

EC2021-495**CHILDREN'S LAW ACT
PARENTING COORDINATOR REGULATIONS
AMENDMENT**

Pursuant to section 14 of the *Children's Law Act* R.S.P.E.I. 1988, Cap. C- 6.1, Council made the following regulations:

1. The Schedule to the *Children's Law Act* Parenting Coordinator Regulations (EC99/21) is amended

(a) in clause (e), by the deletion of the period and the substitution of a semicolon; and

(b) by the addition of the following after clause (e):

- (f) Riverdale Mediation Training & Consulting;
- (g) Association of Family and Conciliation Courts;
- (h) Ontario Association for Family Mediation;
- (i) ADR Atlantic Institute;
- (j) High Conflict Institute Inc.

2. These regulations come into force on June 19, 2021.**EXPLANATORY NOTES**

SECTION 1 amends the Schedule to the Parenting Coordinator Regulations (EC99/21) under the *Children's Law Act* R.S.P.E.I. 1988, Cap. C- 6.1, to add five designated bodies to the list of those that are authorized to provide training in parenting coordination for the purposes of the Act and the regulations.

SECTION 2 provides for the commencement of these regulations.

EC2021-496**CORONERS ACT
APPOINTMENT OF CORONER
DR. BRANDON WEBBER
(APPOINTMENT)**

Under authority of section 4 of the *Coroners Act* R.S.P.E.I. 1988, Cap. C- 25.1, Council appointed Dr. Brandon Webber of Summerside to serve at pleasure as a Coroner for Prince County, effective June 8, 2021.

EC2021-497

**ENVIRONMENTAL PROTECTION ACT
DRINKING WATER AND WASTEWATER FACILITY OPERATING REGULATIONS
REVOCATION**

Pursuant to section 25 of the *Environmental Protection Act* R.S.P.E.I. 1988, Cap. E-9, Council made the following regulations:

- 1. The *Environmental Protection Act* Drinking Water and Wastewater Facility Operating Regulations (EC710/04) are revoked.**
- 2. These regulations come into force on June 16, 2021.**

EXPLANATORY NOTES

SECTION 1 revokes the Drinking Water and Wastewater Facility Operating Regulations made under the *Environmental Protection Act*.

SECTION 2 provides for the commencement of these regulations.

EC2021-498

**ENVIRONMENTAL PROTECTION ACT
SEWAGE DISPOSAL SYSTEMS REGULATIONS
REVOCATION**

Pursuant to section 25 of the *Environmental Protection Act* R.S.P.E.I. 1988, Cap. E-9, Council made the following regulations:

- 1. The *Environmental Protection Act* Sewage Disposal Systems Regulations (EC625/13) are revoked.**
- 2. These regulations come into force on June 16, 2021.**

EXPLANATORY NOTES

SECTION 1 revokes the Sewage Disposal Systems Regulations made under the *Environmental Protection Act*.

SECTION 2 provides for the commencement of these regulations.

EC2021-499

**ENVIRONMENTAL PROTECTION ACT
WATER WELL REGULATIONS
REVOCATION**

Pursuant to section 25 of the *Environmental Protection Act* R.S.P.E.I. 1988, Cap. E-9, Council made the following regulations:

- 1. The *Environmental Protection Act* Water Well Regulations (EC188/90) are revoked.**
- 2. These regulations come into force on June 16, 2021.**

EXPLANATORY NOTES

SECTION 1 revokes the Water Well Regulations made under the *Environmental Protection Act*.

SECTION 2 provides for the commencement of these regulations.

EC2021-500

EXECUTIVE COUNCIL ACT
 MINISTER OF ENVIRONMENT, ENERGY AND CLIMATE ACTION
 AUTHORITY TO ENTER INTO AN AGREEMENT
 (FIRST AMENDING AGREEMENT TO THE CANADA-
 PRINCE EDWARD ISLAND LOW CARBON ECONOMY
 LEADERSHIP FUND FUNDING AGREEMENT)
 WITH
 GOVERNMENT OF CANADA

Pursuant to clause 10(a) of the *Executive Council Act* R.S.P.E.I. 1988, Cap. E-12 Council authorized the Minister of Environment, Energy and Climate Action to enter into an amending agreement with the Government of Canada, as represented by the Minister of Environment and Climate Change Canada, to receive funding through the Low Carbon Economy Fund, for the period from the date of signing to December 31, 2023, such as more particularly described in the draft agreement.

EC2021-501

AN ACT TO AMEND THE MARRIAGE ACT
 DECLARATION RE

Under authority of section 15 of the *An Act to Amend the Marriage Act* Stats. P.E.I. 2021, c. 12 Council ordered that a Proclamation do issue proclaiming the said "An Act to Amend the Marriage Act" to come into force effective July 3, 2021.

EC2021-502

**MARRIAGE ACT
 REGULATIONS**

Pursuant to section 25 of the *Marriage Act* R.S.P.E.I. 1988, Cap. M-3, Council made the following regulations:

1. The governing authority of a religious body seeking to have members of its clergy registered to solemnize marriage shall, in order to be recognized by the Director under subsection 4(2) of the Act, submit information in the form and manner required by the Director. Religious body seeking recognition
2. Where, pursuant to subsection 4(1) of the Act, the governing authority of a religious body seeks registration of a member of its clergy who is not currently registered, the governing authority of the religious body shall submit a request to the Director, in writing, and provide the clergy's name, contact address and telephone number, and any other information required by the Director. Application to register clergy
3. (1) The governing authority of a religious body recognized by the Director under subsection 4(2) of the Act shall, pursuant to clause 7(1)(b) of the Act, at the time and in the form and manner required by the Director, submit to the Director, on an annual basis, a list of the names of all members of the clergy, with contact addresses, telephone numbers and any other information that may be required, for registration to solemnize marriage in the ensuing year. Annual list of clergy
- (2) Where there is a subsequent change in the names or other contact information in respect of the annual list of clergy submitted by the governing authority of a religious body pursuant to subsection (1), the governing authority of the religious body shall notify the Director. Idem
- 4 (1) For the purposes of subclause 8.1(1)(c)(ii) of the Act, an applicant for a marriage commissioner's license shall Additional qualifications

- (a) be a Canadian citizen or permanent resident; and
 (b) complete a training program required by the Director respecting legislation and other topics relevant to the duties of a marriage commissioner under the Act.
- (2) Where, in respect of an application for a marriage commissioner's license, the Director Issuance
 (a) is satisfied that the applicant has met the requirements of section 8.1 of the Act and subsection (1) and paid the license or renewal fee set out in subsection 5(1), the Director shall issue a marriage commissioner's license to the applicant; or
 (b) is not satisfied that the applicant has met the requirements of section 8.1 of the Act or subsection (1), the Director may refuse to issue a marriage commissioner's license to the applicant and shall provide to the applicant the Director's reasons for the refusal.
- 5** (1) The fees payable in respect of a marriage commissioner's license are as follows: Fees
 (a) for an application under clause 8.1(1)(b) of the Act \$50;
 (b) for the training program referred to in clause 4(1)(b) 50;
 (c) for the issuance of a marriage commissioner's license 100;
 (d) for the renewal of a marriage commissioner's license 100.
- (2) The fees set out in subsection (1) are payable at the time an application for a marriage commissioner's license or the renewal of a marriage commissioner's license is submitted to the Director. Idem
- (3) The application fee set out in clause (1)(a) is non-refundable. Refund
- 6.** The fee for the issuance of a marriage license is \$100, payable to the Director. Fee for marriage license
- 7.** (1) Despite sections 5 and 6, the Director may waive all or part of a fee or may modify a fee where, in the opinion of the Director, it would be appropriate to do so. Discretion to adjust fee
- (2) The Director may charge an additional fee to comply with a person's request for rush service or to provide a special service involving extra costs. Additional charges
- 8.** (1) An issuer shall submit all applications for a marriage license received by the issuer to the Director in accordance with the direction of the Director. Submission of applications
- (2) An issuer shall, on request by the Director, provide information respecting:
 (a) the issuance of marriage licenses in the period specified by the Director;
 (b) any administrative matters related to the functions of the issuer under the Act. Provide information
- 9.** The *Marriage Act* Regulations (EC554/92) are revoked. Revocation
- 10.** These regulations come into force on July 3, 2021. Commencement

EXPLANATORY NOTES

SECTION 1 specifies that the governing authority of a religious body seeking to have members of its clergy registered to solemnize marriage in the province is to submit required information to the Director.

SECTION 2 requires that the governing authority of a religious body seeking to have a non-registered member of its clergy registered to solemnize marriage in the province is to submit a written request for registration to the Director with the contact information of the clergy and any other required information.

SECTION 3 specifies that the governing authority of a religious body recognized by the Director is to submit to the Director, on an annual basis, a list of all members and contact information of the clergy authorized to solemnize marriage in the coming year. The governing

authority of the religious body is required to notify the Director of any changes to the annual list of clergy.

SECTION 4 outlines the requirements of an applicant for a marriage commissioner's license. The section authorizes the Director to issue a license in the specified circumstances and also authorizes the Director to refuse issuance of a license, with reasons, where the applicant has not met licensing requirements.

SECTION 5 specifies the amounts of fees payable for a marriage commissioner's license and related training program and when the fees are payable. The section clarifies the application fee for a marriage commissioner's license is non-refundable.

SECTION 6 specifies the fee for the issuance of a marriage license and that it is payable to the Director.

SECTION 7 authorizes the Director to waive all or part of a fee or to modify a fee where appropriate. The Director is authorized to charge an additional fee for providing a rush or special service involving extra costs.

SECTION 8 specifies an issuer of a marriage license is to submit all applications for a marriage license to the Director and provide any information required by the Director, on request.

SECTION 9 revokes the *Marriage Act* Regulations (EC554/92).

SECTION 10 provides for the commencement of the regulations.

EC2021-503

PUBLIC DEPARTMENTS ACT TRANSFER ORDER APPROVED

Pursuant to subsection 5(1) of the *Public Departments Act* R.S.P.E.I. 1988, Cap. P-29 Council transferred responsibility for administration of the *Trails Act*, R.S.P.E.I. 1988, Cap. T-4.1 from the Minister of Economic Growth, Tourism and Culture and the Department of Economic Growth, Tourism and Culture to the Minister of Transportation and Infrastructure and the Department of Transportation and Infrastructure.

This Order-in-Council is effective June 8, 2021.

EC2021-504

WATER ACT SEWAGE DISPOSAL SYSTEMS REGULATIONS

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

INTERPRETATION

1. (1) In these regulations

Interpretation

(a) "Act" means the *Water Act* R.S.P.E.I. 1988, Cap. W-1.1;

Act

(b) "engineer" means a person who is authorized to practise professional engineering under the *Engineering Profession Act*, R.S.P.E.I. 1988, Cap. E-8.1;

engineer

- (c) “holding tank” means a closed, water-tight receptacle that is designed and used to receive and store sewage or septic tank effluent and does not discharge waste water; holding tank
- (d) “installer” means a person who is registered as an installer and holds a certificate of registration under section 5; installer
- (e) “permeable soil” means soil having a hydraulic conductivity in the range of 8.0×10^{-3} cm/s to 8.0×10^{-5} cm/s (3.1×10^{-8} in/s to 3.1×10^{-5} in/s); permeable soil
- (f) “pumper” means a person who holds a valid pumper’s licence; pumper
- (g) “pumper’s licence” means a pumper’s licence issued under section 6; pumper’s licence
- (h) “septage” means all settled solids, scum, liquid or other material removed from a septic tank or disposal field; septage
- (i) “septic contractor” means a person who holds a valid septic contractor’s licence; septic contractor
- (j) “septic contractor’s licence” means a septic contractor’s licence issued under section 3; septic contractor’s licence
- (k) “septic tank” means a watertight receptacle that receives sewage, which is designed and installed to permit settling of settleable solids from the sewage, retention of the solids and scum, partial digestion of the organic matter, and discharge of the liquid portion into a disposal field; septic tank
- (l) “sewage disposal system registration form” means a form referred to in subsection 9(2); sewage disposal system registration form
- (m) “site assessor” means a person who holds a valid site assessor’s licence; site assessor
- (n) “site assessor’s licence” means a licence issued under section 4; site assessor’s licence
- (o) “site suitability assessment” means an assessment completed on property to determine the suitability of that property for on-site sewage disposal; site suitability assessment
- (p) “site suitability assessment registration form” means the form referred to in subsection 9(1); site suitability assessment registration form
- (q) “unstabilized sewage” means sewage that has been held in a septic tank or holding tank for less than 30 days. unstabilized sewage
- (2) In these regulations, Imperial measurements are added editorially for convenience and are not intended to be relied on as exact equivalents of the metric measurements specified. Imperial measurements
- 2.** (1) The “Minimum Regulatory Requirements for the Selection and Construction of On-Site Sewage Disposal Systems on Prince Edward Island” set out in the Schedule to these regulations are hereby adopted and form part of these regulations. Schedule
- (2) Unless stated otherwise in the regulations, a septic contractor is responsible for ensuring that the requirements of the Schedule are met in respect of a sewage disposal system installed, reconstructed or modified by the septic contractor. Responsibility of septic contractor

LICENCES AND REGISTRATION

- 3.** (1) For the purpose of section 51 of the Act, a person may undertake the installation, reconstruction, modification or decommissioning of a sewage disposal system if the person holds a valid septic contractor’s licence. Septic contractor’s licence required
- (2) On receipt of an application in the form required by the Minister and the licence fee of \$250, the Minister may issue a septic contractor’s licence to an applicant who
- (a) has attended a seminar approved by the Minister;
 - (b) has completed and passed an examination administered by the Minister; and
 - (c) holds

- (i) a site assessor's licence, or
- (ii) a licence issued by another province or territory that the Minister considers to be substantially equivalent to a site assessor's licence.

