Region of Peel	<b>Municipal Drinking Water Licence, Schedule C, Section 4.0</b> Any measuring instrumentation that forms part of the monitoring system for calculating disinfection shall be checked, and where necessary calibrated, at least once every 12 months during which the drinking water system is in operation, or more frequently in accordance with the manufacturer's instructions.	During the 2020 Ministry inspections, it was discovered that the incorrect expiry date for four (4) different pH buffer standard solutions was recorded on some of the calibration records for pH probes used to determine the optimal effectiveness of disinfection. The incorrect expiry date had also been written on the bottles for two (2) of the pH buffer solutions. This resulted in transcription errors on the calibration records occurring sporadically throughout 2019 and 2020 and affected each Drinking Water System since the operators rotate through water systems every few months.  An additional finding indicated that one portable pH probe was calibrated by two (2) different operators on January 30, 2020. One of the operators had mistakenly copied the probe's serial number from another operator's calibration record sheet and subsequently mistook it for his own probe's number. The error was carried forward for the months of February and March 2020.	As soon as the issues were discovered, staff reviewed and assessed the pH calibration activity from buffer solution procurement to validating the completeness and accuracy of the calibration record sheets.	The Region held a training session for operations staff on October 21, 2020 to reinforce the importance of ensuring calibration records are completed accurately and lot numbers and expiry dates of buffer standard solutions verified.  Starting December 1, 2020, staff implemented an improved system for managing the pH calibration activity. This includes tracking pH buffer solutions' lot numbers and expiry dates, locations where the solutions are distributed for use, and staff assignment of pH probes by serial number. Calibration record checks are now conducted monthly to verify that records are complete, accurate and in compliance with requirements.
Caledon Village - Alton	Region of Peel	<b>Municipal Drinking Water Licence, Schedule C, Section 4.0</b> Any measuring instrumentation that forms part of the monitoring system for calculating disinfection shall be checked, and where necessary calibrated, at least once every 12 months during which the drinking water system is in operation, or more frequently in accordance with the manufacturer's instructions.	On September 1, 2020, the Region found out that at Caledon Village Wells 3/3B, the handheld chlorine analyzer calibration record for April 3, 2020 was documented using an expired standards kit (expired March 2020).	On September 4, 2020, the Region reported this finding to the Ministry. The Region reviewed the handheld chlorine analyzer calibration records at each of the facilities and confirmed that all the other April 2020 calibrations were completed correctly using a new sheet and a non-expired standards kit.	The Region held a training session for operations staff on October 21, 2020 to reinforce the importance of ensuring logbooks and other records are completed accurately with all required information. A reminder was issued to all operators to double check the expiry date of the standards before conducting calibration activities.
Caledon Village - Alton	Region of Peel	<b>Ontario Regulation 128/04, Section 27 (4) &amp; Section 27 (5)</b> Section 27 (4) of O. Reg. 128/04, requires that 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.  Section 27 (5) requires an operator-in-charge to record information in the logs or other record-keeping mechanisms in respect of each operating shift. This documentation must include specifics related to the operating conditions and observations as well as any process deviations and equipment and neccessary repairs, and the operator name, date/time of log entry.	On September 1, 2020, the Region found out that an operator failed to record their name on documented entry in the Mono Mills Rechlorination log book. The same operator also failed to record the date in three (3) other log book entries at Alton Mills Booster station and Mono Mills Standpipe.	On September 4, 2020, the Region reported all findings to the Ministry. The Region conducted an internal investigation to determine the dates that the operator was at the stations. In consultation with the Provincial Officer, a copy of the operator work order has been affixed to the respective log book pages.	The Region enhanced the process for review of station logbooks and other record keeping mechanisms to a bimonthly review by the Foreperson/Overall Responsible Operator. Findings of recorded deficiencies will be tracked and shared with management for action.  The Region held a training session for operations staff on October 21, 2020 to reinforce the importance of ensuring logbooks and other records are completed accurately with all required information. The Region is also looking at implementing electronic log books in the future for real time verification of log entries.
