

November 13, 2018

CONSULTATION DRAFT
WATER ACT
WATER SUPPLY SYSTEM AND
WASTEWATER TREATMENT SYSTEM
REGULATIONS

Pursuant to section 76 of the *Water Act* R.S.P.E.I. 1988, Cap. W-1.1, Council made the following regulations:

PART 1 - INTERPRETATION

1. (1) In these regulations

- | | Definitions |
|--|---|
| (a) "Act" means the <i>Water Act</i> R.S.P.E.I. 1988, Cap. W-1.1; | Act |
| (b) "acutely lethal" in relation to effluent means that the effluent at 100% concentration kills more than 50% of the rainbow trout subjected to it during a 96-hour period; | acutely lethal |
| (c) "alternative wastewater treatment facility" means a wastewater treatment facility that does not discharge wastewater directly into a watercourse, and discharges effluent at a rate that exceeds 22.7 m ³ /day; | alternative
wastewater
treatment facility |
| (d) "carbonaceous biochemical oxygen demand (CBOD)" means carbonaceous matter that consumes, by biochemical oxidation, oxygen dissolved in water; | carbonaceous
biochemical oxygen
demand (CBOD) |
| (e) "Chief Public Health Officer" means the Chief Public Health Officer appointed under the <i>Public Health Act</i> R.S.P.E.I. 1988, Cap. P-30.1; | Chief Public Health
Officer |
| (f) "contact hour" means a fifty-minute classroom instruction session, or its equivalent as determined by the Minister; | contact hour |
| (g) "continuing education unit" means 10 hours of participation in a continuing education program recognized by the Minister; | continuing
education unit |
| (h) "continuous flow wastewater treatment facility" means a wastewater treatment facility other than an intermittent treatment wastewater facility; | continuous flow
wastewater
treatment facility |

detailed chemical analysis	(i) “detailed chemical analysis”, in relation to a water quality sample, means an analysis conducted in accordance with section 2 of Schedule C;
direct responsible charge experience or DRC experience	(j) “direct responsible charge experience” or “DRC experience” means experience as an operator having direct responsibility for, and charge of, a process that controls the effectiveness or efficiency of a facility;
effluent	(k) “effluent” means wastewater that is discharged from a wastewater treatment facility;
Effluent Regulatory System (ERRIS)	(l) “Effluent Regulatory System (ERRIS)” means the information system maintained by the Government of Canada for the purpose of receiving reports required under the <i>Fisheries Act</i> (Canada), Wastewater System Effluent Regulations;
engineer	(m) “engineer” means a person who is licensed to practise professional engineering in the province;
facility	(n) “facility” means a water treatment facility, water distribution facility, wastewater treatment facility or wastewater collection facility;
facility classification certificate	(o) “facility classification certificate” means a valid facility classification certificate issued pursuant to section 2 or 3 or the preceding regulations;
general chemical analysis	(p) “general chemical analysis”, in relation to a water quality sample, means an analysis conducted in accordance with section 1 of Schedule C;
Guidelines for Canadian Drinking Water Quality	(q) “Guidelines for Canadian Drinking Water Quality” means the recommendations for drinking water quality published by Health Canada in February 2017, as amended from time to time;
hydraulic retention time	(r) “hydraulic retention time”, in relation to a wastewater treatment facility, means the average period during which wastewater is retained for treatment within the wastewater treatment facility;
intermittent wastewater treatment facility	(s) “intermittent wastewater treatment facility” means a wastewater treatment facility with a hydraulic retention time of at least 90 days that deposits effluent through its final discharge point during at most four periods per calendar year, each of which is separated from every other period by at least seven clear days during which no deposit occurs;
licence	(t) “licence” means a licence to operate a facility issued by the Minister under subsection 5(2);
modification	

- (u) “modification” means the addition or elimination of a structure or equipment to or from a facility, which does not change the purpose or function of the facility;
- (v) “operator” means a person who directs, adjusts, inspects, tests or evaluates an operation or a process that controls the effectiveness or efficiency of a facility; operator
- (w) “operator-in-charge” means a person designated as an operator-in-charge pursuant to subsection 6(1) or (2), section 7 or the preceding regulations, who has direct responsibility for, and charge of, the overall operation, repair and maintenance of a facility; operator-in-charge
- (x) “operator’s certificate” means a valid certificate of qualification issued by the Minister under section 8 or the preceding regulations; operator’s certificate
- (y) “owner” means a person who owns, operates or maintains a facility or a semi-public drinking water supply; owner
- (z) “preceding regulation” means the *Environmental Protection Act* Drinking Water and Wastewater Facility Operating Regulations (EC710/04); preceding regulation
- (aa) “primary disinfection” means a process that is intended to reduce the occurrence of microbiological organisms in drinking water prior to the water entering a water distribution facility; primary disinfection
- (bb) “Procedure for pH Stabilization EPS 1/RM/50” means the Procedure for pH Stabilization During the Testing of Acute Lethality of Wastewater Effluent to Rainbow Trout (EPS 1/RM/50), March 2008, published by the federal Department of the Environment, as amended from time to time; Procedure for pH Stabilization EPS 1/RM/50
- (cc) “Reference Method EPS 1/RM/13” means the Biological Test Method: Reference Method for Determining Acute Lethality of Effluents to Rainbow Trout (EPS 1/RM/13 Second Edition), December 2000, with May 2007 and February 2016 amendments, published by the federal Department of the Environment, as amended from time to time; Reference Method EPS 1/RM/13
- (dd) “secondary disinfection” means the maintenance of a disinfectant in a water distribution facility for the purpose of controlling microbial growth within the distribution system; secondary disinfection
- (ee) “semi-public drinking water supply” means a water supply that supplies drinking water to fewer than five households; semi-public drinking water supply
- (ff) “Standards Council of Canada” means the corporation established by the *Standards Council of Canada Act* (Canada); Standards Council of Canada

total residual chlorine	(gg) “total residual chlorine” means the sum of free chlorine and combined chlorine, including inorganic chloramines;
total suspended solids (TSS)	(hh) “total suspended solids (TSS)” means any solid matter contained in effluent that is retained on a filter of 2.0 micrometre (µm) or smaller pore size;
wastewater collection facility	(ii) “wastewater collection facility” means a facility that is a component of a wastewater treatment system, used for the collection or transmission of wastewater;
wastewater treatment facility	(jj) “wastewater treatment facility” means a facility that is a component of a wastewater treatment system, used for the treatment and disposal of wastewater;
water distribution facility	(kk) “water distribution facility” means a facility that is a component of a water supply system, used for the production, collection, storage and transmission of drinking water;
water treatment facility	(ll) “water treatment facility” means a facility that is a component of a water supply system, used for the treatment of drinking water, but does not include water treatment equipment used in private residences or a bottled water treatment facility.
Schedules form part of regulations	(2) For greater certainty, Schedules A, B, C and D to these regulations form part of these regulations.

PART 2 - CONSTRUCTION OR MODIFICATION OF FACILITIES

Requirement for permit	2. (1) Subject to subsection (2), a permit issued pursuant to this section is required to construct or modify a facility.
Exception	(2) The Minister may waive the requirement for a permit under subsection (1), but not the requirements under subsection (5), to undertake a water or sewer main line extension or replacement not exceeding 150 metres in length, including up to two new sewer manholes or hydrant or valve installations within the 150 metres of pipe, where <ol style="list-style-type: none"> (a) standard specifications and procedures, acceptable to the Minister, have been developed for the work; and (b) an engineer is overseeing the undertaking.
Application	(3) An engineer may apply for a permit to construct or modify a facility by submitting to the Minister a design package that contains <ol style="list-style-type: none"> (a) the name and contact information of the developer and legal owner of the land where the facility will be constructed; (b) the name of the municipality and utility, if applicable; (c) the name and contact information of the design engineer;

- (d) engineered, stamped design drawings and a design summary completed and signed by an engineer; and
- (e) an itemized estimate of the project cost including construction, contingency and engineering.

(4) On receipt of an application made in accordance with subsection (3), the Minister may issue a permit to construct or modify a facility, where the Minister is satisfied that

Issuance of permit

- (a) the proposed design of the facility is appropriate for the purpose for which it is intended and is capable of meeting the water quality or effluent quality standards required by these regulations; and
- (b) any fees due in accordance with Schedule D have been paid.