(3) A septic contractor's licence expires on the date indicated on the licence, which shall not be more than two years from the date of issuance, and may be renewed on payment of the licence renewal fee of \$250.

Term of licence and renewal

(4) Subject to subsection (5), the following terms and conditions apply to a septic contractor's licence:

Terms and conditions

- (a) the septic contractor shall continuously hold a valid site assessor's licence;
- (b) the septic contractor shall attend a seminar approved by the Minister at least once every two years.

(5) Clauses (2)(c) and (4)(a) do not apply to a person who held a septic contractor's licence but not a site assessor's licence under the *Environmental Protection Act* Sewage Disposal Systems Regulations (EC625/13) immediately before the coming into force of these regulations.

Exception

4. (1) No person, other than an engineer or environment officer, shall conduct a site suitability assessment unless the person holds a valid site assessor's licence.

Site assessor's licence required

(2) On receipt of an application in the form required by the Minister and the licence fee of \$250, the Minister may issue a site assessor's licence to an applicant who

Issuance of licence

- (a) either
 - (i) has completed at least two years of post-secondary education in a related field of study, or
 - (ii) has practical experience in a related field that the Minister considers to be equivalent to the post-secondary education referred to in subclause (i); and
- (b) either
 - (i) has successfully completed a course of instruction approved by the Minister, or
 - (ii) holds a licence issued by another province or territory that the Minister considers to be substantially equivalent to a site assessor's licence.

(3) A site assessor's licence expires on the date indicated on the licence, which shall not be more than two years from the date of issuance, and may be renewed on payment of the licence renewal fee of \$250.

Term of licence and renewal

5. (1) On receipt of an application in the form required by the Minister and the registration fee of \$25, the Minister may register as an installer and issue a certificate of registration to an applicant who attends a seminar approved by the Minister.

Installer

(2) The registration of an installer expires on the date indicated on the certificate of registration, which shall not be more than two years from the date of issuance, and may be renewed on payment of the renewal fee of \$25.

Term of registration and renewal

(3) It is a term and condition on the registration of an installer that the installer shall attend a seminar approved by the Minister at least once every two years.

Seminar

6. (1) No person shall undertake the cleaning of a sewage disposal system or the disposal of septage or unstabilized sewage unless the person holds a valid pumper's licence.

Pumper's licence required

(2) On receipt of an application in the form required by the Minister and the licence fee of \$250, the Minister may issue a pumper's licence to the applicant.

Issuance of licence

(3) A pumper's licence expires on the date indicated on the licence, which shall not be more than two years from the date of issuance, and may be renewed on payment of the licence renewal fee of \$250.

Term of licence and renewal

SITE ASSESSMENT AND SYSTEM DESIGN

7. (1) This section applies where a sewage disposal system with a flow of 6,810 litres per day or less is required.

System flow 6,810 litres per day or less

(2) On completing the site suitability assessment, the engineer, environment officer or site assessor, as the case may be, shall complete a site suitability assessment registration form, file it with the Minister and pay the filing fee of \$100.

Filing of site suitability assessment registration form

(3) The septic contractor shall

- (a) determine the specifications of the sewage disposal system in accordance with the Schedule; and
(b) complete the sewage disposal system registration form, file it with the Minister and pay the filing fee of \$100.

Filing of sewage disposal system registration form

(4) Where the septic contractor alters the specifications of the sewage disposal system after filing the sewage disposal system registration form, the septic contractor shall notify the Minister, in writing, of the alterations.

Alteration of system specifications

8. (1) This section applies where a sewage disposal system with a flow greater than 6,810 litres per day is required.

System flow > 6,810 litres per day

(2) The sewage disposal system shall be designed by an engineer.

Engineer shall design

(3) On completing the site suitability assessment, the engineer, environment officer or site assessor, as the case may be, shall complete a site suitability assessment registration form and provide it to the engineer responsible for designing the sewage disposal system.

Completion of site suitability assessment registration form

(4) The engineer responsible for designing the sewage disposal system shall

Filing of forms

- (a) confirm the contents of the site suitability assessment registration form, file it with the Minister and pay the filing fee of \$100; and
(b) complete a sewage disposal system registration form, file it and the design plan with the Minister, and pay the filing fee of \$100.

(5) Where the engineer alters the design of the sewage disposal system after filing the sewage disposal system registration form, the engineer shall notify the Minister, in writing, of the alterations.

Alteration of design

9. (1) A site suitability assessment registration form shall be in the form approved by the Minister and contain the information required by the Minister, including

Site suitability assessment registration form

- (a) the lot category of the site determined in accordance with section 23 of the *Planning Act* Subdivision and Development Regulations (EC693/00); and
(b) the depth of permeable soil on the site.

(2) A sewage disposal system registration form shall be in the form approved by the Minister and contain the information required by the Minister.

Sewage disposal system registration form

INSTALLATION, RECONSTRUCTION OR MODIFICATION

10. A septic contractor shall not install a sewage disposal system unless

Installation of sewage disposal system

- (a) a site suitability assessment has been conducted in accordance with section 7 or 8; and
(b) at least 24 hours before commencing the installation,
(i) a site suitability assessment registration form and a sewage disposal system registration form have been filed in accordance with section 7 or 8, and
(ii) the septic contractor has given notice of the installation to the Minister in the manner required by the Minister.

11. A septic contractor shall not reconstruct or modify a sewage disposal system unless, at least 24 hours before commencing the reconstruction or modification, the septic contractor

Reconstruction or modification

- (a) completes a sewage disposal system registration form, files it with the Minister and pays the filing fee of \$100; and
(b) gives notice of the reconstruction or modification to the Minister in the manner required by the Minister.

12. (1) The Minister may, by order, prohibit the installation, reconstruction or modification of a sewage disposal system when, in the Minister's opinion, weather conditions or ground conditions are unsuitable.

Order due to weather or ground conditions

(2) Where a sewage disposal system is to be modified, the Minister may, by order, for the purpose of protecting public health or the environment, require the entire sewage disposal system or any part of it to be reconstructed or modified.

Order re system modification

(3) Where a septic contractor fails to provide the required notice under section 10 or 11 and the sewage disposal system has been covered following installation, reconstruction or modification, the Minister may, by order, require the person responsible in respect of the site, an engineer or the septic contractor to uncover all or part of the system for inspection.

Order to uncover system for inspection

13. A septic contractor shall ensure that the septic contractor or an installer who is employed by the septic contractor is present on site during the installation, reconstruction or modification of a sewage disposal system.

Site supervision

14. (1) Within 60 days of installing a sewage disposal system with a flow of 6,810 litres per day or less, or reconstructing or modifying a sewage disposal system, a septic contractor shall provide to the person responsible in respect of the site and the Minister, a certificate of compliance in the form required by the Minister certifying that the sewage disposal system has been installed, reconstructed or modified in accordance with the sewage disposal system registration form and these regulations.

Certificate of compliance, septic contractor

(2) Within 60 days of the installation of a sewage disposal system with a flow greater than 6,810 litres per day, the engineer responsible for designing the system shall provide to the person responsible in respect of the site and the Minister, a certificate of compliance in the form required by the Minister certifying that the sewage disposal system has been installed in accordance with the sewage disposal system registration form and design plan.

Certificate of compliance, engineer

CLEANING AND DISPOSAL

15. (1) A pumper shall, in respect of each sewage disposal system from which the pumper has removed septage, create and maintain a record in the form approved by the Minister containing the following information:

Records

- (a) the civic address where the sewage disposal system is located;
- (b) the date on which septage was removed;
- (c) the volume of septage removed on that date;
- (d) the date and location of the disposal of the septage.

(2) A pumper shall enter the information required under subsection (1) in the record for a sewage disposal system immediately after removing septage.

Entry of information

(3) A pumper shall, in respect of the sewage disposal systems from which the pumper has removed septage in a calendar year, submit a written report to the Minister, on or before April 1 of the next calendar year, in the form approved by the Minister, containing the following information in respect of each sewage disposal system:

Annual report

- (a) the civic address where the sewage disposal system is located;
- (b) the dates on which septage was removed;
- (c) the total annual volume of septage removed;
- (d) the dates and locations of disposal of the septage.

(4) A pumper shall, in respect of a record created under this section,

- (a) retain the record for a period of three years from the date on which the septage was removed from the sewage disposal system; and
- (b) make the record available immediately, on request, to an environment officer.

Duties respecting records

16. (1) A pumper shall not place septage in a holding site without the prior approval of the Minister.

Holding of septage

(2) A pumper shall not dispose of unstabilized sewage or septage except through a wastewater treatment system approved by the Minister.

Disposal of
unstabilized sewage
or septage

DECOMMISSIONING

17. (1) For the purposes of this section, a sewage disposal system is abandoned if it is disconnected from all sources of sewage on the property served by the sewage disposal system.

Abandoned septic
tank

(2) The person responsible for a property served by a sewage disposal system that has been abandoned shall ensure that the sewage disposal system is decommissioned, in accordance with this section, by a septic contractor within 30 days after the sewage disposal system is abandoned.

Duty of person
responsible for
property

(3) A septic contractor shall decommission an abandoned sewage disposal system by

Decommissioning

(a) removing the contents of the septic tank, disinfecting the septic tank and filling the septic tank with clean soil fill; or

(b) removing the septic tank, disinfecting the resulting excavation and filling the excavation with clean soil fill.

(4) Where a septic contractor decommissions an abandoned sewage disposal system, the septic contractor shall notify the Minister in writing within 60 days of the decommissioning.

Notification to
Minister

GENERAL

18. On and after the commencement of these regulations, a reference in an enactment to the *Environmental Protection Act Sewage Disposal Systems Regulations (EC625/13)* is deemed to be a reference to these regulations.

Former regulations

19. These regulations come into force on June 16, 2021.

Commencement

SCHEDULE

Minimum Regulatory Requirements

for

On-Site Sewage Disposal Systems

on

Prince Edward Island

Appendix 'A'

Section 1 Standards for Selection of On-Site Sewage Disposal Systems

1.1 Introduction

The specifications for a sewage disposal system with a flow of up to 2,270 L/day, for a residential unit with up to five bedrooms, can be selected from **Table 1.1** and selection tables in **Appendix D (Disposal Field Length Selection Table)** once the soils of the area have been categorized.

Septic tank and disposal field sizing requirements for a sewage disposal system with a flow from 2,271 L/day up to 6,810L/day can be determined using the **Design Flow Table (Appendix B)** and the **Disposal Field Length Selection Table (Appendix D)**.

Sewage disposal systems with a flow rate greater than 6,810 L/day (1,500 lgal/day) shall be assessed and designed by an engineer.