Caledon Village - Alton	Region of Peel	<b>Municipal Drinking Water Licence # 009-101, Schedule B, Section 10.1</b> Water systems must not discharge a contaminant into the natural environment that causes, or is likely to cause, an adverse effect.	On January 13, 2020, water overflow was detected at the Mono Mills Standpipe. The volume of potable drinking water that overflowed into the storm ditch was estimated to be around 106 m <sup>3</sup> , and occurred between approximately 05:00 and 10:20 hours. The cause was determined to be a local power outage in the village of Mono Mills, which resulted in a loss of communication between the Mono Mills Re-chlorination station and the Mono Mills Standpipe. The Mono Mills Rechlorination Station controls the filling of the Standpipe. Concurrently, due to an incorrect set-point in place for the duty Pressure Reducing Valve controls, the Standpipe continued to fill and overflow as the Hi Hi pressure (close) setpoint was never reached.	An operator was dispatched on the morning of January 13, 2020 to investigate the loss of communication alarm at the standpipe and at that time discovered that potable drinking water was flowing from the overflow discharge pipe into the storm ditch. The operator manually closed the PRV valve which stopped the flow into the Standpipe. Power and communications were restored at 10:25am.  Free chlorine residual in water in the Standpipe measured in the range of 1.14 to 1.22 mg/L during the overflow event, which was expected to represent chlorine concentration in the released water. None of the released water entered a natural watercourse.	All critical control points and alarm set-points related to the Mono Mills Re-chlorination Station and Standpipe were re-evaluated and the correct duty valve pressure set-points were implemented within 24 hours of the event occurring.

Drinking Water System	Responsibility	Legislative Requirement	Statement of Non-Compliance	Immediate Action Taken	Control Measures
Inglewood	Region of Peel	<b>Permit to Take Water (PTTW) # 0838-AZRFZ5, Condition 3.3</b> Combined daily water taking from all wells shall not exceed 1,296 m <sup>3</sup> .	<p>On February 5, 2020, the combined daily water taking from the three Ingelwood wells totalled 1,354.43 m<sup>3</sup>, which is 58.43 m<sup>3</sup> (4.47%) over the limit. Commissioning activities on the new greensand filter (Filter #3) at Inglewood Wells 3 and 4 took place as part of an ongoing capital project. A 24-hour performance test was conducted that day to evaluate and confirm the new equipment was operating within its specified range. Well 4 supplied all of the water to Filter #3 (1024.89 m<sup>3</sup>) and Well 2 supplied the distribution system based on system demands (329.54 m<sup>3</sup>). The combined total water taking from Well 4 and Well 2 peaked over the daily combined limit.</p> <p>A similar exceedance had ocured on December 20, 2019 and was reported appropriately last year. Neither of these exceedances was caught at the time of the event nor identified during the regular 72-hour trend review, but both have now been addressed by the corrective action measures listed here.</p>	<p>On July 20, 2020, after a review of February 2020 data, it was discovered that the daily water taking limit for February 5, 2020 had exceeded. The event was reported to the Ministry the following business day on July 21, 2020.</p>	<p>On May 12, 2020, the Region implemented a virtual totalizer flow meter with a HiHi alarm setpoint at 80% of the combined daily volume limit (1,036 m<sup>3</sup>) to alert staff to take action to prevent an exceedance of the water taking limit. The combined daily volume has been added to all 72-hour and Monthly Compliance Reports, with exceedances flagged red to allow timely identification by staff.</p> <p>Newly drafted Standard Operating Procedures, that are specific to water storage facility isolation and disinfection, will include the PTTW limits so that they are reviewed and considered in advance of maintenance activities being performed to avoid water taking exceedances in the future.</p>
Caledon East	Region of Peel	<b>Drinking Water Works Permit # 009-205 Schedule B, Section 4.6.1</b> Pre-approved minor alterations to the drinking water system must be recorded on the Ministry's <i>Form 2 – Record of Minor Modifications or Replacements to the Drinking Water System (Form 2)</i> , prior to the modified or replaced components being placed into service.	<p>On August 26, 2020, during a routine review of logbook entries, it was discovered that a <i>Form 2</i> record was not completed for the replacement of a chlorine storage tank at the Caledon East Well 3 facility that occurred on July 16, 2020, prior to placing the new and slightly larger tank in operation.</p> <p>The chlorine tank was replaced in a rush to meet higher-than-normal water demands, presumably due to COVID-19 in combination with seasonal needs (hot summer), and for improved efficiency, to reduce the frequency of tank filling by staff during the pandemic. The frequency of topping up the tank to meet demand created undue strain on staff resources, especially during the prolonged state of emergency.</p>	<p>The non-compliance was reported to the Ministry on August 28, 2020.</p> <p>A <i>Form 2</i> was immediately prepared and authorized, and a <i>Director Notification</i> form submitted to the Ministry to document completion of this work.</p>	<p>On September 2, 2020, the drinking water system alterations process and its associated compliance requirements was reviewed with operations staff to ensure that any future alterations are completed and documented as required by Schedule B of Drinking Water Works Permit.</p>