(5) Within 30 days of completing the construction or modification of a facility authorized by a permit, or an undertaking referred to in subsection (2), the permit holder or engineer overseeing the undertaking, as the case may be, shall submit, or ensure the submission of, to the Minister

Completion requirements

- (a) record drawings of the work completed, prepared in a manner satisfactory to the Minister; and
- (b) a letter of compliance, signed by an engineer, containing the following information:
 - (i) the name of the general contractor responsible for completing the project,
 - (ii) the date of substantial completion of the work,
 - (iii) a list of any deficiencies or departures from the design for the project for which approval was granted,
 - (iv) the permit number, and
 - (v) any other information required by the Minister.

(6) On receipt of the documents prepared in accordance with subsection (5) in respect of a newly constructed facility, the Minister shall

Classification of new facility and registration of system

- (a) classify the facility in accordance with Schedule A and issue a facility classification certificate to the owner of the facility; and
- (b) where the facility is a component of a water supply system or water treatment system that has not been registered, register and assign a registration number to the system.

(7) On receipt of the documents prepared in accordance with subsection (5) in respect of a facility that has been modified, the Minister shall consider the classification of the facility and, where necessary,

Reclassification of facility

- (a) re-classify the facility in accordance with Schedule A; and
- (b) issue a new facility classification certificate to the owner of the facility.

Validity of
certificate

(8) A facility classification certificate is valid unless or until it is revoked or replaced by the Minister.

Facility not
classified or system
not registered

3. (1) Where a facility has not been classified or a water supply system or wastewater treatment system has not been registered under section 2 or the preceding regulations

(a) the owner of the facility or system, as the case may be, may apply to the Minister, in the form required by the Minister, for the classification of the facility or registration of the system, as the case may be; or

(b) the Minister may require the owner of the facility or system, as the case may be, to provide to the Minister any information requested by the Minister to classify the facility or register the system, as the case may be.

Classification or
registration

(2) On receipt of the application or information requested under subsection (1), the Minister shall classify the facility in accordance with Schedule A and issue a facility classification certificate to the owner of the facility or register and assign a registration number to the system, as the case may be.

Other activities
requiring a permit

4. (1) A permit issued under this section is required to undertake any of the following activities:

(a) the removal, temporary storage or final disposition of sludge from a wastewater treatment facility;

(b) activities that may reasonably be expected to disrupt the operation of a water supply system or wastewater treatment system to the extent that water quality in a water distribution facility or effluent quality from a wastewater treatment facility may not meet the standards required by these regulations.

Application

(2) The owner of a water supply system or wastewater treatment system, as the case may be, may apply to the Minister, in the form required by the Minister, for a permit to undertake an activity described in subsection (1).

Issuance of permit

(3) On receipt of an application made in accordance with subsection (2), the Minister may issue a permit to undertake an activity described in subsection (1), where the Minister is satisfied that

(a) the activity will not cause an adverse effect; and

(b) any fees due in accordance with Schedule D are paid.

Permit not required
for maintenance

(4) For greater certainty, the following activities undertaken by the owner of a water supply system or wastewater treatment system shall be considered maintenance and shall not require a permit:

(a) the repair of broken water mains or sewer lines, fittings or valves;

- (b) the installation of service connections including service taps;
- (c) the maintenance and replacement of equipment.

PART 3 - OPERATION OF FACILITIES

Licence

5. (1) A licence is required to operate a facility.

Licence
requirement

(2) On the issuance of a facility classification certificate or on receipt of an application in the form required by the Minister, the Minister may issue to the owner of a facility a licence to operate the facility, if the Minister is satisfied that

Issuance of licence

- (a) the facility has been classified and a facility classification certificate has been issued in respect of the facility, in accordance with Part 2;
- (b) the water supply system or wastewater treatment system of which the facility is a component has been registered and assigned a registration number, in accordance with Part 2;
- (c) the owner has designated an operator-in-charge who holds an operator's certificate to operate that type of facility, at a classification level that equals or exceeds the classification level of the facility, in accordance with sections 6 and 7; and
- (d) any fees due in accordance with Schedule D have been paid.

(3) A licence shall be valid for a period of five years after the date it is issued or renewed unless sooner suspended or revoked.

Licence valid five
years

(4) On receipt of an application in the form required by the Minister, the Minister may renew a licence if the Minister is satisfied that

Renewal of licence

- (a) the facility is classified appropriately, in accordance with Schedule A;
- (b) the owner has designated an operator-in-charge who holds an operator's certificate to operate that type of facility, at a classification level that equals or exceeds the classification level of the facility, in accordance with sections 6 and 7; and
- (c) any fees due in accordance with Schedule D have been paid.

Designation of Operator-in-Charge

6. (1) The owner of a facility for which a facility classification certificate has been issued, shall designate, as the operator-in-charge of the facility, an operator who holds a valid operator's certificate to operate that type of facility, at a classification level that equals or exceeds the classification level assigned to the facility, and provide the operator's name and contact information to the Minister.

Operator's
certification
requirement

Alternate operator-in-charge

(2) When a designated operator-in-charge is not available for active charge of the facility, the owner or operator shall immediately designate an alternate operator-in-charge and provide that operator's name and contact information to the Minister.

Level of classification required

(3) To act as the operator-in-charge of a facility, a person shall hold
 (a) an operator's certificate to operate that type of facility at a classification level that equals or exceeds the classification level assigned to the facility; or
 (b) a valid temporary permit issued under subsection (4).

Temporary permit

(4) Where a facility is re-classified to a classification level greater than the classification level of the operator-in-charge of the facility, the Minister may issue a temporary permit to the operator-in-charge that authorizes him or her to act as the operator-in-charge of the facility for the period specified in the permit.

Exception, small water distribution facility

7. Notwithstanding section 6, the owner of a water distribution facility, classified in accordance with Schedule A as a very small water distribution facility, may designate as the operator-in-charge of the facility a person who holds

(a) a valid certificate of qualification or permit in the plumbing trade issued under the *Apprenticeship and Trades Qualification Act* R.S.P.E.I. 1988, Cap. A-15.2; and

(b) a valid plumbing contractor's licence issued under the *Environmental Protection Act* A Code for Plumbing Services Regulations (EC666/86),

and that person may act as the operator-in-charge of the facility.

Certification of Operator

Operator's certificate

8. (1) A person may apply to the Minister, in the form required by the Minister, for an operator's certificate of a type and class set out in Schedule B.

Issuance of operator's certificate

(2) On receipt of an application in accordance with subsection (1), the Minister may issue a type and class of operator's certificate to an applicant who

(a) meets the education and experience requirements, whether directly or through permitted substitutions, set out in Schedule B for that type and class of operator's certificate;

(b) pays the examination fee due in accordance with Schedule D and successfully completes an examination approved by the Minister; and

(c) pays any other fees due in accordance with Schedule D.

Certification outside the province

(3) Notwithstanding subsection (2), the Minister may issue an operator's certificate to an applicant who

(a) has been certified in another jurisdiction in a manner the Minister considers equivalent to a type and class of operator certification set out in Schedule B, by a certifying agency recognized by the Minister; and

(b) pays any fees due in accordance with Schedule D.

(4) Subject to subsection (7), an operator's certificate is valid for four years from the date of issuance. Duration

(5) On receipt of an application, in the form required by the Minister, and on payment of any fees due in accordance with Schedule D, the Minister may renew an operator's certificate if the Minister is satisfied, Renewal of operator's certificate

(a) where the application is to renew a small water distribution facility operator's certificate, that the applicant has attended at least one training session, approved by the Minister, since the date the operator's certificate was last issued or renewed;

(b) where the application is to renew a Class I or Class II operator's certificate, that the applicant has successfully completed at least 2.4 continuing education units since the date the operator's certificate was last issued or renewed; or

(c) where the application is to renew a Class III or Class IV operator's certificate, that the applicant has successfully completed at least 4.8 continuing education units since the date the operator's certificate was last issued or renewed.

(6) Where an operator ceases to be employed, at the type and class of facility for which the operator holds an operator's certificate, for a period of three years, the certificate shall be considered invalid. Certificate invalid

(7) Where an operator's certificate is considered invalid under subsection (6), the former certificate holder may apply to the Minister, in the form required by the Minister, to have the operator's certificate reinstated. Application for reinstatement

(8) On receipt of an application in accordance with subsection (7), the Minister may reinstate the operator's certificate, if the applicant Reinstatement

(a) pays the examination fee due in accordance with Schedule D and successfully completes an examination approved by the Minister; and

(b) pays any other fees due in accordance with Schedule D.

PART 4 - ASSESSMENTS AND CORRECTIVE ACTIONS

9. (1) The owner of a municipal water supply system or a municipal wastewater treatment system shall conduct a detailed assessment of all Assessment report every 5 years

components of any facilities under its control, and submit an assessment report on the status of the system to the Minister at least once every five years.