1.1.1 Definitions

alternative multiple trench disposal field - means a multiple trench disposal field oriented across the slope of a property with lateral spacing of no less than 4 metres (13 ft) between the lines;

ANSI – means the American National Standards Institute;

barrier material - means a light weight (50 g/m² or more) nonwoven (i.e. felted, needle punched or heat bonded fibre) fabric or proprietary geotextile with a permeability greater than 0.001 m/s (0.04 in/sec) and an opening size of less than 700 µm (0.028 in);

bedrock – means a solid or continuous body of rock, with or without fractures, or a weathered or broken body or rock fragments overlying a solid body of rock;

capacity - means the liquid capacity of a septic tank between the waterline and the floor of the tank;

Category I, II, III, IV or V – means the lot category determined in accordance with the Subdivision and Planning Act Regulations made under the *Planning Act*;

certified – means guaranteed by a Standards Council of Canada Accredited Testing Agency as being in conformance with the latest CSA Standard pertinent to the application of the product;

contour trench disposal field - means a relatively narrow and shallow disposal bed constructed in a trench of constant depth, with both the trench bottom and the lip of the trench wall at the ground surface horizontal throughout the entire length (*see Sections 1.10.6 – 1.10.8*);

CSA – means the Canadian Standards Association;

disposal field - means that part of an on-site sewage disposal system designed and installed in accordance with these regulations for the subsurface distribution of septic tank effluent into the soil;

drainage pipe - means the certified, perforated, rigid, straight, sewer pipe used in a disposal field;

dwelling - means a building or portion thereof designed, arranged or intended for residential occupancy;

dwelling unit – means two or more rooms used or intended for domestic use of one or more individuals living as a single housekeeping unit with cooking and sanitary facilities;

effluent - means sewage after it has passed through a septic tank or some other type of treatment;

effluent line - means a pipe that transports effluent from a septic tank to a disposal field;

existing parcel - means any parcel in existence prior to June 12, 1993;

filter sand - means clean, washed, screened or natural sand having less than 10% by weight retained on a 10 mm (3/8 in) sieve and less than 2% by weight passing a 0.075 mm (#200 US std.) sieve and the permeability of the sand must be not less than 0.0004 m/s (0.0013 ft/s);

good quality fill – means fill composed of a reasonably uniform sand or sandy gravel and possibly a small proportion of silt/clay where no more than 30 % of the material shall be retained on a 10 mm (3/8 in) sieve and a minimum of 2.5 % and a maximum of 15% passing the 0.075 mm sieve (#200 US std.);

gravel - means clean, washed or screened small pieces of rock or crushed rock of a consistency or hardness which is not conducive to premature deterioration, and of which 98% by weight shall pass a 40 mm (1½ in) screen and 98% by weight shall be retained on a 12.5 mm (½ in) screen;

grease interceptor tank - means a tank installed in front of the septic tank to remove grease, oil and fats from sewage;

header - means pipe used to connect the ends of lines of drainage pipe or leaching chambers;

leaching chamber - means a prefabricated device approved by the authority having jurisdiction for use in a disposal field as an alternative to gravel and drainage pipe;

leaching chamber disposal field - means a system of leaching chambers arranged in a multiple trench configuration (*see Section 1.10.5*);

liquid depth - means the maximum vertical depth of liquid which a septic tank can contain before the liquid discharges through the septic tank outlet;

multiple family dwelling - means a building containing three or more dwelling units;

multiple trench disposal field - means a system of drainage pipes and gravel arranged in the form of narrow, parallel trenches connected to a header (*see Section 1.10.3*);

NSF – means the National Sanitation Foundation;

natural boundary – means the visible high water mark of any stream, river or other body of water;

permeable soil (natural) - means soil having a hydraulic conductivity in the range of 8.0×10^{-3} cm/s to 8.0×10^{-5} cm/s (3.1×10^{-8} in/s to 3.1×10^{-5} in/s);

pressure distribution system - means a distribution system designed such that a pump or siphon supplies septic tank effluent to non-perforated pipe that is drilled with holes of such diameter and spacing that the top header, full length of all interconnecting pipes, and the bottom header are under a positive pressure;

sewer line - means a pipe that transports sewage from a building to a septic tank or a sewer collection main;

standard disposal field - means a multiple trench or alternative multiple trench disposal field;

top header - means the first header of each disposal field to receive effluent from the septic tank (see Figure 1.9);

waterline - means the maximum elevation of the liquid in a septic tank;

water table - means the level at which water stands in a shallow well open along its depth and penetrating the surficial deposits just deeply enough to encounter standing water in the bottom (level of water in saturated soil where hydraulic pressure is equal to zero).

1.2 Building Sewers

A building sewer for a single unit dwelling is defined as the part of the building drainage system carrying sewage that extends from the septic tank or public sewer to a point 900 mm to 1500 mm out from the foundation wall. The building sewer shall be installed with the following conditions:

1. Minimum 100 mm diameter pipe, non-perforated, rigid, smooth bore, watertight joints with gaskets or solvent welded, DR35, certified to CSA B182.2-15 standards.
2. Laid straight on a grade not less than two per cent.
3. If a change in direction is needed the fittings shall consist of certified, long sweep fittings. The use of these fittings should be limited.
4. Located a minimum 0.5 metres from any potable water service line.
5. Located a minimum of 3.0 metres from a domestic water well.
6. Cleanouts extended to the ground surface shall be provided at intervals of not more than 30 m, if the length of the building sewer exceeds 60 m or any direction change greater than 90 degrees.
7. Install pipe and fittings according to manufacturer's recommendations.

1.3 Septic Tanks and Effluent Lines

The following requirements shall apply to any tank that is selected or designed for use as a septic tank, with respect to construction standards, selection criteria and setback requirements:

1. The septic tank shall be designed to carry a minimum of 600 mm of earth cover.
2. All materials shall be installed according to the manufacturer's recommendations. These recommendations shall be submitted to the Minister by the manufacturer.
3. The manufacturer of a prefabricated tank shall provide to the installer instructions for assembly and installation of the tank. These instructions shall detail the entire installation process to ensure that the tank is watertight. These instructions shall include, but not limited to, the preparation of excavation, installation of tank, backfilling of tank, connection detail of inlet/outlet piping, etc.
4. The instructions shall be submitted to the Minister for review to assure that they address the requirements of these Standards.
5. Concrete septic tanks shall be constructed to conform to CAN/CSA B66-10(R2015) standards. Polyethylene and fiberglass septic tanks shall be certified to CAN/CSA B66-10 (R2015) standards.
6. All septic tanks shall be watertight.

7. All septic tanks shall have risers installed as outlined in the appropriate sections. As a minimum an access riser shall be installed over the outlet and in each chamber, if the tank has multiple chambers.
8. Where a tank is installed in an area where high groundwater levels may occur, the manufacturer shall include instructions to prevent flotation of the tank.
9. A sectional pre-fabricated tank may be assembled on site, provided that the manufacturer's instructions are followed to produce a watertight tank.
10. Where a tank is manufactured from concrete, the bung hole must be sealed in a watertight manner.
11. The tank shall be tested for water tightness on site after assembly.
12. All septic tanks shall be installed in accordance with the separation distances outlined in **Appendix C, Table C1**.
13. All septic tanks shall be equipped with a tamper resistant lid labeled "DANGER – DO NOT ENTER".
14. All septic tanks shall be equipped with an effluent filter certified to NSF/ANSI 46-2014 standards.
15. A septic tank manufactured on-site shall be designed by an engineer and conform to applicable CSA Standards.

1.3.1 Septic Tank Sizing

Any septic tank is required to meet the following sizing requirements: (**Figure 1.1** - Septic Tank)

1. Septic tanks for dwellings must have a capacity not less than that stated in **Table 1.1**.
2. For larger systems the minimum capacity shall be calculated as follows:

For peak average daily flows up to 6810 L/day:

$$\text{Tank Volume(TV)} = 2 \times \text{Q}$$

Where: Q – peak average daily flow in litres (L/day)
TV – liquid volume of septic tank in litres (L)

The minimum required septic tank size is 3,400 L. Septic tank sizes larger than the required minimum may reduce problems and extend the life of an on-site system.

Septic tank capacity shall be increased by 25 per cent where a garbage grinder is used.

Access to a tank shall be provided over the inlet and outlet for easier service. The dimension of any opening shall meet latest CSA standards.

All septic tanks shall be fitted with a riser located at the outlet of the septic tank.

All outlets of septic tanks shall be equipped with an effluent filter (**Figure 1.2**) sized to manufacturer's recommendations.

The septic tank shall be installed according to the manufacture's recommendations.

Two compartment tanks are required when the daily flow exceeds 4,100 L to reduce solids carry-over to the disposal field. Each compartment shall have an access riser for purpose of maintenance that extends to the ground surface as outlined in the riser section.

The interconnecting port in the divider should be located approximately one-half way in the liquid depth.

The final compartment should be approximately one-third of the total volume.

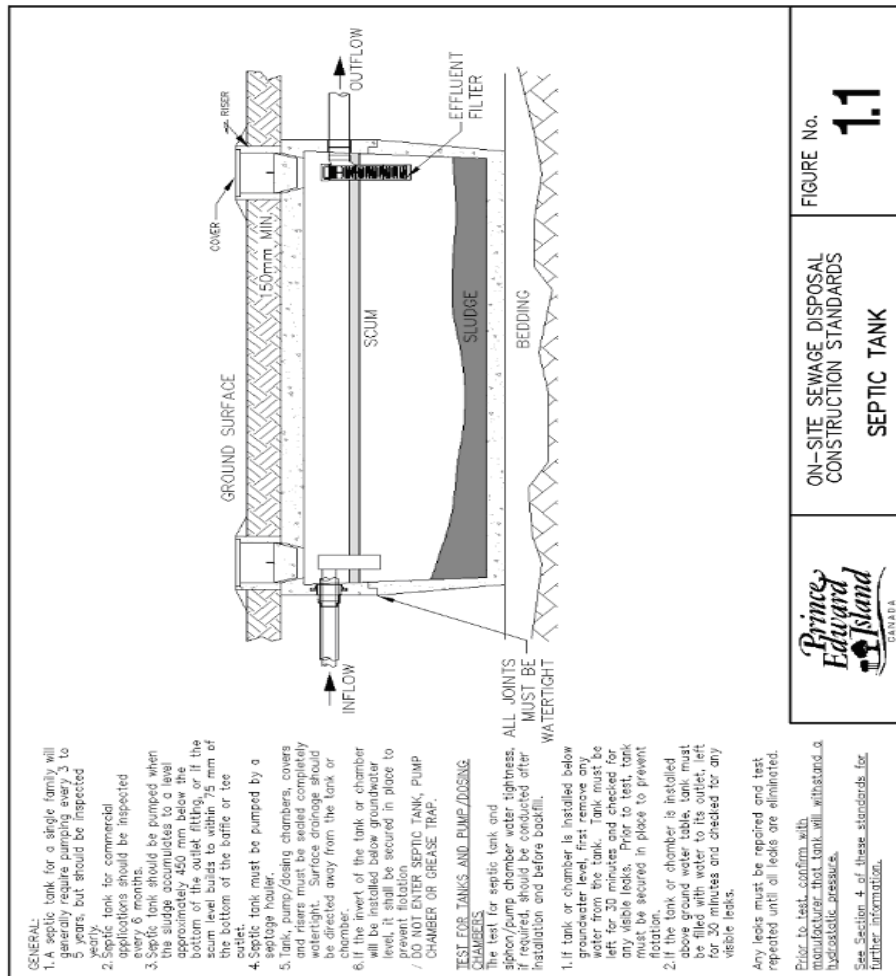


Figure 1.1 Septic Tank

Table 1.1 Minimum Capacity of Septic Tanks for Dwellings

Number of Bedrooms	Minimum Liquid Capacity in litres
Up to 3	3,400
4	4,090
5	4,500

When selecting a tank, the depth of bury must be considered. If it is greater than 600 mm, the tank should be stamped to indicate that it has been designed to withstand burial to the required depth.

1.3.2 Effluent Line

The effluent line, which is the pipe that allows effluent to move from the septic tank to the distribution field, can be fed by a gravity distribution system or a pressure distribution system.

