

**CONTINGENCY PLAN**  
**Township of Tay - QMS Operational Plan**

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**Township of Tay Water Treatment & Distribution Systems**

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**Element 8.1.2**

**Problem: Adverse Water Quality Procedures as per O. Reg. 170/03**

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**Definition of "Resample and Test" as per O. Reg. 170/03**

(A) with respect to corrective action that arises from the test of a water sample for a Microbiological Parameter (3 Resample Locations)

(i) take a set of water samples, at approximately the same time, with,

(a) at least one sample from the same location as the sample that gave rise to the corrective action,

(b) at least one sample from a location that is a significant distance upstream from the location described in sub clause (A), if that is reasonably possible, and

(c) at least one sample from a location that is a significant distance downstream from the location described in sub clause (A), if that is reasonably possible, and

(ii) conduct, on the samples taken under sub clause (i), the same test that gave rise to the corrective action, or

(B) with respect to corrective action that arises from the test of a water sample for a parameter that is not a microbiological parameter,

(i) take a water sample from the same location as the sample that gave rise to the corrective action, and

(ii) conduct, on the sample taken under sub clause (i), the same test that gave rise to the corrective action.

**The following are prescribed as adverse results and includes the required corrective actions as per O. Reg. 170/03:**

**1.** *A result that exceeds any of the standards prescribed by Schedules 1, 2 or 3 to the Ontario Drinking Water Quality Standards (ODWQS). A printed copy of the regulation is available at the plants.*

Corrective Actions:

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- a) Notify the Health Unit by speaking with a person at the office of the Medical Officer of Health or, if the office is closed, by speaking with a person at the on-call system of the Health Unit.
  - b) Notify SAC, by speaking with a person at the Ministry's Spills Action Centre.
  - c) Immediately resample and test.
    - \* Chemical or other adverse tests - 1 resample at adverse location.
    - \* Microbiological adverse tests - 3 resamples at different locations.
  - d) If a concentration that exceeds the standard prescribed for the parameter by Schedules 1, 2 or 3 to the ODWQS is detected, take such other steps as are directed by the Health Unit.

**2.** *A result indicating the presence of bacteria in a sample of drinking water.*

*E. coli – Microbiological sample (3 resample locations required)*

*Corrective Actions - resample immediately; if sample detects *E. coli* then resample 24 and 48 hours apart.*

- a) Immediately notify the Health Unit, by speaking with a person at the office of the medical officer of health or, if the office is closed, by speaking with a person at the on-call system of the health unit.
- b) Notify S.A.C., by speaking with a person at the Ministry's Spills Action Centre.
- c) Immediately resample and test.

Note: This is required for Small Municipal Residential Water Systems, not required for Large Municipal Residential Water Systems unless specified by Health Unit.

- d) Immediately take all reasonable steps to notify all users of the water system to use an alternate source of drinking water or, if no alternate source is currently available, to bring water to a rapid rolling boil for at least one minute before use.
- e) Immediately increase the chlorine dose and flush the watermains to ensure that a free chlorine residual of at least 0.2 milligrams per

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litre is achieved at all points in the affected parts of the distribution system.

- f) Maintain the free chlorine residual or combined chlorine residual concentration referred to in "2c" in the affected parts of the distribution system, and continue to resample and test until Escherichia coli (E. coli) or fecal coliforms are not detected in any of the samples from two consecutive sets of samples taken 24 to 48 hours apart or as otherwise directed by the Health Unit.
- g) Take such other steps as are directed by the Health Unit.

*Total Coliform – Microbiological sample (3 resample locations required)*

*Corrective Actions - resample immediately; if sample detects total coliforms then resample 24 and 48 hours apart.*

- a) Immediately notify the Health Unit, by speaking with a person at the office of the Medical Officer of Health or, if the office is closed, by speaking with a person at the on-call system of the Health Unit.
- b) Notify SAC, by speaking with a person at the Ministry's Spills Action Centre.
- c) Immediately resample and test.
- d) If total coliforms are detected, immediately increase the chlorine dose and flush the watermains to ensure that a free chlorine residual of at least 0.2 milligrams per litre is achieved at all points in the affected parts of the distribution system.
- e) Maintain the free or combined chlorine residual concentration in the affected parts of the distribution system and continue to resample and test until total coliforms are not detected in any of the samples from two consecutive sets of samples taken 24 to 48 hours apart or as otherwise directed by the Health Unit.
- f) Take such other steps as are directed by the Health Unit.