Assessment report

(2) The assessment report submitted in accordance with subsection (1) shall be reviewed and signed by an engineer who has experience in wastewater treatment or water supply, as the case may be.

Assessment report,
municipal water
supply system

(3) For municipal water supply systems, the assessment and content of the assessment report shall include

- (a) a review of the sampling frequency conducted over the past five-year period and comparison with the minimum sampling requirements established under these regulations;
- (b) a review of water quality results of untreated water from production wells and water in the distribution system and a comparison of the finished water quality with the recommendations in the Guidelines for Canadian Drinking Water Quality;
- (c) the age and condition of the water supply and distribution infrastructure owned or operated by the utility;
- (d) an assessment of any changes in the extent of the distribution system or in water demand by customers in comparison with system capacity; and
- (e) any additional information the Minister may require.

Assessment report,
municipal
wastewater
treatment system

(4) For municipal wastewater treatment systems, the assessment and content of the assessment report shall include

- (a) a review of the sampling frequency conducted over the past five-year period in comparison with the minimum sampling requirements established under these regulations;
- (b) a review of the effluent quality results in comparison with the effluent standards prescribed in these regulations;
- (c) an assessment of any changes in the influent wastewater flows or influent wastewater quality in comparison with system hydraulic or treatment capacity; and
- (d) the age and condition of wastewater collection or treatment infrastructure owned or operated by the utility.

Assessment report
for non-municipal
system

(5) The Minister may require an assessment of the status of a water supply system or a wastewater treatment system that is not a municipal system, as part of the approval process for an application for a permit to construct or modify a facility, or for the purpose of confirming or updating the classification of the facility.

Assessment report
to address concerns

(6) The Minister may request an assessment of the performance or safety of a water supply system or a wastewater treatment system, or any facility that constitutes a component of that system, at any time the Minister has reason to believe that

- (a) the system or facility is at risk of failing to meet water quality or effluent quality standards; or
- (b) the conditions or circumstances that relate to the effect of the system on human or animal health or on water resources have changed sufficiently.

(7) Where the Minister has required or requested an assessment of a water supply system or wastewater treatment system for a reason indicated in subsection (5) or (6), the scope of the assessment shall be determined by the Minister and shall be conducted at the expense of the owner of the water supply system or wastewater treatment system.

Scope and conduct of assessment

(8) Unless otherwise authorized by the Minister, an assessment referred to in subsection (5) or (6) shall be conducted or reviewed, and signed, by an engineer.

Who may conduct assessment

(9) Where an assessment of a water supply system or a wastewater treatment system indicates that the system is, or is at risk of, failing to meet water quality or effluent quality standards under these regulations, the Minister shall require the owner of the system to submit a plan for approval, within a specified time limit, to address the issues identified in the assessment, including actions proposed to be taken to address system deficiencies, the rationale for the actions and timelines for completion of the actions indicated in the plan.

Plan may be required

(10) Where a plan referred to in subsection (9) proposes to modify a facility, despite the approval of the plan, a permit to modify the facility issued under Part 2 is still required.

Permit required

(11) Where the Minister approves a plan referred to in subsection (9) that involves a change in the way in which a facility is operated, the Minister shall amend any conditions respecting the operation of the facility on the licence to operate the facility accordingly.

Licence amended

(12) The results of an assessment of a water supply system or wastewater treatment system that indicate that the system is, or is at risk of, failing to meet water quality or effluent quality standards under these regulations may be grounds for the Minister to refuse an application for a permit to construct or modify a facility in the system, or an application for a licence to operate a facility in the system.

Grounds to refuse permit or licence

PART 5—WATER SUPPLY SYSTEMS

Water Treatment

10. (1) For the purpose of this section, “water treatment” includes the use of a water treatment device or devices or processes for the purpose of

Meaning of “water treatment

reducing the number of microbiological pathogens in water or reducing or altering the concentration of chemical constituents in water before the water enters a water distribution facility.

Standards to be met (2) Unless otherwise approved by the Minister, no person shall install a water treatment device, or use a water treatment additive, intended to treat water entering a water distribution facility unless the device or additive is certified to the standards described in Schedule E.

Primary disinfection requirement - very small and small facilities (3) A person who owns or operates a water distribution facility classified in Schedule A as a very small or a small water distribution facility shall employ primary disinfection to achieve a minimum of a 0.5-log reduction of viruses, prior to distribution to the first customer on the distribution system.

Primary disinfection requirements - Class I, II, III or IV facility (4) Subject to subsection (5), a person who owns or operates a Class I, II, III or IV water distribution facility shall employ primary disinfection to achieve a minimum of a 4-log reduction of viruses, prior to distribution to the first customer on the distribution system.

Exception may be permitted (5) Where, because of insufficient contact time between water and a disinfectant, it is not possible to provide a 4-log reduction of viruses for water supplied to any of the customers served by a water distribution facility, the owner or operator of the water distribution facility may, with the written approval of the Minister, provide, own and maintain point of entry devices for the purpose of providing a 4-log reduction of viruses to those customers.

Procedure related to credit (6) The determination of the required level of disinfection for the reduction of viruses referred to in subsections (4) and (5) shall be made according to the procedure described in Schedule E.

Free chlorine residual requirement - Class I, II, III or IV facility (7) No person shall own or operate a Class I, II, III or IV water distribution facility that does not maintain a free chlorine residual between 0.2 and 2 mg/L throughout the facility, as measured at compliance points approved by the Minister.

Removal of chemical constituents requirement - case by case (8) Any requirement for water treatment for the removal of chemical constituents shall be determined by the Minister on a case-by-case basis, and may be included as a condition of the licence to operate the water distribution facility.

Plan to meet requirements may be required (9) Where, at the time of the coming into force of these regulations, a water supply system does not meet the treatment requirements specified in these regulations, the Minister shall direct the owner or operator of the system to develop, and submit for approval, a plan to meet the treatment

requirements, including the specific steps to be taken and the time line for their implementation.

Monitoring Water Quality

- 11.** All water supply systems and semi-public drinking water supplies shall be monitored for water quality. Water supply quality monitoring
- 12.** The assessment of water quality monitoring results under this Part shall be based on the recommendations in the Guidelines for Canadian Drinking Water Quality, or, where no such guidelines exist, on the advice of the Chief Public Health Officer. Assessment of water quality monitoring results
- 13.** Subject to subsection 16(1), the owner of a semi-public drinking water supply shall ensure that water quality samples are Sampling requirements - semi-public supply
- (a) collected and analysed for the presence of coliform bacteria and E. coli at least once per quarter each year; and
 - (b) collected from each source of supply and subjected to a general chemical analysis at least once every three years.
- 14.** (1) Subject to subsection 16(2), the owner of a water distribution facility classified in accordance with Schedule A as a very small water distribution facility shall ensure that water quality samples are Sampling requirements - very small facility
- (a) collected from each source of supply, and from at least one site within the distribution system, and analysed for the presence of coliform bacteria and E. coli at least once per quarter each year; and
 - (b) collected from each source of supply and subjected to a general chemical analysis at least once every three years.
- (2) Subject to subsection 16(2), the owner of a water distribution facility classified in accordance with Schedule A as a small water distribution facility shall ensure that water quality samples are Sampling requirements - small facility
- (a) collected from each source of supply, and from at least two sites within the distribution system, and analysed for the presence of coliform bacteria and E. coli at least once per quarter each year; and
 - (b) collected from each source of supply and subjected to a general chemical analysis at least once every three years.
- 15.** The owner of a water distribution facility classified in accordance with Schedule A as a Class I, II, III or IV water distribution facility shall ensure that sampling is conducted so that the interval between the collection of water quality samples from the distribution system does not exceed two weeks and Sampling requirements - free chlorine residual
- (a) a minimum of four water quality samples per month or, where the population served exceeds 5,000, one water quality sample per month for every 1,000 persons served, is collected from the

distribution system and analyzed for the presence of coliform bacteria and E. coli;

(b) a minimum of one water quality sample per month is collected from each source of supply and analyzed for the presence of coliform bacteria and E. coli;

(c) a minimum of one water quality sample per year is collected from each source of supply and at least two locations in the distribution system and subjected to a general chemical analysis;

(d) a minimum of one water quality sample every three years is collected from each source of supply and at least two locations in the distribution system and subjected to a detailed chemical analysis;

(e) a minimum of one measurement per week is made of the disinfection residual at representative points within the distribution system, and the results are recorded and available for inspection by the Minister; and

(f) any other water quality sampling requirements as directed by the Minister are met.