The following are the requirements of each:

1.3.3 Gravity Effluent Line Requirements

1. A gravity line shall be a PVC DR35 100 mm pipe, solvent welded or gasket, non-perforated, rigid, smooth bore and watertight, and shall be certified to CSA B182.2-15 standards.
2. A gravity line shall have watertight joints.
3. A gravity line shall have a grade not less than one per cent.

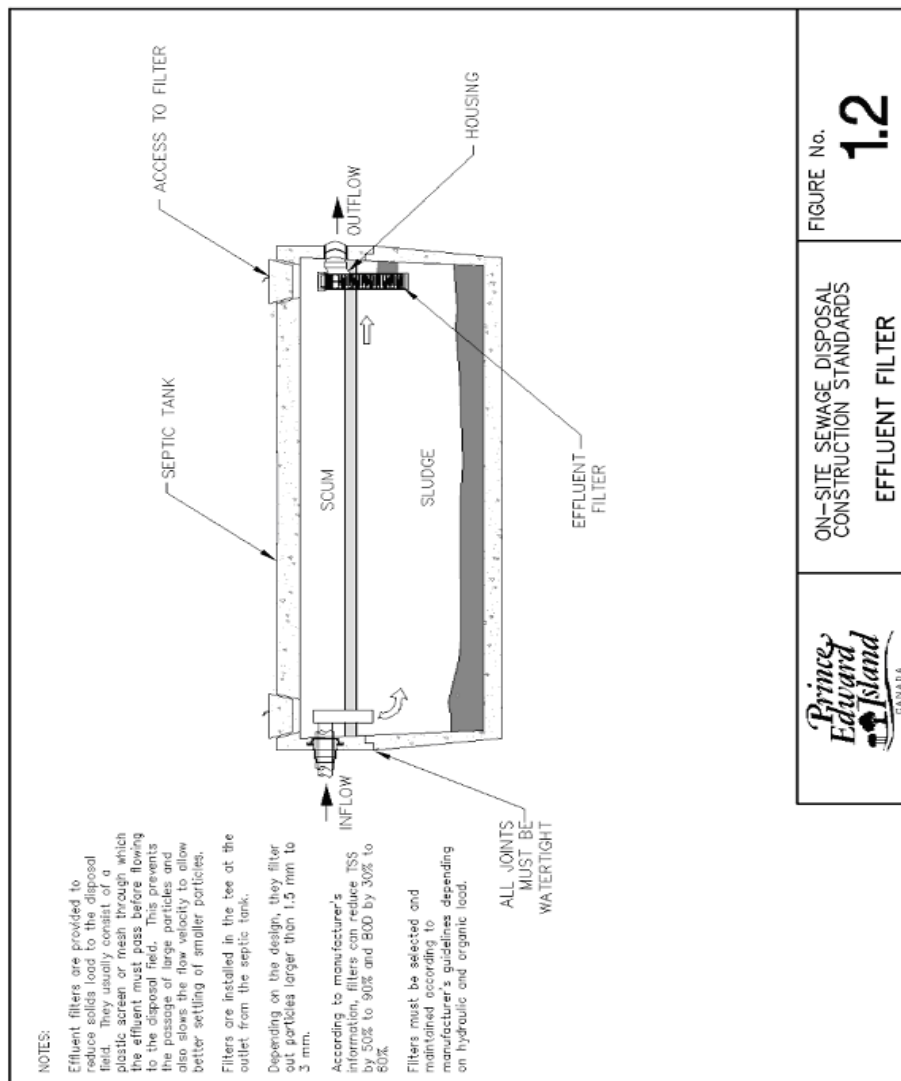


Figure 1.2 Effluent Filter

1.3.4 Pressure Effluent Line Requirements

1. Pressure line shall be a 38 mm minimum (1.5 inch) diameter pipe, non-perforated, rigid, smooth bore, watertight, PVC SDR 26, and shall be certified to CSA B137-2013 standards.
2. The joints of the pressure pipe shall be watertight and installed according to the manufacturer's recommendations.
3. Provide appropriate freezing protection methods such as adequate depth of cover, insulation and/or draining of effluent lines after each pump cycle stops.
4. Pressure line to the tank (if necessary) shall be a minimum of 3 metres from a domestic water well.

1.3.5 Pressurized System Pipe Requirements

A pressurized system is more effective than a gravity system as it provides both uniform distribution and periodic dosing of the disposal field. The disadvantage of a pressurized system is the higher capital cost and the extra maintenance requirements associated with the pump or dosing chamber. Pressurizing using a pump or dosing chamber is required:

- where an end fed disposal line is longer than 30.5 linear metres
- where the one disposal bed exceeds 152.4 linear metres
- where the natural ground slope is not uniform and a gravity system might concentrate effluent at one or more weak spots in the field
- for any system where the disposal field is at a higher elevation than the septic tank

Where a pump or dosing chamber is required, the solid pipe from the pump or dosing chamber to the disposal field must have a minimum diameter as specified by the pump or siphon manufacturer but shall not be less than 38 mm. Piping within the dosing chamber and extending 1 metre from chamber shall be schedule 40, certified to CSA B137 Series 2013 standards. All pumped systems shall be connected to the disposal field using a “siphon breaker” as shown in Figure 1.4.

For any system selected to serve a single family home using a pump or dosing chamber, the perforated pipe in the distribution field can be similar to gravity distribution pipe (Subsection 1.3.4) with only a 13 mm hole drilled in the top of the pipe 100 mm from the end cap(s). In addition the distribution piping must be placed such that there is no slope on the piping in the disposal trench.

For systems serving more than 6810 L/day (designed by an engineer), the pipe diameter, and hole spacing must be calculated, based on the system hydraulics, in an effort to provide uniform distribution throughout the disposal field. Maintain a minimum 600 mm of head at the most distant orifice. In a designed system the minimum acceptable pipe diameter is 38 mm. The design shall allow for distribution pipe to drain after the completion of each dose.

1.4 Pump and Dosing Chambers

The pump or dosing chamber discharge capacity must be sized to distribute effluent over the entire disposal field during each dose. This allows utilization of the entire field and minimizes the possibility of breakout of effluent in a localized area. Periodic dosing also allows the infiltrative surface to drain between doses. These cycles of alternate dosing and resting may maintain higher infiltration rates in the clogging mat and thus extend the life of the system.

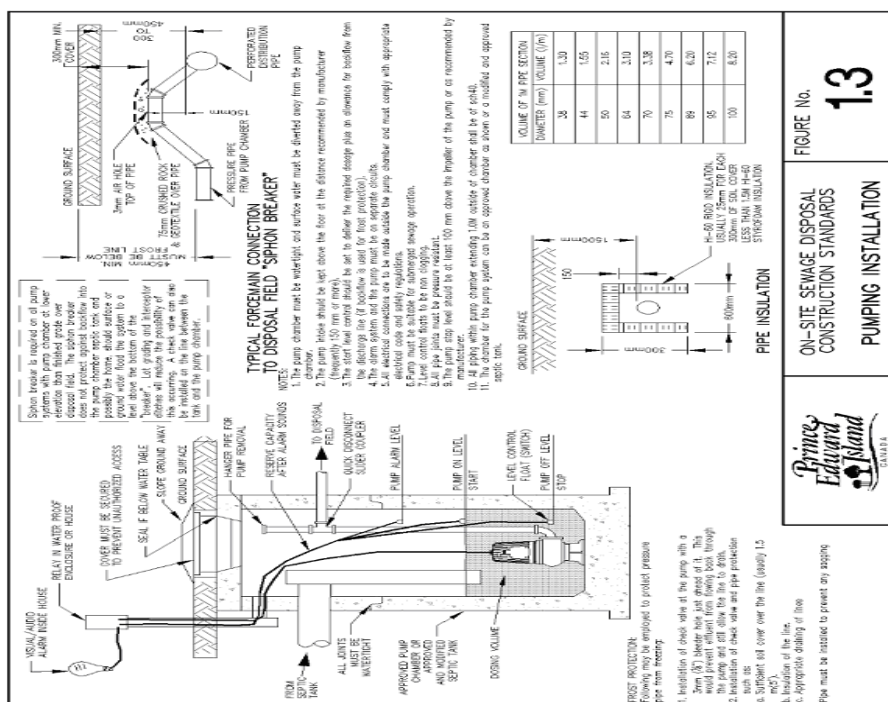


Figure 1.3 Pumping Installation

Where a dosing system is used the minimum dosing frequency is at least two times per day. When a large system is designed, other dosing frequencies may be necessary. The discharge volume must be large enough to flood the entire distribution pipe. Unless the Septic Contractor or Engineer specifically selects the pump to be used, it is the installer’s responsibility to ensure that the pump has the proper capacity of achieving equal distribution throughout the field.

FIGURE No. 1.3

ON-SITE SEWAGE DISPOSAL CONSTRUCTION STANDARDS PUMPING INSTALLATION

Prince Edward Island
DANIELA

1. Insulation of check valve at the pump, with a 3mm (3/8") bladder may not exceed 4. This would prevent effluent from flowing back through the pump and still allow the line to drain.

2. Installation of check valve and pipe protection.

3. Subsequent seal cover over the line (PART 1.5 n.c.).

4. Insulation of the line.

5. Appropriate drilling of line.

Pipe must be installed to prevent any seepage.

1.4.1 Dosing Systems

There are two types of dosing systems:

High Pressure Systems provide a calculated residual head (squirt height) throughout the entire distribution network within the disposal field. The piping network continues throughout the entire disposal field and is typically 50 mm in diameter depending upon system type, hydraulics and manufacturer's recommendations. This pipe can be laid on the gravel bed or adequately suspended in a chamber system. These systems shall be designed by an engineer.

Low Pressure Systems (Figure 1.4) provide pressure typically through a 50 mm force main (SDR 26 or equivalent) to a point whereby the pipe diameter size is increased to 100 mm. At this point the flow from the pump converts to gravity flow. Typically, the method to convert the high pressure flow to low pressure flow is at the entrance to the disposal header of the system. The 50 mm pressure line is connected to the header at the centre of the header. At this point the diameter of the line changes to 100 mm. This type of pressure installation is more common in residential and smaller commercial installations. When used in conjunction with a chamber system energy dissipation device such as a patio stone should be used at the entrance to each disposal line. Care is required when selecting the pump system to ensure that there is adequate total hydraulic head to overcome the system head (vertical distance between the lowest liquid elevation in the pump tank and the highest point within the system and any friction losses of the pipe, fittings, valves, etc.)

1.4.2 Pumping Chamber Requirements & Sizing

A typical pump chamber is shown in **Figure 1.3**. Concrete tanks shall conform to CSA B66-10 (2015) standards. Polyethylene and fiberglass tanks shall be certified to CSA B66-10 (2015) standards. Reinforced concrete manholes shall conform to ASTM C478M standards and shall have a minimum diameter of 760 mm.

Requirements for a pump chamber include the following:

1. The chamber shall be equipped with an audible and visible high level alarm, level controls, and other accessories required to assure effective and reliable operation.
2. A riser access shall be installed over the pump(s) for maintenance purposes.
3. The dimension of any opening shall meet CSA requirements and allow easy repair of pumping system.
4. All pumps shall be accessible and set to permit maintenance of pumping system without entering the pumping station.
5. The pump system shall accommodate the automatic start, stop and alarming of system based on the water level of the pump tank.
6. The pump system shall alternate pumps in a multiple pump system.
7. The elevation of the tank shall be such that any horizontal seam is located above the highest seasonal groundwater table or as recommended by the manufacturer.
8. The high water alarm level must be below the level of the horizontal seam. It is recommended that the ***pump chamber should be tested on site after assembly, for water tightness, proper operation and dosing quantities.***

The actual design of a pressure distribution system is based upon hydraulic principles and is beyond the scope of these Standards. In an attempt to simplify selection and standardize equipment requirements for single family homes, the required dosing capacity for siphons and pumps is as shown in **Table 1.2**.

Table 1.2 Dosing Chambers and Pumps/Siphons - Capacity

Flow	Dosing Amount per Discharge Event in Litres	Minimum Pump Chamber Capacity*
1000 L	500 L	1000 L
1350 L	675 L	1350 L
1500 L	750 L	1500 L

* below any horizontal seam

When pumping a considerable distance, the dosing amount and chamber size may have to be increased to compensate for effluent in the pump line returning to the pump chamber after the pump shuts off.