Arthur P. Kennedy Water Treatment Plant	Ontario Clean Water Agency (OCWA)	<b>Municipal Drinking Water Licence # 009-101, Schedule B, Section 10.1</b> Water systems must not discharge a contaminant into the natural environment that causes, or is likely to cause, an adverse effect.	<p>On several occasions throughout 2020, during start-up sequences on the standby diesel generators, a short burst of black smoke was released from the smokestacks. The diesel generator starts are necessary to test their functionality and compatibility with ongoing capital upgrades to the standby power system, which includes installation of a new standby power facility with 3 new natural gas generators.</p>	<p>OCWA has created a procedure for reporting the testing of generators which includes notification to the ministry. All Events were reported to the Ministry in 2020. The Ministry has also been made aware of an ongoing capital project which requires the starting and stopping of the diesel generators for commissioning. The project team did their best to keep emissions to a minimum during the necessary generator testing.</p>	<p>The Region posted communication messages through the Region of Peel Public Twitter account to let the local residents know about the commissioning activities. Communication was also provided to the local Municipal Councillor for awareness. Peel and OCWA strive to minimize the impact on the environment and public during these commissioning activities.</p>
		<b>Ontario Regulation 170/03 Schedule 6, Section 6-5 (1)</b> Continuous monitoring and recording must be carried out every 15 minutes for filter effluent turbidity readings.	<p>On March 20, 2020, at 2:40 pm, Conventional Filter #4 effluent turbidimeter was found in User Hold mode.</p> <p>The turbidimeter had been calibrated on March 11, 2020 at 8:44 am and was left in User Hold mode locally at the instrument following the calibration. The turbidimeter would have not been measuring and recording from March 11 to March 20, a total filter run time of 60 hours and 38 minutes.</p>	<p>As soon as it was identified, Conventional Filter #4 was taken out of service. A grab sample of Filter #4 effluent was manually tested for turbidity, with a result meeting water quality standards. The event was promptly reported to Peel Public Health and the Ministry.</p> <p>Microbiological samples were collected from the on-site treated water reservoirs and yielded satisfactory results. The treated water at the on-site reservoirs is tested 3 times a week and the transmission system water storage facilities are sampled weekly for bacteriological analysis, with no adverse results in that period. Further review of the Conventional Filters #1-8 combined turbidity for the time period indicated the average turbidity was 0.03 NTU and the maximum turbidity was 0.08 NTU, both well below maximum legislated limits.</p>	<p>Communication was provided to maintenance personnel to ensure that local User Hold mode is not to be used during calibrations, instead SCADA Maintenance mode is to be used, which is visible to Control Panel Operator with alarms enabled. Operations personnel are also to ensure turbidity analyzers are checked for any alerts during their daily rounds.</p>
Lorne Park Water Treatment Plant	OCWA	<b>Ontario Regulation 170/03 Schedule 6, Section 6-5 (1)</b> Continuous monitoring and recording must be carried out every 15 minutes for filter effluent turbidity readings.	<p>On April 22, 2020 at 9:40 pm, a review of trends by operations staff identified an issue with the effluent turbidity meter on Membrane Gravity Filter #9 (MGF). Further investigation and trend review revealed that the turbidity meter had no flow going through it for approximately 2 hours due to a failed solenoid valve.</p>	<p>Operations staff restored filter effluent sample flow and tested turbidity with a reading of 0.03 NTU, meeting water qulaity standards. MGF #9 was taken out of service until repairs could be completed.</p> <p>A microbiological sample was collected from the on-site treated water reservoir following the event, yielding satisfactory results.</p>	<p>The MGF is a pilot project being conducted in partnership with the Ministry, consultant, membrane manufacturer, OCWA and Region of Peel. Following the incident, investigation of the failed solenoid valve was conducted by the membane manufacturer who was overseeing the project. Failed parts were replaced and filter was returned to service.</p>

Drinking Water System	Responsibility	Legislative Requirement	Statement of Non-Compliance	Immediate Action Taken	Control Measures