Sampling
requirements - part-
time operation of
semi-public supply

16. (1) Where a semi-public drinking water supply is not operated year round, the owner shall ensure that, prior to resuming operations, water quality samples are collected and analysed for the presence of coliform bacteria and E. coli.

Sampling
requirements - part-
time operation of
very small or small
facility

(2) Where a water distribution facility classified in accordance with Schedule A as a very small or a small water distribution facility is not operated year round, the owner shall ensure that, prior to resuming operations, water quality samples are collected from each source of supply and at least two sites within the distribution facility and analysed for the presence of coliform bacteria and E. coli.

Analysis
requirements

17. (1) The owner of a water supply system or a semi-public drinking water supply shall ensure that water quality samples collected in accordance with these regulations are analysed by a laboratory accredited by the Standards Council of Canada or by an accreditation body approved by the Minister.

Submission of
certain results

(2) Where a water quality sample is analysed by a laboratory other than the PEI Analytical Laboratories, the owner shall submit the results of the analysis to the Minister within five business days of the receipt of the analysis.

Notification of
certain results

(3) Where a water quality sample is analysed by a laboratory other than the PEI Analytical Laboratories and the results of the analysis indicate the presence of E. coli, the owner shall notify the Minister immediately by telephone, facsimile or electronically.

Reporting and Disclosure of Information

18. (1) The owner of a water supply system shall report, in summary form, the results of water quality analyses conducted in accordance with these regulations to the customers of the system, at least once a year.

Report to customers

(2) The owner of a water supply system or semi-public drinking water supply shall ensure that a record of all water quality analyses conducted in accordance with these regulations is maintained for a period of at least five years.

Maintenance of records

(3) The results of the analyses of water samples collected by the owner or operator of a water supply system from a source of supply or a distribution facility in accordance with these regulations shall be submitted to the Minister and, at the Minister's discretion, may be made available to the public in the form and through the means the Minister believes is appropriate.

Sample results

(4) Any reports submitted to the Minister in accordance with these regulations may, at the Minister's discretion, be made available to the public in the form and through the means the Minister believes is appropriate.

Reports are public information

19. The owner or operator of a water supply system shall report to the Minister:

Reporting required for system failures

(a) within 24 hours of their receipt by the owner or operator, the results of a drinking water analysis conducted by a laboratory other than the PEI Analytical Laboratories, for water in the distribution facility where total coliform bacteria results exceed 10 cfu/100mls, or any E. coli or faecal coliform organisms are detected;

(b) within seven days of their receipt by the owner or operator, the results of a drinking water analysis conducted by a laboratory other than the PEI Analytical Laboratories, for water in the distribution facility where a chemical parameter exceeds a Maximum Acceptable Concentration (MAC) or an Aesthetic Objective (AO) for as recommended in the Guidelines for Canadian Drinking Water Quality;

(c) immediately, all cases where equipment failure or other cause has or may have compromised the effectiveness of primary or secondary disinfection of water entering or in a water distribution facility;

(d) immediately, any case where a break in a water main has caused depressurization of a portion of a water distribution facility or where it is necessary to depressurize a portion of a water distribution facility in order to undertake repairs to a water main, and the location of the break is buried underground or is submerged in water.

PART 6 - WASTEWATER TREATMENT SYSTEMS

Monitoring Effluent Flow

Flow measurement- -continuous flow wastewater treatment system	20. (1) The owner of a continuous flow wastewater treatment system that has a hydraulic retention time of less than 15 days or that discharges effluent to a watercourse at an average daily rate of 2500 m ³ or more, shall ensure the effluent flow is measured using a device that has a margin of error of less than 15% of the actual effluent flow, and shall record the measurement daily.
Maintain flow measuring device	(2) The owner of a continuous flow wastewater treatment system shall maintain the flow measuring device referred to in subsection (1), at all times, as recommended by the manufacturer.
Alternate method may be approved	(3) Subject to subsection (4), the owner of a continuous flow wastewater treatment system that has a hydraulic retention time of 15 days or greater may provide the Minister with an estimation of daily flow using a method approved by the Minister, or may measure effluent flow using the device described in subsection (1).
Alternate method no longer permitted	(4) Five years after the date this section comes into force, subsection (3) shall cease to have effect and the requirements of subsections (1) and (2) shall apply in respect of measuring the effluent flow of a continuous flow wastewater treatment system that has a hydraulic retention time of 15 days or greater.
Requirements for certain facilities	(5) The owner of an alternative wastewater treatment facility or a facility treating wastewater from an industrial source shall ensure effluent flows are measured and recorded as directed by the Minister as a condition of the licence to operate the facility.

Effluent Quality Standards

Point where effluent quality standards apply	21. (1) Effluent quality standards apply at the end of the discharge pipe, at the point where the effluent is introduced into a watercourse or into or on the ground.
In case of man- made wetland	(2) Where a wastewater treatment facility uses a man-made wetland as the final part of the wastewater treatment process, the outfall from the wetland shall be considered to be the end of the discharge pipe.
Effluent quality standards	22. (1) Subject to sections 23 and 24, no owner of a wastewater treatment facility shall discharge or permit the discharge of the following to a watercourse: (a) effluent that has been determined to be acutely lethal, with acute lethality of the effluent being determined using

- (i) the procedure set out in section 5 or 6 of Reference Method EPS 1/RM/13, or
- (ii) the Procedure for pH Stabilization EPS 1/RM/50;
- (b) effluent that has an average concentration of total suspended solids (TSS) or non-filterable solids that exceeds 25 mg/L, determined in accordance with subsections (2) and (3);
- (c) effluent that has an average concentration of carbonaceous biochemical oxygen demand (cBOD5) matter that exceeds 25 mg/L;
- (d) effluent that has a maximum concentration of un-ionized ammonia in the effluent that exceeds 1.25 mg/L, expressed as nitrogen (N) at $15^{\circ}\text{C} \pm 1^{\circ}\text{C}$ as determined when the temperature of the sample has been adjusted to $15^{\circ}\text{C} \pm 1^{\circ}\text{C}$ prior to analysis of Total Ammonia and pH, by the following formula:

$$\text{Un-ionized ammonia} = \text{total ammonia} \times \frac{1}{1 + 10^{9.56 - \text{pH}}}$$

Where Total Ammonia is the concentration of un-ionized ammonia (NH_3) plus ionized ammonia (NH_4^+) expressed in mg/L;

- (e) effluent that has a maximum total chlorine residual that exceeds 0.02 mg/L;
- (f) where the wastewater treatment facility uses an ultra-violet light disinfection system to disinfect effluent,
 - (i) effluent that has a geometric mean concentration of faecal coliform organisms exceeding 200 MPN per 100 mls for the most recent 5 samples, or
 - (ii) effluent that has a concentration of faecal coliform organisms exceeding 400 MPN per 100 mls for any individual grab sample;
- (g) where the wastewater treatment facility uses a holding pond for the disinfection of wastewater effluent,
 - (i) effluent that has a the geometric mean concentration exceeding 1000 MPN per 100 mls of faecal coliform organisms for the last five samples, or
 - (ii) effluent that has a concentration of faecal coliform organisms exceeding that specified by the Minister.

(2) Subject to subsection (3), the average concentration referred to in clauses (1)(b) and (c) and the maximum concentration referred to in clauses (1)(d) and (e) shall be determined

Determination of averages

- (a) each calendar year, if the average daily volume of effluent deposited via the final discharge point during the previous calendar year was
 - (i) less than or equal to 17,500 m³, for an intermittent wastewater system, or
 - (ii) less than or equal to 25,00 m³, for a continuous wastewater system with a hydraulic retention time of five or more days;
- (b) each quarter, if the average daily volume of effluent deposited via the final discharge point during the previous calendar year was

- (i) greater than 2,500 m³ and less than or equal to 17,500 m³, for a continuous wastewater system with a hydraulic retention time of five or more days, and
- (ii) less than or equal to 17,500 m³, for any other continuous wastewater system; and
- (c) each month, if the average daily volume of effluent deposited via the final discharge point during the previous calendar year was greater than 17,500 m³.

Certain results not taken into account

(3) Where the facility is an intermittent wastewater treatment facility or a continuous flow wastewater treatment facility with a hydraulic retention time of 15 or more days, the determination of the average concentration referred to in clause (1)(b) shall not take into account the result of any determination of the concentration of suspended solids in a sample of effluent that was taken during the months of July through October, if that result exceeds 25 mg/L.

Exception, other standards

23. The Minister may require compliance with effluent quality standards other than those set out in section 22 as a term and condition on the licence to operate an alternative wastewater treatment facility or a wastewater treatment facility that is treating wastewater composed of less than 50% sewage.