1.4.3 Siphon Breaker

This section specifically addresses pressurized systems for delivery of septic tank effluent to a distribution system in a disposal field. When pumping down slope, the connection is to be made directly into the distribution pipe. If pumping upslope, a siphon breaker is required. The siphon breaker should be located where the pipe from the tank enters the distribution pipe. As well, one 13 mm hole should be placed 150 mm in from each end of the distribution pipe on the top of the pipe (Figure 1.5).

1.4.4 Mechanical-Electrical System

The complete electrical and mechanical system including pumps, controls, and switches must be capable of functioning effectively, reliably, and for many years, in a corrosive environment. These systems shall be installed according to the Canadian Electrical Code Requirements.

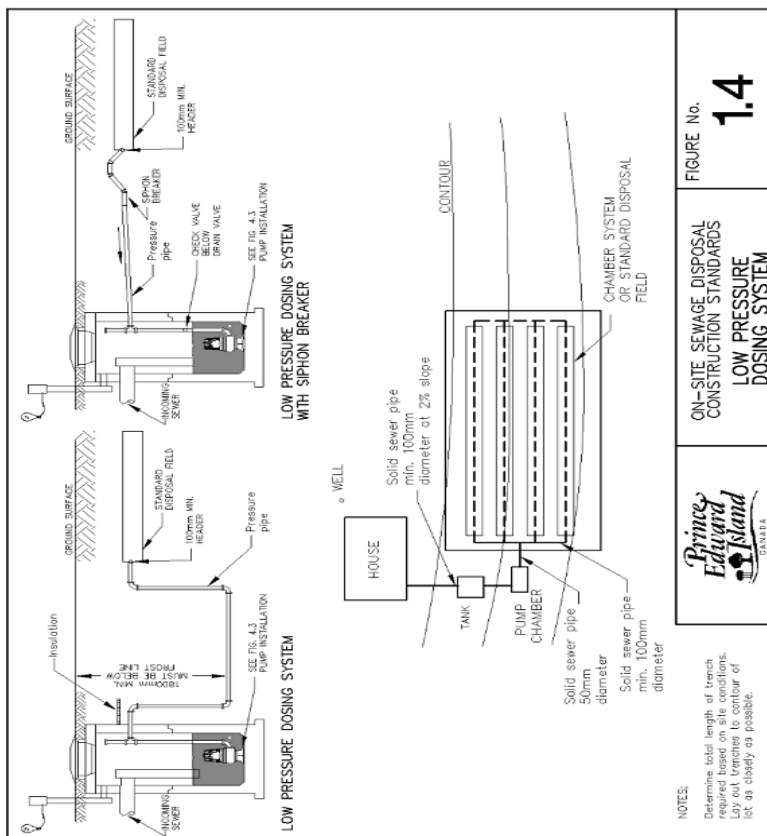
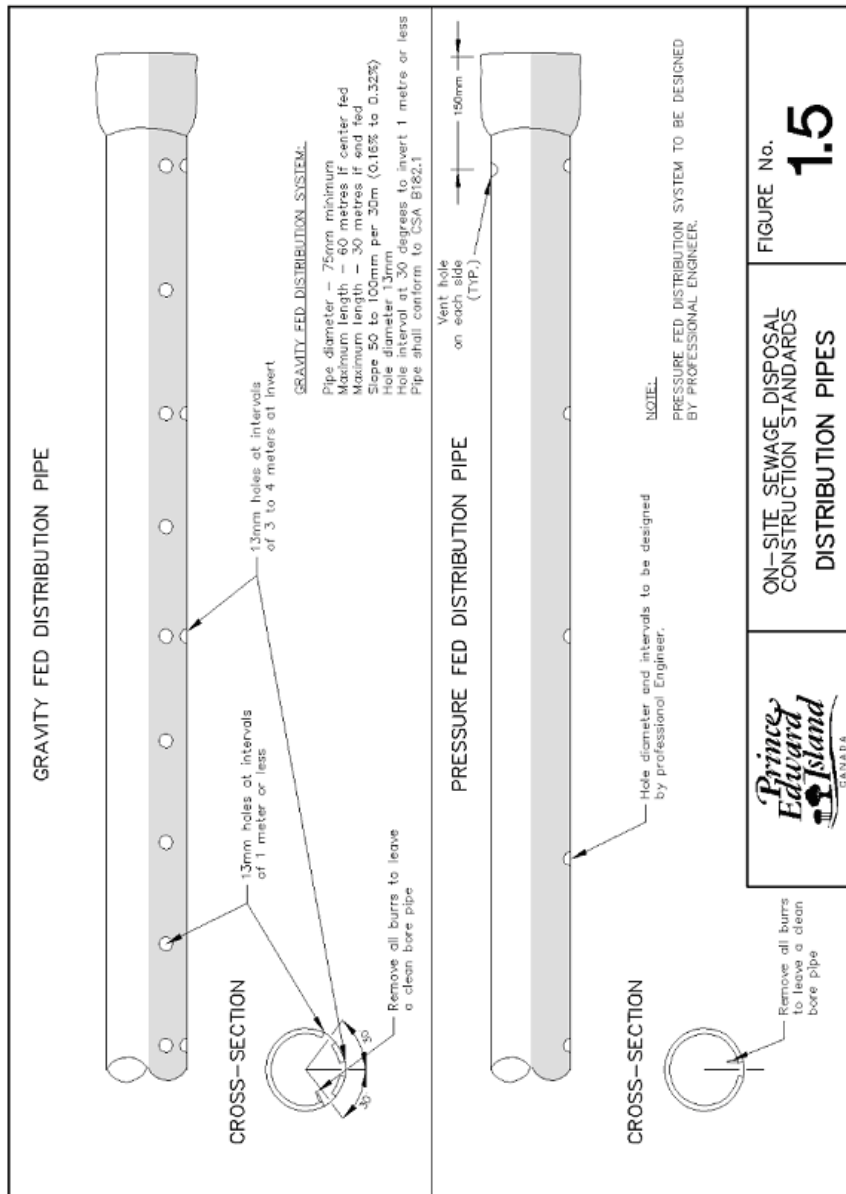


Figure 1.4 Low Pressure Dosing System



ON-SITE SEWAGE DISPOSAL CONSTRUCTION STANDARDS

Prince Edward Island
CANADA

FIGURE No. **1.5**

DISTRIBUTION PIPES

Figure 1.5 Distribution Pipes

1.5 Holding Tanks (Figure 1.6)

Once the tank is full the material must be pumped out of the holding tank(s) by a Pumper and transported to a Wastewater Treatment Plant for final treatment.

Typically, the frequency of the pump out is 5 to 7 days. The operating costs for this type of system can be expensive depending on water use. Water usage can be reduced with the installation of low flow fixtures such as six (6) litre toilets and low flow shower heads. This option should be carefully reviewed prior to installation so that the owner is fully aware of the ongoing operating cost.

Although the design and installation of a holding tank is similar to that of a septic tank, several additional considerations do exist and are outlined in **Table 1.3**.

Table 1.3 Holding Tank Considerations

Holding Tank	Considerations
Minimum Size (Residential)	4,540 L
Minimum Size (Commercial)	6,810 L or 2 days storage, whichever is greater
Discharge	No surface discharge allowed
Alarm System	Positioned to allow for ½ day storage after activation
Accessibility	Must be readily accessible to pumping vehicle
Location	Surface water diverted from tank area
Water Use	Water use should be reduced.

The incremental costs of a large tank are minor compared to the cost of pumping over a long period of time. A small sized tank will require more frequent pumping and higher costs whereas a larger tank will require less pumping trips resulting in a lower cost in the long term. Maintenance and operating costs are substantially higher than operation of a regular sewage disposal system. The homeowner must understand that these costs are very high and that such costs may not be sustainable. Therefore, due to the costs, the use of a holding tank is only recommended as a last resort for on-site sewage treatment.

The installation of a holding tank is an option for servicing given that one of the following conditions exists:

- in the opinion of the Minister, no practical alternative for the construction of a disposal field exists;
- the sewage holding tank is to be installed for commercial use and, in the opinion of the Minister there is no practical alternative for the installation of a disposal field.

A septic contractor shall install a holding tank that complies with the manufacturer's recommendations and these Standards.

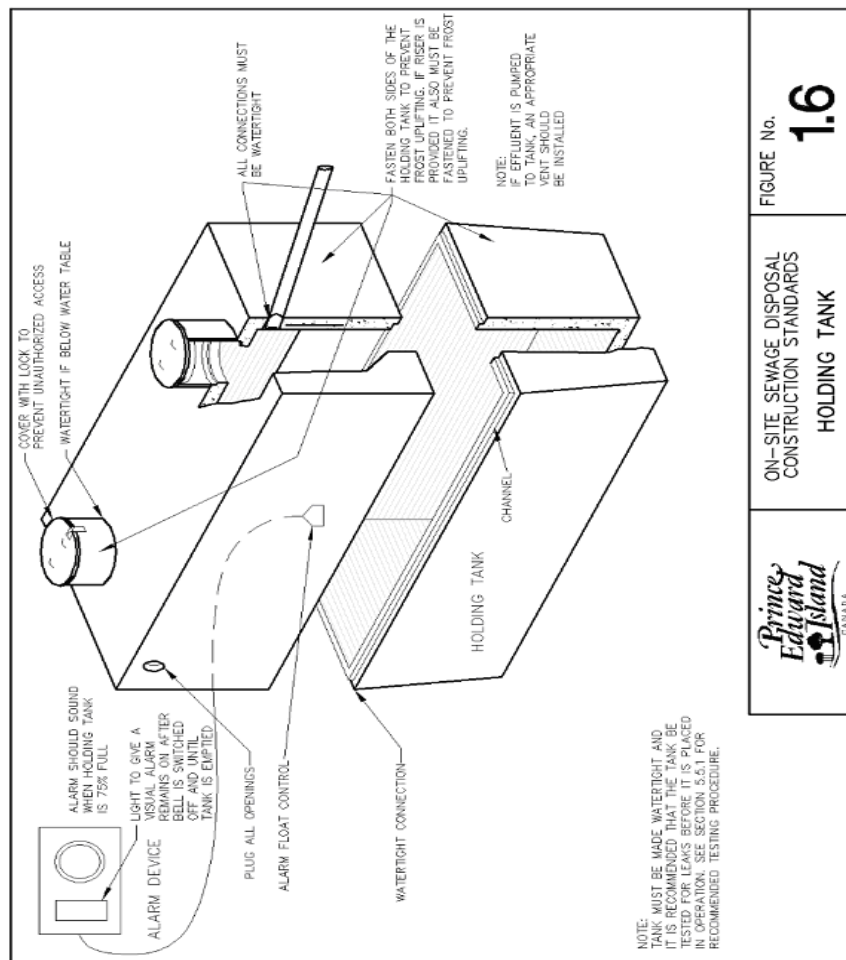


FIGURE No.

1.6ON-SITE SEWAGE DISPOSAL
CONSTRUCTION STANDARDS
HOLDING TANK

Figure 1.6 Holding Tank

1.5.1 Requirements for a Holding Tank

1. The requirements for a holding tank (**Figure 1.6**) are as follows:
 - Volume is calculated as having twice the maximum expected daily flow as calculated in **Appendix B**.
 - Minimum capacity of 4,540 L for residential use and 6,810 L for commercial use.
 - Equipped with an audible and visible high level positioned so that it alarms at $\frac{3}{4}$ mark of the liquid capacity of the holding tank.
 - Be readily accessible to a pumping truck.
 - Be equipped with a riser over the inlet of the holding tank.
 - Where a tank is installed in an area where high groundwater levels may occur, the manufacturer shall include instructions to prevent flotation of the tank.
2. The holding tank shall be installed according to the manufacture's recommendations.
3. The proposal for a holding tank should include estimated yearly pump out costs from a Pumper.
4. A below ground tank shall be constructed of a non-metallic material.
5. A holding tank may be utilized for **above ground** services for an industrial/commercial operation, with the following requirements:
 - a. the tank shall be constructed of non-corrodible material;
 - b. secondary containment shall be supplied (dykes, berms, etc);
 - c. adequate weatherproofing shall be provided to prevent freezing in the tank or lines;
 - d. the tank shall be supplied with adequate hold down and support systems;
 - e. the inlet shall be on the top of the tank and the inlet line shall be self-draining;

- f. drain valves shall be locked when not in service or security in the form of a fence is provided;
 - g. the tank vent shall be equipped with an odor control device or is extended sufficiently above grade to eliminate odors at ground level;
 - h. the tank shall be installed in accordance with these Standards and the regulations.
1. Holding tanks shall be tested on site after assembly for water tightness.
 2. Concrete holding tanks shall be constructed to conform to CSA B66-10 (2015) standards. Polyethylene and fiberglass tanks shall be certified to CSA B66-10 (2015) standards.