		<p><b>Ontario Regulation 170/03 Schedule 6-5(1)3</b> A certified operator must examine continuous monitoring test results within 72-hours after the tests are conducted.</p> <p><b>Municipal Drinking Water Licence, Schedule D, Condition 1.1, Conditions for Relief from Regulatory Requirements</b> The daily minimum, maximum and average free chlorine residuals and UV disinfection parameters 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.</p>	<p>During the 2020 Ministry inspection, it was identified that on February 18, 2020, the night shift operator did not complete the <i>24 Hour Trend Review</i> form for the continuous monitoring test results from 12:00 to 23:59 (a 12 hour period) of the previous day, with no entry in the log book indicating that the trend review had been completed.</p> <p>There were two (2) other occasions where the <i>24 Hour Trend Review</i> form was not completed; however, the operator noted in the log book that the trend review had been completed.</p>	<p>Upon Ministry inspection finding, OCWA investigated the occurrences with staff members and ensured they are aware of their obligations and responsibilities regarding the completion of the <i>24 Hour Trend Review</i> form.</p>	<p>Inspection finding was reviewed with staff at the January 2021 monthly staff meeting. Communication was also provided to all operations staff on their responsibility to complete the form.</p>

Drinking Water System	Responsibility	Legislative Requirement	Statement of Non-Compliance	Immediate Action Taken	Control Measures
South Peel Distribution System	OCWA	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 July 16, 2020 at 2:45 pm, maintenance staff discovered potable water was flowing into the overflow pipe, and through the reservoir drain chamber into a local storm sewer at the Silverthorn Reservoir.  A review of trends indicated there were two days of overflow conditions: July 11, 2020 from 9:48 am to 5:24 pm, approximately 15.8 ML July 16, 2020 from 1:28 to 2:52 pm, approximately 0.7 ML.	Upon discovery of the release, OCWA operations turned off the pumps that fill the Silverthorn Reservoir, stopping the overflow. The water release was appropriately reported to the Ministry as well as Environment and Climate Change Canada. An instrumentation technician was dispatched to readjust the span of the level transmitter.  Investigation revealed that the level transmitter had failed on June 19, 2020 and was replaced the same day. During the calibration of the new instrument, the incorrect span adjustments had been set.  Operations staff gathered in-field elevations for precision and a third party contractor calibrated the level instrument and scaled it appropriately on July 16, 2020.	OCWA reviewed the event with instrumentation staff and communication was provided to prevent a reoccurrence in the future.
	Region of Peel		On July 29, 2020, a hydraulic pump hose broke inside a chamber on Main St S in Brampton while operators were pumping it out.	On each occasion, operations staff immediately contacted the Region of Peel Environmental Control Spill Inspector and used absorbent pads to capture the hydraulic fluid. The watermains were intact and no contaminant was suspected to have entered the potable water supply. Due diligence sampling was conducted on the watermain contents upstream and downstream of the chambers. All samples yielded satisfactory results. Once each chamber was pumped out, it was inspected and no indication of possible contaminant ingress to the potable water was observed.	
			On September 24, 2020, operations staff noticed a pinhole leak in the hydraulic line of the pump used to drain 4 chambers near central Brampton.		
			On several occasions throughout 2020, 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.	
	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 as a minimum.	During the 2020 Ministry inspections, a review of the Region's watermain break records revealed several instances where the operator had not completed the "Watermain Break/Appurtence Failure Information" or "Repair Details" section of the work order to fulfill the documentation requirements.	The Region has recently moved to a digital work order system to eliminate the need for paper work orders. Operations and compliance staff met to discuss opportunities to improve record quality.	A quality assurance/quality control process is being created to ensure that the watermain break digital work orders are reviewed regularly and that the watermain failure information and repair details are captured correctly and completely.
	Region of Peel	Ontario Regulation 170/03 Schedule 6-7 Chlorine residual testing must be conducted using an electronic direct readout colourimetric 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 maintatined.	During the 2020 Ministry inspection, a review of the Region's handheld chlorine analyzer verification records showed that there were instances of missising 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.	A digital calibration/verification form is being created. Once the digital form is available, the new process will be tested. Once the form and process are verified, Operations staff will be trained on use of the new digital form.
	OCWA		During the 2020 Ministry inspection, a review of OCWA's handheld chlorine analyzer verification records showed that verifications were not being completed on a consistent basis.	OCWA has advised staff of the requirements of handheld analyzer verifications to ensure they are completed consistently.	OCWA is in the process of developing a new procedure applicable to the Lorne Park and Arthur P. Kennedy Water Treatment Plants and the Transmission System. Once complete, operations staff will be trained on the new process to ensure that all staff are aware of their responsibilities.