Application for permit for temporary bypass

24. (1) The owner of a wastewater treatment facility may apply to the Minister, in the form required by the Minister, for a permit authorizing a temporary bypass of a portion or all of the wastewater treatment process, and the resulting discharge of partially treated or untreated wastewater to a watercourse,

- (a) to allow for maintenance or construction work on the facility; or
- (b) where circumstances that are beyond the control of the owner threaten to compromise the integrity of the wastewater treatment process unless a portion of wastewater is diverted from the normal wastewater treatment process.

Issuance of permit

(2) On receipt of an application under subsection (1), the Minister may issue a permit authorizing the owner of a wastewater treatment facility to temporarily bypass a portion or all of the wastewater treatment process for that facility if, in the Minister's opinion, it is necessary to maintain the long-term integrity of the wastewater treatment facility or will result in less overall impairment of water resources.

Conditions

(3) The Minister may impose terms and conditions on the permit to limit the impact of the bypass on the water course to which it is being discharged.

Suspension or alteration of effluent quality standards

(4) The Minister may, by the permit, suspend the application of or alter the effluent quality standards applicable to that facility under section 22 or pursuant to section 23.

(5) The permit shall state

- (a) the expiry date of the permit;
- (b) any terms and conditions imposed on the permit; and
- (c) any suspension or alteration of applicable effluent quality standards.

Information on permit

Monitoring Effluent Quality

25. (1) The owner of a continuous flow wastewater treatment system that has a hydraulic retention time of less than 15 days, and that discharges effluent to a watercourse at an average daily rate of 17,500 m³ day or more, shall ensure that composite samples are collected and analysed for carbonaceous biochemical oxygen demand (cBOD5), total suspended solids (TSS), total ammonia, total phosphorous, total nitrogen and a grab sample is collected and analysed for faecal coliform organisms, weekly, with the interval between sampling being at least five days.

Continuous flow, average daily rate \geq 17,500 m³

(2) The owner of a continuous flow wastewater treatment system that has a hydraulic retention time of less than 15 days, and that discharges effluent to a watercourse at an average daily rate that exceeds 2,500 m³, but less than 17,500 m³/day, shall ensure that composite samples are collected and analysed for carbonaceous biochemical oxygen demand (cBOD5), total suspended solids (TSS), total ammonia, total phosphorous and total nitrogen and a grab sample is collected and analysed for faecal coliform organisms, at least once every two weeks, with the interval between sampling being at least seven days.

Continuous flow, average daily rate $>$ 2,500 m³

(3) The owner of a continuous flow wastewater treatment facility with 15 days or greater hydraulic retention time, or an average daily flow that does not exceed 2,500 m³, shall ensure that composite or grab samples are collected and analysed for carbonaceous biochemical oxygen demand (cBOD5), total suspended solids (TSS), total ammonia, total phosphorous and total nitrogen and a grab sample is collected and analysed for faecal coliform organisms, on a quarterly basis, with the intervals between sampling being at least 60 days.

Continuous flow, hydraulic retention time \geq 15 days or average daily rate \leq 2,500 m³

(4) The owner of an intermittent wastewater treatment facility shall ensure that composite or grab samples are collected and analysed for carbonaceous biochemical oxygen demand (cBOD5), total suspended solids (TSS), total ammonia, total phosphorous and total nitrogen and a grab sample is collected and analysed for faecal coliform organisms, as directed by the Minister.

Intermittent wastewater treatment facility

Acute lethality testing requirements	<p>(5) The owner of a wastewater treatment facility shall ensure that acute lethality testing is completed quarterly on effluent, where the facility has or will be discharging effluent equal to or greater than 2500 m³/day on average for the calendar year, except</p> <p>(a) after four consecutive sampling events have confirmed the effluent is not acutely lethal, the sampling frequency for acute lethality testing may be reduced to once per calendar year, with the samples being collected at least six months apart;</p> <p>(b) where any sample tests as acutely lethal, the sampling frequency shall increase to twice per month, with the samples being collected at least seven days apart, until three consecutive samples indicate the effluent is not acutely lethal;</p> <p>(c) where acute lethality testing conducted within six months prior to the date this section came into force showed the effluent was not acutely lethal, the sampling frequency may be reduced to once per calendar year, with the samples being collected at least six months apart.</p>
Report re acutely lethal effluent	<p>(6) Where effluent from a wastewater treatment facility has tested as acutely lethal, the owner of the wastewater treatment facility shall submit a report to the Minister stating the cause of the acutely lethal effluent, the steps that will be taken to remedy the problem and the time within which those steps will be taken.</p>
Monitoring requirements may be condition of licence	<p>26. The Minister may require compliance with specified effluent monitoring requirements as a term and condition on the licence to operate an alternate wastewater treatment facility or a wastewater treatment facility where more than 50% of the influent water is from an industrial wastewater treatment source.</p>
Analysis required	<p>27. (1) The owner of a wastewater treatment facility shall ensure that wastewater quality samples collected in accordance with these regulations are analysed by a laboratory accredited by the Standards Council of Canada or by an accreditation body approved by the Minister.</p>
Submission of certain results	<p>(2) Where a wastewater quality sample is analysed by a laboratory other than the PEI Analytical Laboratories, the owner shall submit the results of the analysis to the Minister within five business days of the receipt of the results.</p>
<p>Reporting and Disclosure of Information</p>	
Reporting of analyses required	<p>28. (1) The owner of a wastewater treatment facility shall report, in summary form, the results of analyses of effluent conducted in accordance with these regulations to the customers of the wastewater treatment facility, at least once a year.</p>

(2) The owner of a wastewater treatment facility shall ensure a record of all analyses of effluent required under these regulations is maintained for a period of at least five years.

Maintenance of records

29. (1) The results of analyses of effluent conducted, or wastewater flow measurements taken, in accordance with these regulations shall be considered to be public information, and the Minister may, at his or her discretion, make this information available to the public in the form and through the means the Minister considers appropriate.

Results may be public information

(2) The owner or operator of a wastewater treatment facility shall ensure that results of analyses of effluent conducted, or wastewater flow measurements taken, in accordance with these regulations are made available to an environment officer, on request.

Results available to environment officers

(3) The owner or operator of a wastewater treatment facility discharging effluent at flow rates of 100 m³/day or more shall ensure that results of analyses of effluent conducted, or wastewater flow measurements taken, in accordance with these regulations are submitted to and recorded by the Environmental Regulatory Reporting Information System (ERRIS) within 14 days of receiving the results or taking the measurements, as the case may be.

Submission of results to (ERRIS)

(4) The owner or operator of a wastewater treatment facility discharging effluent at rates or volumes that are above allowable limits stated on the licence to operate the facility or that fails to meet effluent quality standards in accordance with these regulations shall ensure that the discharge is reported to the Minister in the manner required by the Minister.

Reporting required

30. These regulations come into force on

Commencement

SCHEDULE A**CLASSIFICATION OF FACILITIES**

Types of facilities	<p>1. (1) A facility shall be characterized as one of the following types:</p> <ul style="list-style-type: none"> (a) water treatment facility (WT); (b) water distribution facility (WD); (c) wastewater treatment facility (WWT); (d) wastewater collection facility (WWC).
Water distribution or treatment facility	<p>(2) A water supply facility shall be considered a water distribution facility unless a chemical other than chlorine is added to the water supplied, in which case it shall be considered a water treatment facility.</p>
Wastewater collection facility	<p>(3) A wastewater facility with only collection, lift stations and a gravity sewer main shall be considered a wastewater collection facility.</p>
Not a treatment facility	<p>(4) A water or wastewater facility with only simple in-line treatment, such as booster pumping, secondary chlorination or odour control, shall not be considered a water treatment facility or a wastewater treatment facility, as the case may be.</p>
Water distribution or wastewater collection facility classifications	<p>2. (1) Subject to subsections (2) to (4), a water distribution facility or wastewater collection facility shall be classified as Class I, II, III or IV based on the size of the population served by the facility, in accordance with Table 1 of this Schedule.</p>
Small or very small water distribution facility	<p>(2) A water distribution facility that has 150 or fewer service connections and is not owned by a municipality shall be classified as small or very small based on the number of service connections the facility has, in accordance with Table 1 of this Schedule.</p>
Exception, campground	<p>(3) A water distribution facility that has more than 150 service connections, is not owned by a municipality and supplies water to a campground shall be classified as small.</p>
Size of population served < 500	<p>(4) A water distribution facility that serves less than 500 persons but does not meet the criteria in subsections (2) or (3) to be classified as small or very small shall be classified as Class I.</p>
Water or wastewater treatment classifications	<p>3. A water treatment facility or wastewater treatment facility shall be classified as Class I, II, III or IV in relation to its size and complexity, based on the number of points assigned to it under Table 2 or 3 of this Schedule, as the case may be.</p>

**TABLE 1
FACILITY CLASSIFICATION SYSTEM**

Facility	Units	Very small	Small	CLASS I	CLASS II	CLASS III	CLASS IV
WT	Range of points	N/A	N/A	30 or less	31-55	56-75	> 75
WD	Service Connections	5 - 20	21 - 150	N/A	N/A	N/A	N/A
WD	Population served	N/A	N/A	500 - 1,500	1,501 - 15,000	15,001 - 50,000	> 50,000
WWT	Range of points	N/A	N/A	30 or less	31-55	56-75	> 75
WWC	Population served	N/A	N/A	1,500 or less	1,501 - 15,000	15,001 - 50,000	> 50,000

**TABLE 2
POINT SYSTEM CLASSIFICATION OF
WATER TREATMENT FACILITIES:**

Each unit process shall have points assigned only once.