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- 3.** *A result indicating that the concentration of free chlorine residual is less than 0.05 milligrams per litre in a distribution sample.*

Corrective Actions:

- a) Immediately notify the Health Unit by speaking with a person at the office of the Medical Officer of Health or, if the office is closed, by speaking with a person at the on-call system of the Health Unit.
- b) Notify SAC, by speaking with a person at the Ministry's Spills Action Centre.
- c) Immediately increase the chlorine dose and flush the watermains to ensure that a free chlorine residual of at least 0.2 milligrams per litre is achieved at all points in the affected parts of the distribution system, if the drinking water system provides chlorination.
- d) Take such other steps as are directed by the Health Unit.

- 4.** *A result indicating that turbidity exceeds 1.0 NTU (Nephelometric Turbidity Units).*

Corrective Actions:

- a) Immediately notify the Health Unit by speaking with a person at the office of the Medical Officer of Health or, if the office is closed, by speaking with a person at the on-call system of the Health Unit.
- b) Notify SAC, by speaking with a person at the Ministry's Spills Action Centre.
- c) Immediately check all the drinking water system's filters and turbidity monitoring equipment.
- d) Review upstream operational processes and correct any faulty processes that are identified.
- e) If after correcting any problems or faulty processes the turbidity remains greater than 1.0 NTU immediately take all reasonable steps to notify all users of water from the system to use an alternate source of drinking water or, if no alternate source is available, to bring water to a rapid rolling boil for at least one minute before use.

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Note: This is not required for Large Municipal Residential Systems though a Boil Water Advisory may be issued by the Health Unit.

- f) Take such other steps as are directed by the Health Unit.

- 5.** *A result indicating that the concentration of sodium exceeds 20 milligrams per litre in a sample of drinking water.*

Corrective Actions:

- a) Immediately notify the Health Unit by speaking with a person at the office of the Medical Officer of Health or, if the office is closed, by speaking with a person at the on-call system of the health unit.
- b) Notify SAC, by speaking with a person at the Ministry's Spills Action Centre.
- c) Immediately resample and test. Resampling is only required if notification is required (i.e. every 57 months).
- d) If a concentration of sodium that exceeds 20 milligrams per litre is detected, take such steps as are directed by the Health Unit.

- 6.** *A result indicating that the concentration of fluoride exceeds 1.5 milligrams per litre in a sample of drinking water.*

Corrective Actions:

- a) Immediately notify the Health Unit by speaking with a person at the office of the Medical Officer of Health or, if the office is closed, by speaking with a person at the on-call system of the Health Unit.
- b) Notify SAC, by speaking with a person at the Ministry's Spills Action Centre.
- c) Immediately resample and test.

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- d) If a sample concentration exceeds the standard prescribed for the parameter by Schedule 2 or 3 in the ODWQS take such other steps as are directed by the Health Unit.

- 7.** *A drinking water system that provides or is required to provide disinfection is directing water that has not been properly disinfected to users of water from the system.*

Corrective Actions:

- a) Immediately notify the Health Unit by speaking with a person at the office of the Medical Officer of Health or, if the office is closed, by speaking with a person at the on-call system of the Health Unit.
- b) Notify SAC, by speaking with a person at the Ministry's Spills Action Centre.
- c) Restore the proper disinfection.
- d) Take such other steps as are directed by the Health Unit.

- 8.** *Loss of pressure in the distribution system due to a power outage.*

Corrective Actions:

- a) Immediately notify the Health Unit, by speaking with a person at the office of the Medical Officer of Health or, if the office is closed, by speaking with a person at the on-call system of the Health Unit and follow their directions.
- b) Notify the Ministry and SAC, by speaking with a person.
- c) Notify residents of the "Boil Water Advisory" if directed.
- d) Immediately resample and test.
- e) Take 2 consecutive microbiological samples 24 and 48 hours apart.
- f) Increase chlorine dose and flush system to ensure 0.20 mg/L free chlorine residual is achieved and maintained in the distribution system in affected locations.

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- 9.** *A result indicating that the average concentration of trihalomethanes exceeds 0.100 milligrams per litre in a Running Annual Average (RAA) of quarterly results.*

Corrective Actions:

- a) Report any adverse test results in writing to the Health Unit and the Ministry within 7 calendar days of the quarter being calculated.
- b) The written notice is submitted using section "2c" of the Adverse Reporting Form.