1.5.2 Riser and Lid

1. A single compartment septic, holding or pump tank shall have a riser section that
 - a. is installed over the outlet opening of the top of the septic tank
 - b. has a watertight seal where it joins the tank
 - c. raises the outlet opening sufficiently to prevent flooding by surface water
 - d. is equipped with a secure tamper resistant locking mechanism with lid
 - f. lid to the riser provides watertight connection
 - g. is labeled clearly **“DANGER – DO NOT ENTER”**
2. A multiple compartment septic, holding or pump tank shall maintain the above requirements and shall have a minimum of one riser section located over each compartment.
3. Refer to **Figure 1.6** for construction details
4. All riser and lid sections shall be installed according to the manufacturer’s recommendations.
5. Riser installation procedures shall be submitted by the manufacturer of the septic, holding or pump tanks.

1.6 Interceptors

Interceptors are installed to intercept and divert surface water and groundwater upslope of a disposal field. An interceptor may be a trench filled with gravel, and containing a perforated pipe, or a swale (shallow trench) at the ground surface (**Figure 1.7**). Situations in which interceptors are required, and their locations relative to the ground surface, are defined in this Section.

1.6.1 Interceptor Trench

An interceptor trench may be required or considered in order to address the following situations:

- (1) intercept and divert perched groundwater over a layer of impermeable soil;
- (2) lower a seasonally high groundwater table upslope of a system that is located at lower end of a long slope;
- (3) intercept and divert surface water.

In situation (1) the base of the trench should be set at least 150 mm into any impermeable layer.

In situation (2) the depth of the trench should be a minimum of 150 mm below the bottom of the distribution field. In some cases this could result in an interceptor depth of up to 2 meters or more.

In situation (3) a trench intended to intercept groundwater may also intercept surface water, or a trench (french drain) may be intended specifically to intercept and divert surface water. In the latter case the trench should be at least 300 mm deep.

The interceptor trench should be 0.3 to 0.6 m in width and be filled with gravel. It may contain a perforated pipe with a slope. The trench must be sloped and sod placed where it is practical.

Any interceptor trench must be long enough to divert the intercepted water to a point where it will not enter the disposal system and to where it will freely discharge to the surface, well down slope of the disposal field. It is recommended that the discharge point for the interceptor extend a minimum of 6 metres down slope of the disposal field or buffer. It is recommended that interceptors be located 5 to 10 metres upslope of the distribution field and that they pass no closer than within 5 metres of the end of the disposal field. If these separation distances cannot be achieved, it may be necessary to use impervious fill, such as compacted clay or bentonite, to ensure that surface/ground water does not enter the disposal field or have sewage enter the interceptor.

If the trench is to intercept surface water either the gravel should be carried to within 50 mm of the surface (with no final cover material or sod) to allow surface water to enter the trench, or a swale should be included at the surface. The option of no final cover material may not be practical if there is a danger that sediment from upslope sources may clog the surface of the gravel.

A swale should be at least 0.3 m deep and 0.6 m wide, and sodded with sloping sides to permit mowing.

The length of any swale must be enough to divert the intercepted water to a point where it will not enter the disposal system and be sloped down and beyond the system.

1.7 Grease Chambers

Grease chambers usually are not necessary on kitchen waste lines from residential development. However, in some commercial/institutional applications such as restaurants, school cafeterias and kitchens at summer camps, grease chambers **are required**. For the purpose of these Standards, a grease chamber is a chamber where grease floats to the surface while the cleaner water underneath is discharged to the septic tank. If this grease is not removed prior to entering the septic tank, large quantities may accumulate in the sewer and may block the building sewer or the effluent line to the disposal field, or the disposal field itself.

The small grease traps found on some commercial/institutional kitchen drains are not considered adequate to protect the disposal system. The liquid volume of the grease chamber must be large enough to permit the water to cool allowing the grease to separate and rise to the top of the grease tank.

The volume of a grease chamber shall be calculated using the following equation:

For Restaurants:

$$V_{\text{grease}} = D * (HR/2) * GL * ST * LF$$

Where: D - number of seats in dining area

HR - number of hours open per day

GL - gallons of wastewater per meal (2 or more)

ST - Storage capacity (normally 2)

LF - Loading factor depending on restaurant location

1.25 - central locations

1.0 - recreation areas

0.5 to 0.8 - other locations

For Cafeterias or Institutional kitchens:

$$V_{\text{grease}} = M * GL * ST * LF$$

Where: M - Total number of meals served per day

GL - Gallons of wastewater per meal (2 or more)

ST - Storage capacity (normally 2)

LF - Loading factor

1.0 with dishwasher

0.5 without dishwasher

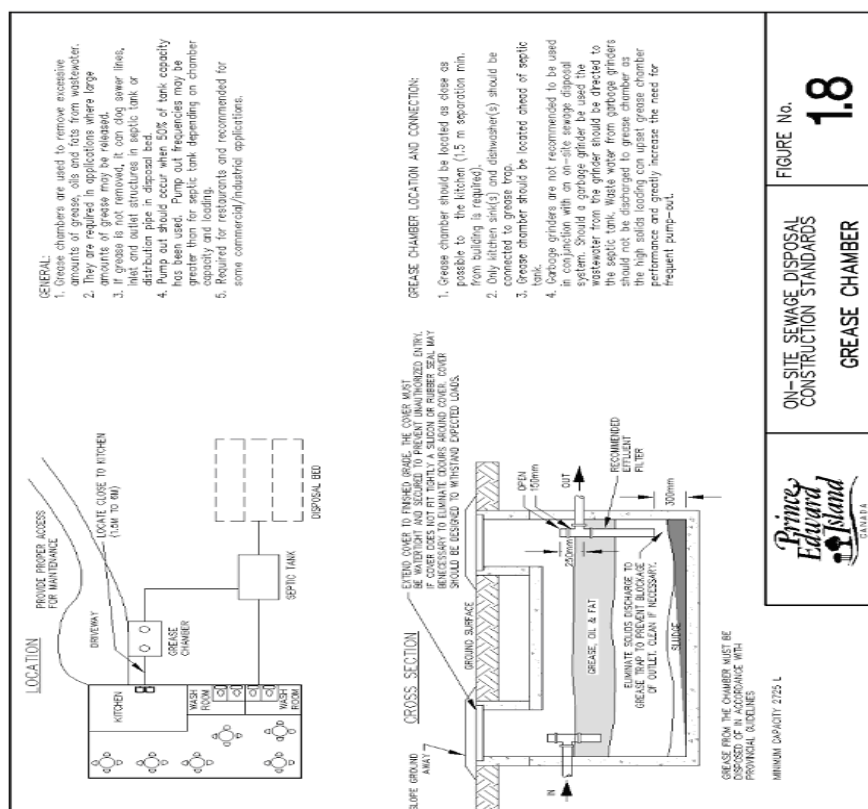
For all but large establishments, a converted 2,725 litre septic tank would have adequate capacity to serve as a grease chamber and may be the most economical solution even if it has more than the minimum required capacity. To convert a septic tank to a grease chamber, a tee can be installed on the outlet and extended to be 300 mm above the tank bottom (**Figure 1.8**).

To allow for proper maintenance, clean out covers shall be extended to finished grade. The cover shall be watertight and secured to prevent unauthorized entry. To minimize problems with grease solidifying in the sewer line the chamber should be located close to the building but not closer than 1.5 m, no more than 10 m from the fixture being served, and on undisturbed earth or compacted fill material..

1.8 Final Cover Material

The complete on-site sewage disposal system shall be covered with a layer of soils that will promote the growth of vegetation over the system.

The material used to cover on-site sewage disposal systems is referred to as final cover material and will consist of: A) Imported, manufactured or site prepared material consisting of friable sandy silt or silty sand with a 4 to 25% organic matter content. The material must be free of debris, vegetation, and roots, with no stones greater than 25 mm in size. The material used shall be capable of supporting grass or similar vegetation.



ON-SITE SEWAGE DISPOSAL
CONSTRUCTION STANDARDS
GREASE CHAMBER

FIGURE No.
1.8

Prince
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Island
SURREY

Figure 1.8 Grease Chamber

1.9 Products Approved by Minister

The use of products or materials other than those described in these Standards may be considered by the Minister. In these cases, such a product or material must be used in accordance with the Minister's approval recognizing it as a product for use in an on-site sewage disposal system.

1.10 Disposal Fields Selection & Layout

1.10.1 Introduction

Most or all septic tank effluent will eventually reach the ground water table, directly or by travel in bedrock or very permeable soils. If the effluent is not adequately treated, drinking water and surface water may become contaminated. It is therefore required that there is well draining soil underneath the disposal field to ensure effluent is treated prior to recharging ground water. The roles of the disposal fields are to uniformly distribute the effluent into the soil profile below the system ensuring that the hydraulic capacity of the soil is not exceeded, and to provide treatment of the effluent leaving the system. This treatment will ensure the protection of groundwater and surface water resulting in the protection of public health and the environment. For the usual circumstances when a system is to be installed on a Category I, II or III lot the Regulations require a minimum of 600 mm of separation between the bottom of the trench and bedrock, maximum water table or soil with unacceptably high permeability. **Please note:** For systems installed on a

Category IV lot, the reader is referred to the depths prescribed in **Appendix D**, (**Category IV**) and not those shown in this section or some of the sketches in the document. The separation distance under the system can be achieved with the addition of Good Quality Fill where suitable permeable soils are not present. All on-site sewage disposal systems shall meet the required minimum setbacks provided in **Appendix C**.

The on-site disposal fields discussed in this section which can be selected by a Site Assessor, a Septic Contractor/Site Assessor and an Engineer are:

- Multiple Trench
- Alternative Multiple Trench
- Gravelless Disposal Systems
- Contour Trench C1, Raised C1, C2 & C3

The on-site disposal field shall not be located:

- where, at any time, the maximum water table is less than 0.6 m (2 ft) below the ground surface
- in soil which does not meet the definition of permeable soil;
- in any area which may be subject to flooding either by a natural body of water or by surface water runoff;
- under a roadway;
- under a paved area;
- under an area used by motor vehicles;
- under an area used intensively by livestock;
- less than 6.1 m (20 ft) from a foundation;
- less than 3.0 m (10 ft) from a parcel boundary or an embankment;
- less than 15.2 m (50 ft) from any well; or
- Less than 15.2 m (50 ft) from a natural boundary of a body of water.

See **Appendix C, Table C1** for more details.

1.10.2 Disposal Field Sizing

Disposal field sizing not listed in the tables outlined in **Appendix D** shall be determined using the following formula and calculations:

$$\text{Drainage pipe length (m)} = \frac{Q (L/d) \times SLR (m^2/1000L/d) / 1000}{CA (m^2/m)}$$

1) Calculate the wastewater flow (**Q**)

2) Calculate septic tank volume (size)

3) Calculate the length of the disposal field system according to the following:

1) Choose the soil loading rate (**SLR**)

i) For Category I & Category III (permeable soil 2-4 feet)

conditions choose:

- 36 m²/1000L/day for multiple trench disposal field
- 36 m²/1000L/day for leaching chamber disposal field
- 31 m²/1000L/day for contour trench disposal field

ii) For Category II, Category III (permeable soil 1-2 feet) &

Category IV conditions choose:

- 41 m²/1000L/day for multiple trench disposal field
- 41 m²/1000L/day for leaching chamber disposal field
- 36 m²/1000L/day for contour trench disposal field

2) Choose the contact area / linear foot of trench (**CA**)

i) For multiple trench system the CA is 0.6 (m²/m)

ii) For a leaching chamber system the CA is 1.2 (m²/m)

iii) For a contour trench disposal field the CA is

- for a 0.9 m wide trench is 1.1 (m²/m)
- for a 1.2 m wide trench is 1.4 (m²/m)
- for a 1.5 m wide trench is 1.7 (m²/m)
- for a 1.8 m wide trench is 2.0 (m²/m)

Where:

Flow (Q) is the design flow referenced from **Appendix B** or as determined by actual measured readings;

Soil Loading Rate (SLR) is the disposal area required for each one thousand litres per day of wastewater generated and is expressed as square metres per 1,000 litres per day (m²/1000L/day);

Contact Area (CA) is the minimum square metres per linear metre of gravel/soil interface on the bottom of the trenches in the disposal field. The contact area is expressed as square metres per linear metre (m²/m).