Item	Points
Size (1 point minimum to 20 points maximum)	
Design flow average day, or peak month's flow average day, whichever is larger (1 point per 1893 m ³ /day)	1-20
Water supply sources	
• Seawater/Saltwater	0
• Groundwater (Non-GUDI)	0
• Groundwater under direct influence of surface water (GUDI)	8
• Surface water	10
Average Raw Water Quality – Applies to all sources (surface and groundwater). Key is the effect on treatment process changes that would be necessary to achieve optimized performance.	
• Little or no variation – no treatment provided except disinfection	0
• Minor variation – e.g. “high quality” surface source appropriate for slow sand filtration	1
• Moderate variation in chemical feed, dosage changes made monthly	2
• Variations significant enough to require pronounced or very frequent changes	5

• Severe variations – source subject to non-point discharges, agricultural/urban storm runoff, flooding	7
• Raw water quality subject to agricultural or municipal waste point source discharges	8
• Raw water quality subject to industrial waste pollution	10
Raw water quality is subject to or has elevated:	
• Taste or odour for which treatment process adjustments are routinely made	2
• Colour > 15 TCU (not due to precipitated metals).	3
• Iron or/and manganese: Fe (2 points) or Mn (3 points) concentrations above aesthetic objective 3 points maximum allowed	2-3
• Algal growths for which treatment process adjustments are routinely made	3
Chemical treatment / Addition process	
• Fluoridation	4
• Disinfection/Oxidation (Note: Points are additive to a maximum of 15 points allowed for this category.) Check all that apply: <ul style="list-style-type: none"> • Chlorination: <ul style="list-style-type: none"> • Hypochlorites (5 points) <input type="checkbox"/> • If generated on site (add 1 point) <input type="checkbox"/> • Chlorine gas (8 points) <input type="checkbox"/> • Chloramination (10 points) <input type="checkbox"/> • Chlorine dioxide (10 points) <input type="checkbox"/> • Ozonation (10 points) <input type="checkbox"/> • UV Irradiation (2 points) <input type="checkbox"/> • Iodine, Peroxide, or similar (5 points) <input type="checkbox"/> • Potassium permanganate (4 points) (if used with greensand filtration do not give 4 points) <input type="checkbox"/> 	0-15
• pH adjustment for process control (e.g. pH adjustment aids coagulation)	4
• Stability or Corrosion Control (If the same chemical is used for both Corrosion Control and pH adjustment, count points only once)	4
Coagulation / Flocculation process	
• Primary coagulant addition	6
• Coagulant aid / Flocculent chemical addition (in addition to primary coagulant use)	2
• Flocculation	2
• Filter aid addition (non-ionic / anionic polymers)	2
Clarification / Sedimentation Process	

• Sedimentation (plain, tube, plate)	4
• Contact adsorption	6
• Other Clarification processes (air flotation - DAF, ballasted clarification, etc)	6
• Upflow clarification (“sludge blanket clarifier”)	8
Filtration	
• Granular media filtration (Surface water / GUDI) \leq 122 l pm / sq m	10
• Granular media filtration (Surface water / GUDI) \geq 122 l pm / sq m	20
• Groundwater filtration	6
• Membrane filtration	10
• Diatomaceous earth (pre-coat filtration)	10
• Cartridge / bag filters	5
• Pre-filtration (staged filtration, pressure sand w/o coagulation, etc.): add one point per stage to a maximum of 3 points	1-3
• Slow sand	5
Other Treatment Processes	
• Aeration	3
• Air stripping (including diffused air, packed tower aeration)	5
• Ion-exchange / softening	5
• Greensand filtration	10
• Lime-soda ash softening (includes: chemical addition, mixing/flocculation/clarification/filtration - do not add points for these processes separately)	20
• Granular activated carbon filter (do not assign points when included as a bed layer in another filter)	5
• Powdered activated carbon	2
• Reservoir management employing chemical addition	2
• Blending sources with significantly different water quality <ul style="list-style-type: none"> • To achieve health related compliance (4 points) • For aesthetic reasons (2 points) 	2-4
• Electro dialysis	15
• Other: Certification authority may assign 2 to 15 additional points for processes not listed elsewhere in this document. (Specify: _____)	2-15
Residuals Disposal	
• Discharge to surface, sewer, or equivalent (0 points)	0
• On-site disposal, land application (1 point)	1
• Discharge lagoon / drying bed, with no recovery / recycling	1

e.g downstream outfall(1 point)	
<ul style="list-style-type: none"> • Backwash recovery/recycling: discharge to basin or lagoon and then to source (2 points) 	2
<ul style="list-style-type: none"> • Backwash recovery/recycling: discharge to basin or lagoon and then to plant intake (3 points) 	3
Instrumentation	
<ul style="list-style-type: none"> • The use of a supervisory control and data acquisition SCADA system or similar instrumentation systems to provide data with monitoring/alarm only, no process operation – plant has no automated shutdown capabilities. 	0
<ul style="list-style-type: none"> • The use of SCADA or similar instrumentation systems to provide data with limited process operation – e.g. remote shutdown capability. 	1
<ul style="list-style-type: none"> • The use of SCADA or similar instrumentation systems to provide data with moderate process operation – alarms and shutdowns, plus partial remote operation of plant. 	2
<ul style="list-style-type: none"> • The use of SCADA or similar instrumentation systems to provide data with extensive or total process operation – alarms and shutdowns, full remote operation of plant possible. 	4

**TABLE 3
POINT SYSTEM CLASSIFICATION OF WASTEWATER
TREATMENT FACILITIES**

Each unit process shall have points assigned only once.

Item	Points
Size (20 point maximum)	
Maximum population served, peak day, per annum. 1 point per 10,000 population served or any fraction thereof	1-10
Design flow average day or peak month's average day, per annum, whichever is larger. 1 point per 3785 m ³ /day or any fraction thereof.	1-10
Variation in raw waste (6 points maximum)	
• Variations do not exceed those normally or typically expected	0
• Recurring deviations or excessive variations of 100 to 200% in strength or flow	2
• Recurring deviations or excessive variations of more than 200% in strength or flow	4
• Raw wastes subject to toxic waste discharges	6
• Impact of septage or truck-hauled waste where: 0 = no septage or truck hauled waste accepted; 2 = septage or truck waste accepted seasonally, only; and 4 = septage or truck waste accepted at all times.	0-4
Preliminary treatment	
• Facility pumping of main flow	3
• Screening or Comminution	3
• Grit removal	3
• Equalization	1
• Grease removal	3
Primary treatment	
• Sedimentation/Clarification	5
• Imhoff tanks or similar	5
• Coagulation/Flocculation	5
Secondary treatment	
• Fixed-film reactor	10
• Activated sludge	15
• Stabilization ponds without aeration	5

• Stabilization ponds with aeration	8
• Bio-filtration with secondary clarifiers	10
Tertiary treatment	
• Polishing ponds for advanced waste treatment	2
• Chemical/physical advanced waste treatment without secondary treatment	15
• Chemical/physical advanced waste treatment following secondary	10
• Biological or chemical/biological advanced waste treatment	12
• Nitrification by designed extended aeration only	2
• Ion exchange for advanced waste treatment	10
• Reverse osmosis, electro dialysis and other membrane filtration techniques	15
• Advanced waste treatment chemical recovery, carbon regeneration	4
• Media filtration	5
Additional treatment processes	
• Chemical additions (2 points each for a maximum of 6 points)	2-6
• Dissolved air flotation	3
• Intermittent sand filter	2
• Recirculating intermittent sand filter	3
• Microscreens	5
• Generation of oxygen	5
• pH adjustment	1
• Oil separation	3
• Air stripping	5
• Biological or chemical scrubbers for odor control	5
Solids handling	
• Solids stabilization	5
• Gravity thickening	2
• Solids thickening	5
• Mechanical dewatering of solids	8
• Anaerobic digestion of solids	10
• Utilization of digester gas for heating or cogeneration	5
• Aerobic digestion of solids	6
• Evaporative sludge drying	2
• Solids reduction (including incineration, wet oxidation)	12