1.10.3 Multiple Trench

A multiple trench system has been the conventional method of treating and disposing of effluent. It consists of a series of disposal trenches oriented along the contour connected by a level solid header pipe and footer pipe. In **Figure 1.9**, a solid header and a perforated (optional) footer pipe are joined by a number of perforated laterals. The trenches should be oriented with the greatest dimension across the slope of the lot. The header pipe and footer pipes are laid level in an attempt to ensure equal flow distribution to the laterals.

The width of the trench is a minimum of 600 mm. Wider trenches can be used where required. Lateral trenches shall be installed 2.0 metres apart centre to centre, where site conditions allow. Trenches can be closer together if special care is taken to ensure excavated material from one trench does not fall into the next trench. A minimum 1.5 metre separation distance, centre to centre is required for all disposal fields, however, at all times a minimum of 900 mm is maintained between the trench walls..

Selection of a Multiple Trench

Once it has been determined that conditions allow the installation of a multiple trench type system, the minimum total length of trench can be selected from the table in **Appendix D**.

The dimensions of a multiple trench system may be selected as follows:

1. Determine the average daily flow in L/day from the tables in **Appendix B**.
2. From the test pit information determine soil type, depth of permeable soil and total soil depth to bedrock or water table.
3. From the tables found in **Appendix D**, determine if soil depths allow the selection of a trench type field and if so determine the depth of trench allowed.
4. If conditions allow the selection of a trench type system, select the length of trenches for the soil type from the tables in **Appendix D**.
8. Refer to **Figure 1.9** for typical layout of a multiple trench system.

Layout of a Multiple Trench

To use a multiple trench type disposal field the following conditions must be met:

1. There is at least 600 mm permeable soil on the lot for a Category I disposal field size (**Appendix D**).
2. There is at least 300 mm permeable soil on the lot for a Category II disposal field size (**Appendix D**).
3. There is at least 300 mm permeable soil on the lot for a Category III shallow bedrock disposal field size (**Appendix D**).

4. There is at least 1200 mm of Good Quality Fill (GQF) on a lot for Category IV disposal field size, where there is less than 300mm permeable soil (**Appendix D**). Also, a 3 meter buffer must be maintained around the perimeter of the field bed.
5. There is at least 300 mm permeable soil under the disposal trench.
6. There is at least 600 mm separation between the bottom of the trench and the maximum water table elevation, bedrock or soil with unacceptably high permeability.

Where these conditions cannot be met, the selection of another type of disposal field may be required.

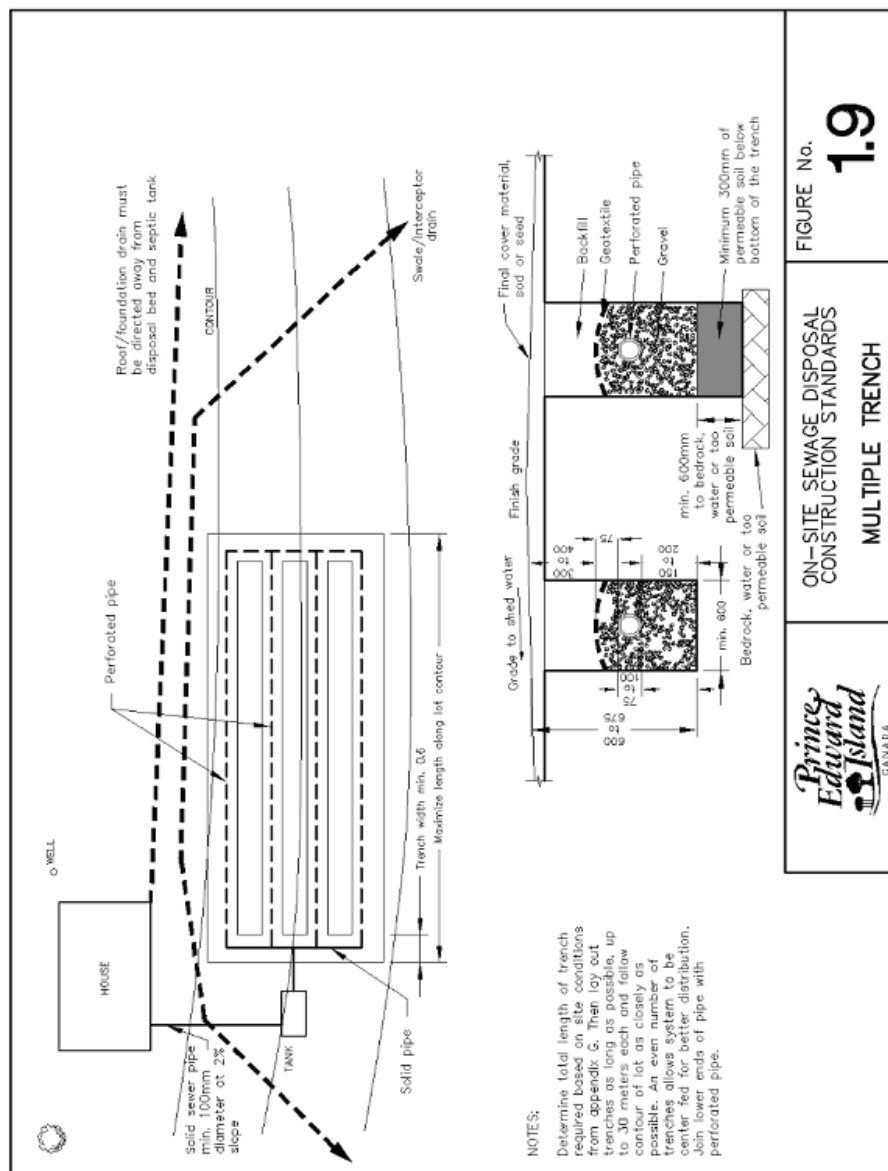


Figure 1.9 Multiple Trench

1.10.4 Alternative Multiple Trench

An alternative multiple trench consists of a series of disposal trenches oriented perpendicular to the contour of the land connected by a level solid header pipe and footer pipe in **Figure 1.10**. A solid header and a perforated footer pipe (optional) are joined by a number of perforated laterals. The minimum width of the trenches will be 600 mm. Laterals to be installed a minimum of 4 m apart where pipe conditions allow.

Selection of an Alternative Multiple Trench

To use an alternative multiple trench type disposal field, the following conditions must be met:

1. Determine the average daily flow in L/day from the tables in **Appendix B**.
2. From the test pit information determine soil type, depth of permeable soil and total soil depth to bedrock or water table.
3. From the tables found in **Appendix D**, determine if soil depths allow the selection of a trench type field and if so determine the depth of trench allowed.
4. If conditions allow the selection of a trench type system, select the length of trenches for the soil type from the tables in **Appendix D**.
5. Refer to **Figure 1.10** for typical layout of an alternative multiple trench system.

Layout of an Alternative Multiple Trench

To use an alternative multiple trench type disposal field the following conditions must be met:

1. There is at least 600 mm permeable soil on the lot for a Category I disposal field size (**Appendix D**).
2. There is at least 300 mm permeable soil on the lot for a Category II disposal field size (**Appendix D**).
3. There is at least 300 mm permeable soil on the lot for a Category III shallow bedrock disposal field size (**Appendix D**).
4. There is at least 1200 mm of Good Quality Fill (GQF) on a lot for Category IV disposal field size, where there is less than 300mm permeable soil (**Appendix D**).
Also, a 3 meter buffer must be maintained around the perimeter of the field bed.
5. There is at least 300 mm permeable soil under the disposal trench.
6. There is at least 600 mm separation between the bottom of the trench and the maximum water table elevation, bedrock or soil with unacceptably high permeability.

1.10.5 Gravelless Disposal Systems

Gravelless disposal systems offer alternatives to traditional pipe and gravel distribution systems. The use of gravelless systems technology can be advantageous in areas where gravel is difficult to place or may not be readily available. Systems such as chambers and other synthetic aggregate systems must meet appropriate standards for sewage disposal systems distribution and must meet specifications outlined in **this Appendix**. Gravelless systems may consist of open-bottomed chambers, fabric-wrapped pipe, and pipe wrapped in synthetic materials such as expanded polystyrene (EPS) foam chips. A number of proprietary gravelless systems have been approved for use in specific jurisdictions throughout North America, including Prince Edward Island.

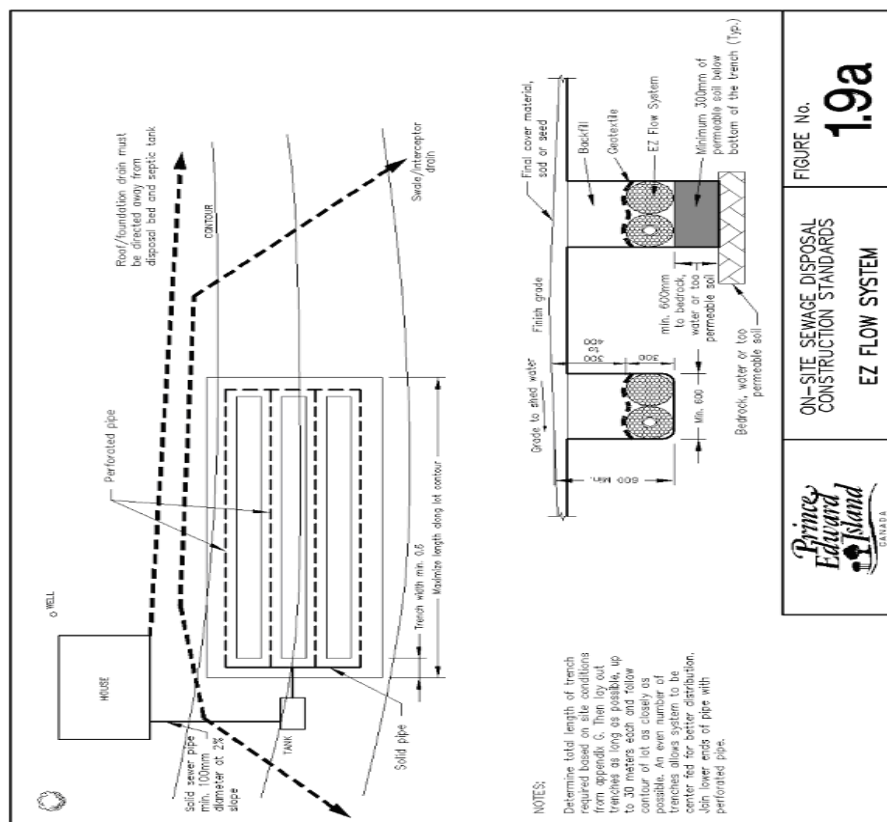


Figure 1.9a EZflow System (Multiple Trench)

Gravelless technologies, like the leaching chamber system, shall be selected and laid out according to these standards and the manufacturer's installation recommendations must be approved for distribution by the Minister. Where applicable, system sizing for these systems has been adjusted and approved by the Minister, allowing for increased contact area in these systems. In the leaching chambers systems up to 50% reduction is permitted. With the EZflow system a reduction of up to 33% is permitted. The EZflow system (Figure 1.9a) is only permitted for use in a multiple trench design.

A typical design layout of a gravelless system like the leaching chamber system have been approved for use in PEI since 1996 and two options for installation approved by the Minister include a Shallow In-ground System and an At-grade System (see Figure 1.11).