• On-site landfill for solids	2
• Solids composting	10
• Irrigation of solids	5
• Land application of biosolids by contractor	2
• Land application of biosolids under direction of operator-in-charge	10
Disinfection (10 points maximum)	
• Chlorination or ultraviolet irradiation	5
• Ozonation	10
Effluent discharge (10 points maximum)	
• Mechanical post aeration	2
• Direct recycle and reuse	6
• Land disposal (surface)	2
• Land disposal (subsurface)	4
Instrumentation (6 points maximum)	
The use of SCADA or similar instrumentation systems to provide data with no process operation	0
The use of SCADA or similar instrumentation systems to provide data with limited process operation	2
The use of SCADA or similar instrumentation systems to provide data with moderate process operation	4
The use of SCADA or similar instrumentation systems to provide data with extensive or total process operation	6
Laboratory Control – Bacteriological/Biological (20 point maximum)	
• Lab work done outside the facility	0
• Membrane filter procedures	3
• Use of fermentation tubes or any dilution method; fecal coliform determination	5
• Biological identification	7
• Viral studies or similarly complex work conducted on-site	10
Laboratory Control – Chemical/Physical (10 point maximum)	
• Lab work done outside the facility	0
• Push-button or visual methods for simple tests such as pH, settleable solids	3
• Additional procedures such as measurements of dissolved oxygen, chemical oxygen demand, biological oxygen demand, gas analysis, titrations, solids, volatile content	5

<ul style="list-style-type: none"> • More advanced determinations such as specific constituents; nutrients, total oils, phenols 	7
<ul style="list-style-type: none"> • Instrumentation such as atomic absorption, gas chromatography 	10

SCHEDULE B OPERATOR CERTIFICATION

Types of operator certification

1. The types of operator certification are as follows:

- (a) water distribution facility operator;
- (b) water treatment facility operator;
- (c) wastewater treatment facility operator;
- (d) wastewater collection facility operator.

Classes of water distribution facility operator certificates

2. (1) A water distribution facility operator certificate shall be issued at the classification level of small class or Class I, II, III, or IV in accordance with the qualifications of the operator and the requirements set out in this Schedule.

Classes of other operator certificates

(2) Operator certificates referred to in clauses 1(b) to (d) shall be issued at the classification level of Class I, II, III, or IV in accordance with the qualifications of the operator and the requirements set out in this Schedule.

Education requirements

3. (1) Table 1, below, outlines the minimum education requirements for the certification of operators at each classification level:

Table 1 - Education Requirements

Class	Education	
	Secondary	Post-Secondary
Small	6 hours of training approved by the Minister	N/A
I	Grade 12 or equivalent	Entry Level Training as determined by the Minister
II	Grade 12 or equivalent	N/A
III	Grade 12 or equivalent	2 years or 900 contact hours
IV	Grade 12 or equivalent	4 years or 1800 contact hours

Grade 12 equivalent

- (2) The following are considered equivalent to Grade 12:
- (a) a General Educational Development Equivalency Diploma (GED);
 - (b) a post-secondary assessment by person or institution considered qualified to assess education status;

- (c) the successful completion of a certification program recognized by the jurisdictional apprenticeship and occupational certification authority (trade certified);
- (d) successful completion of a post-secondary degree program from a recognized institution;
- (e) successful completion of a diploma or certificate program from a recognized institution.

(3) There shall be no substitution of operating experience for the high school requirement. No substitution

(4) The following courses are considered acceptable for post-secondary requirements: Acceptable post-secondary courses

- (a) successful completion of a certification program recognized by the jurisdictional apprenticeship and occupational certification authority (trade certified), if not counted towards an applicant's secondary education requirement;
- (b) successful completion of a post-secondary degree program from a recognized institution;
- (c) partial completion of a relevant apprenticeship, post-secondary degree or diploma program or completion of relevant short courses;
- (d) partial completion of relevant trades, post-secondary degree, or diploma programs;
- (e) completion of relevant short courses or correspondence courses, which the Minister has determined to be acceptable continuing education units with 45 continuing education units being considered by the Minister as being equivalent to one year of post-secondary education.

(5) The programs accepted for fulfilment of post-secondary education requirements include: Acceptable post-secondary programs

- (a) degree programs in the fields of Science, Engineering, Agriculture, Biology, Chemistry, Physics, Mathematics, Laboratory Studies or Hydrogeology;
- (b) diploma programs in the fields of Applied Science and Technology, Environmental Technician or Environmental Technologist, or Laboratory Studies;
- (c) the academic portion of relevant trades programs accepted at a value assigned by the Minister including Power Engineering, Instrumentation, Plumbing, Electrical, Millwright and Mechanics;
- (d) short courses relevant to the duties of operators accepted at a value assigned by the Minister;
- (e) completion of other four-year university degree programs may be accepted up to a maximum of 450 contact hours with the Minister's approval;

(f) other courses that the Minister has determined are directly related to the operation of water supply or wastewater treatment systems.

Substitution of DRC
experience for
education

4. (1) DRC experience obtained in a Class II or higher class facility and not counted towards the minimum DRC experience requirements in section 5 may be substituted for up to one year of the post-secondary education requirements for Class III operator certification.

(2) DRC experience obtained in a Class III or IV facility after obtaining Class III operator certification and not counted towards the minimum DRC experience requirements in section 5 may be substituted for up to two years of the post-secondary education requirements for Class IV operator certification.

Experience
requirements

5. (1) Table 2, below, specifies the minimum experience requirements for the certification of operators in classes I to IV:

Table 2 - Minimum Experience Requirements

Class	Operating Experience	DRC Experience
I	1 year (1,800 hours)	0 years
II	3 years (5,400 hours)	0 years
III	4 years (7,200 hours)	2 years in Class II or higher facility (3,600 hours)
IV	4 years (7,200 hours)	2 years in Class III or higher facility (3,600 hours)

No substitutions for
Level I

(2) No education substitutions are allowed to meet the operating experience requirement for a Class I operator.

Substitutions for
Levels II, III, and
IV

(3) Education substitutions for up to 50% of the operating experience requirement are allowed for Class II, III and IV operators, in accordance with section 6 of this Schedule.

Operating credit -
how granted

(4) Full operating credit shall be granted for each type of facility or system an operator is employed at in full capacity unless the operator is only working part-time within the system.

Operating
experience to be
verified

(5) Operating experience shall be verified by an operator-in-charge or owner representative and supported by a job description and list of operational job duties.

Meaning of
operating
experience
Meaning of hands-
on

(6) Operating experience means hands-on operation of the facility or system or on- site operational responsibility for operational decisions.

(7) Hands-on means the applicant has been actively operating a facility or system and gaining knowledge, at least in part, from that daily operating experience and not merely from textbook study.

6. (1) The Minister may consider as related experience, operating experience obtained in a facility other than the type of facility for which certification is sought, and may allow an operator with at least one year of operator experience to substitute related experience for up to 50% of the required operator experience for certification in classes II, III and IV.

Substitution of related experience

(2) Related experience obtained through particular education or training shall be credited for required operational experience in the following ratios:

Related experience obtained through education or training

(a) where the related experience was obtained in a water or wastewater facility or a related facility as part of a relevant certification program recognized by the jurisdictional apprenticeship and occupational certification authority, such as a program for certification as an electrician, plumber, pipe-fitter, millwright or power or stationary engineer - 1:2;

(b) where the related experience was obtained in a facility other than a water or wastewater facility or a related facility as part of a relevant certification program recognized by the jurisdictional apprenticeship and occupational certification authority, such as a program for certification as an electrician, plumber, pipe-fitter, millwright or power or stationary engineer - 1:3;

(c) where the related experience was obtained as part of an education or training program for a technical profession directly related to water and wastewater management, such as an engineer, engineering technician, environmental technician or technologist, or laboratory technician - 1:2;

(d) for an water distribution facility operator certificate or a wastewater collection facility operator certificate, where the related experience was obtained as part of a semi-relevant certification program recognized by the jurisdictional apprenticeship and occupational certification authority, such as a program for certification as a welder or pipe-layer - 1:3.

(3) The substitution of education and related experience for operating experience shall not exceed 50% of the stated operating experience requirement.

Maximum substitution

7. (1) An operator will obtain DRC experience when the operator has been authorized to perform, on a day-to-day basis, any of the following types of duties:

Obtaining DRC experience

(a) review and establish operational parameters for a facility or system;

- (b) control the on-site operations of a facility or system, including monitoring, evaluation and adjustment of the facility or system or process;
- (c) provide on-site supervision of operators performing duties set out in clause (a) or (b).

- Only after Level II obtained (2) DRC experience may only be obtained after an operator has Class II operator certification.
- Level III requirements (3) For Class III operator certification, an operator shall obtain the required DRC experience in a Class II or higher facility.
- Level IV requirements (4) For Class IV operator certification, an operator shall obtain the required DRC experience at a Class III or IV facility after obtaining Class III operator certification.
- Substitution of post-secondary education (5) Post-secondary education not counted towards the minimum education requirements in Table 1 or substituted for operating experience may be substituted for up to 50% of the DRC experience required in Table 2.

**SCHEDULE C
REQUIRED DRINKING WATER QUALITY
MONITORING PARAMETERS**

1. For the purpose of these regulations, a general chemical analysis shall include, as a minimum, the analysis of a water quality sample for the following substances and water quality parameters:

General chemical analysis

- (a) alkalinity;
- (b) arsenic;
- (c) barium;
- (d) calcium;
- (e) chloride;
- (f) copper;
- (g) hardness;
- (h) iron;
- (i) lead;
- (j) magnesium;
- (k) manganese;
- (l) nitrate;
- (m) pH;
- (n) phosphorous;
- (o) potassium;
- (p) selenium;
- (q) sodium;
- (r) sulphate;
- (s) turbidity;
- (t) uranium;
- (u) zinc.

2. (1) For the purpose of these regulations, a detailed chemical analysis shall include, as a minimum, the analysis of a water quality sample for the substances listed in subsections (2) to (5).

Detailed chemical analysis, substances

(2) Water samples collected from each source of supply shall be analysed for the following metals and other inorganic constituents:

Metals and other inorganic constituents tested at source

- (a) aluminium;
- (b) antimony;
- (c) boron;
- (d) bromide;
- (e) cadmium;
- (f) chromium;
- (g) fluoride;
- (h) silver;
- (i) strontium;
- (j) total organic carbon.

Organic
constituents tested
at source

(3) Water samples collected from each source of supply shall be analysed for the following organic constituents:

- (a) benzene;
- (b) benzo[a]pyrene;
- (c) carbon tetrachloride;
- (d) chlorophenols;
- (e) dichlorobenzenes;
- (f) dichloroethane;
- (g) dichloroethylene;
- (h) dichloromethane;
- (i) ethylbenzene;
- (j) monochlorobenzene;
- (k) tetrachloroethylene;
- (l) toluene;
- (m) trichloroethylene;
- (n) vinyl chloride;
- (o) xylenes.

Metals and other
inorganic
constituents tested
at two locations

(4) Water samples collected from at least two representative locations within the distribution system shall be analysed for the following metals and other inorganic constituents:

- (a) aluminium;
- (b) antimony;
- (c) boron;
- (d) bromate;
- (e) cadmium;
- (f) chromium;
- (g) fluoride;
- (h) silver;
- (i) strontium;
- (j) total organic carbon;
- (k) vanadium.

Organic
constituents tested
at two locations

(5) Water samples collected from at least two representative locations within the distribution system shall be analysed for the following organic constituents:

- (a) benzo[a]pyrene;
- (b) bromodichloromethane;
- (c) bromoform;
- (d) chloramines;
- (e) chlorodibromomethane;
- (f) chloroform;
- (g) total trihalomethanes.

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**SCHEDULE D
FEES**

[TBD]

SCHEDULE E**STANDARDS FOR MATERIALS IN CONTACT WITH
DRINKING WATER, DEVICES USED FOR TREATING
DRINKING WATER AND DETERMINATION OF LOG CREDITS
FOR DISINFECTION**

Standards	<p>1. (1) The standards referred to in subsection 11(2) of these regulations for materials in contact with drinking water, or for devices that are used to treat drinking water, are:</p> <ul style="list-style-type: none"> (a) for health-based standards for materials and devices in contact with drinking water: <ul style="list-style-type: none"> (i) NSF 60 - Drinking water treatment additives - Health effects, (ii) NSF 61 - Drinking water system components - Health effects; and (b) for health-based performance standards for drinking water treatment devices: <ul style="list-style-type: none"> (i) NSF 53 - Drinking water treatment units - Health effects, (ii) NSF 55 - Ultraviolet microbiological water treatment systems, (iii) NSF 58 - Reverse osmosis drinking water treatment systems, (iv) NSF 62 - Drinking water distillation systems.
Log reduction credits	<p>(2) Log reduction credits for primary disinfection of drinking water shall be determined in accordance with the following subsections and Tables 1.1, 1.2 and 2 of this Schedule.</p>
Primary disinfection	<p>(3) Class I to IV water distribution facilities can achieve primary disinfection of source water prior to delivery to their customers as required by subsection 11(4) of these regulations by using</p> <ul style="list-style-type: none"> (a) chemical disinfection using free chlorine or chlorine dioxide as a disinfectant; (b) ultraviolet disinfection; or (c) a combination of chemical and ultraviolet disinfection as set out in this section.
Chlorine or chlorine dioxide disinfection	<p>(4) Compliance with the primary disinfection requirements for drinking water when using a chemical disinfectant requires that a CT value, as set out in subsection (6), is maintained that meets or exceeds the required log reduction of viruses taken from Table 1.1 or 1.2, below, for free chlorine or chlorine dioxide respectively.</p>
CT value	<p>(5) The CT value selected from Table 1.1 or 1.2, below, should represent the conditions of the lowest temperature and highest pH of the water to be disinfected.</p>
How calculated	

(6) CT values are calculated by multiplying concentration of chlorine or chlorine dioxide (C), expressed as mg/L, by the time the water is in contact with the disinfectant (T), expressed in minutes.

(7) The factor “T” is calculated by multiplying the theoretical hydraulic “T” factor detention time of the contact chamber (i.e. volume of contact chamber divided by the flow rate) by a baffling factor for the contact chamber taken from Table 2, below.

(8) The value of T used in the calculation should represent the Value of T minimum contact time, based on the peak hourly flow rate of the water distribution facility.

Table 1.1 - CT Values for inactivation of viruses by free chlorine (pH = 6-9)			
Water Temperature (°C)	2-log Inactivation	3-log Inactivation	4-log Inactivation
0.5	6	9	12
5	4	6	8
10	3	4	6
15	2	3	4
20	1	2	3
25	1	1	2

Table 1.2 - CT Values for inactivation of viruses by chlorine dioxide			
Water Temperature (°C)	2-log Inactivation	3-log Inactivation	4-log Inactivation
≤1	8.4	25.6	50.1
5	5.6	17.1	33.4
10	4.2	12.8	25.1
15	2.8	8.6	16.7
20	2.1	6.4	12.5
25	1.4	4.3	8.4

Baffling Conditions	Baffling Factor	Baffling Description
Perfect Mix	1	-Very high length to width ratio -Typical for plug flow
Superior mix	0.7	-Perforated inlet baffle -Serpentine or perforated intra-basin baffles -Outlet weir or perforated launders
Average	0.5	-baffled inlet or outlet with some intra-basin baffles
Poor	0.3	-single/multiple un-baffled inlets and outlets -No intra-basin baffles
Un-baffled	0.1	-No baffles, separate inlet/outlet -mixed flow -high inlet/outlet velocities -low length to width ratio

Ultraviolet (UV) disinfection

(9) Compliance with the primary disinfection requirements for drinking water when using a ultra-violet disinfection requires that a UV dose is maintained that meets or exceeds the required log reduction of viruses taken from Table 3, below.

UV dose calculation

(10) The UV dose (mJ/cm^2) is calculated by multiplying intensity of the ultra-violet light source ($\mu\text{W}/\text{cm}^2$) by the length of time (T), measured in seconds, the water is exposed to UV radiation.

Basis for calculation

(11) The UV dose calculation should be based on the minimum exposure time of the water to UV radiation, based on the peak hourly flow rate of the system, and should take into account any recommendations from the manufacturer of the treatment devices with respect to influent water quality.

Table 3 - UV Dose Values for inactivation of viruses	
Log Inactivation	UV Dose (mJ/cm²)*
0.5	40
1.0	58
1.5	79
2.0	100
2.5	121
3.0	143
3.5	163
4.0	186

***Based on adenovirus inactivation.**