The **in-ground** system is used when the following conditions can be maintained:

1. System can be placed within 600 mm of surface;
2. Depth of permeable soil below the system is minimum 300 mm;
3. 600 mm separation to groundwater, bedrock, or "too permeable" soil.
4. **Appendix D** provides the lengths required for the various lot categories.

The **at-grade** system is used when the conditions required for the in-ground system cannot be met. The at-grade system is required to be backfilled with Good Quality Fill (GQF).

The **at-grade** system is used when the following conditions can be maintained:

1. System is placed at grade;
2. Depth of permeable soil below the system is minimum 300 mm;
3. Soil under the system is scarified;
4. 600 mm separation to groundwater, bedrock, or "too permeable" soil.
5. **Appendix D** provides the lengths required for the various lot categories.

Layout of Chamber System (Multiple Trench)

The trenches shall be excavated parallel to the ground contour. The lines of the chambers shall be of equal length. A minimum depth of 300 mm of permeable soil below the bottom of any trench of the disposal field is required. The minimum distance of the walls of adjacent trenches shall be 900 mm and the minimum spacing between the chambers shall be 1800 mm centre to centre. The bottom of each trench shall be level and of equal elevation.

Each line of chambers shall be fed from a header via tees and the downstream end of each line shall be connected to a bottom header.

For gravity fed systems, the inlet pipe shall extend through the end plate and terminate on an adequate splash plate (concrete patio stone) or an energy dissipation device. This is required for both high and low pressure distribution systems.

Where the total length of leaching chambers in a multiple trench configuration exceeds 150 m, they shall be constructed in two or more separate disposal fields connected to the septic tank by using, a) a sewage pumping station or b) a siphon chamber.

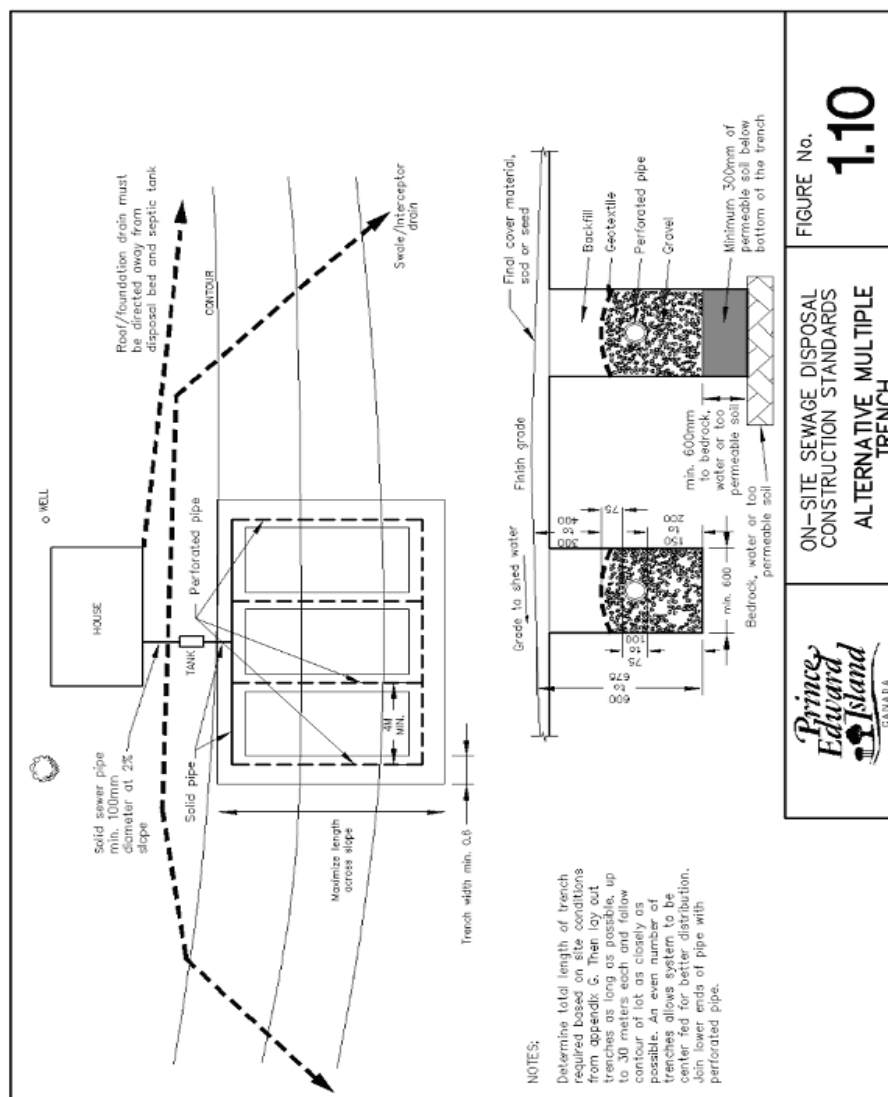


Figure 1.10 Alternative Multiple Trench

Layout of EZ Flow System (Multiple Trench)

For use in raised bed applications, the EZflow 1202 is a bundle of 2 pieces each of 300mm in diameter by 3.0 meters long. The EZflow 1202 is designed for use in trench applications.

Installation Instructions

The instructions for installation of EZflow products are given below. In cases where linear footage required is not in multiples of 10, installer may (a) reduce the product to needed length and refasten netting to the pipe or, (b) use an additional 10 feet of product to exceed the required trench length.

Disposal Field Use

The EZflow 1202H, systems can be used in disposal fields as follows:

1. The *EZflow*1202H system is to be installed side by side, in a 600 mm wide trench, one cylindrical bundle shall be of solid aggregate fill (without pipe) and the other cylindrical bundle (with pipe) shall be of aggregate and drainage tile.
2. Disposal field trenches shall follow the ground surface contours so that variations in trench depth will be minimized.
3. The minimum clearance distances required shall be met. Determine the permitted location and excavate the trenches.
4. Construction of trenches shall comply with these Standards. Trench wall and bottom are to be raked or scarified to loosen soil.
5. Remove plastic *EZflow* stretch wrap prior to placing bundles in the trench(s). Remove any stretch wrap in the trench before system is covered.
6. Place first *EZflow* bundle(s) in the trench. The next bundle(s) with pipe are joined end to end with approved internal pipe couplings. Connect and place additional EPS bundles with pipe in trenches until the required linear footage has been obtained and cap the ends with approved caps.
7. If installing an *EZflow* product that does not contain a pre-inserted geotextile, then a geotextile barrier cover shall be placed over the top of these products prior to backfilling. The barrier material must meet the requirements of these Standards.
8. These products shall be covered with a minimum of 300 - 400 mm of backfill.
9. The trench top shall be shaped or mounded to ensure surface water runoff.

Where the total length of the field bed in a multiple trench configuration exceeds 150 m, the field bed shall be constructed in two or more separate disposal fields connected to the septic tank by using, a) a sewage pumping station or b) a siphon chamber. The design layout of an *EZflow* system is similar to a standard multiple trench system as shown in **Figure 1.9a**.

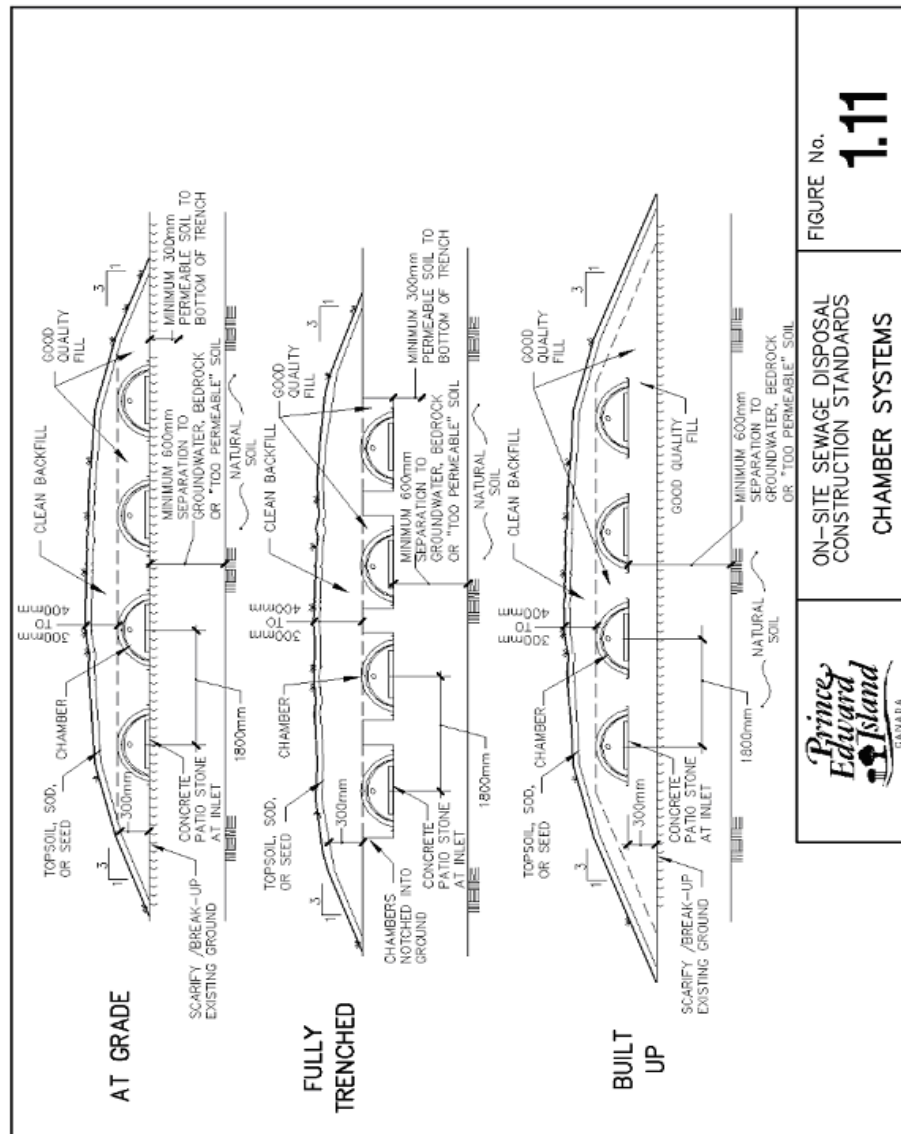


Figure 1.11 Chamber Systems

1.10.6 Contour Trench C1 and Raised C1

A contour trench is a conventional disposal field constructed along the contour line. Details of a C1 contour trench are shown in **Figure 1.12**.

A C1 trench may be used:

- where the surface slope at the location of the trench is at least 5 per cent
- where the width of the lot will allow for the length of the selected C1 trench

A C1 trench is fed by a gravity distribution system, except where a pressure system is required where the distribution field is at a higher elevation than the septic tank.

An interceptor trench or swale may be necessary, to intercept and divert surface or ground water if a perched water table exists, or if the system is located at the lower end of a long slope.

Refer to **Section 1.6** for more information on interceptor trench or swale.

Depth Limitations for a C1 Contour Trench

Figures 1.12 and **1.13** illustrate two possible C1 contour installations.

It is important that the C1 trench excavation does not penetrate the soils with unacceptably low permeability and that there is a minimum of 300 mm of permeable soil under the

disposal field. It should also be noted that the draining of a perched water table may allow for the increase of an effective soil depth.

As illustrated in the raised C1 cross section (

Figure 1.13), clearance to water table, bedrock and soils with unacceptably high permeability can be increased if the trench is raised by not more than 300 mm. This trench will require an earth cover as illustrated and an interceptor trench and/or swale.

Selecting a C1 Contour Trench

The length of a C1 trench is determined using the table in **Appendix D**. The table used will depend on the average daily flow leaving the dwelling and the depth of permeable soil.

Other factors include the amount of room for a contour system on the property and the total depth of soil above water table, bedrock, or soil of high permeability.

The length of a C1 trench will range between 30 m and 60 m. If a C1 system cannot be selected due to limiting soil conditions, then a C2 or C3 system may be considered with the addition of Good Quality Fill (GQF).

Criteria for selecting a C1 system:

- a) Determine the number of bedrooms and low flow fixture option.
- b) Determine the surface slope at the proposed location of the disposal field. If the slope is less than 5 per cent or greater than 30 per cent, a C1 system cannot be used.

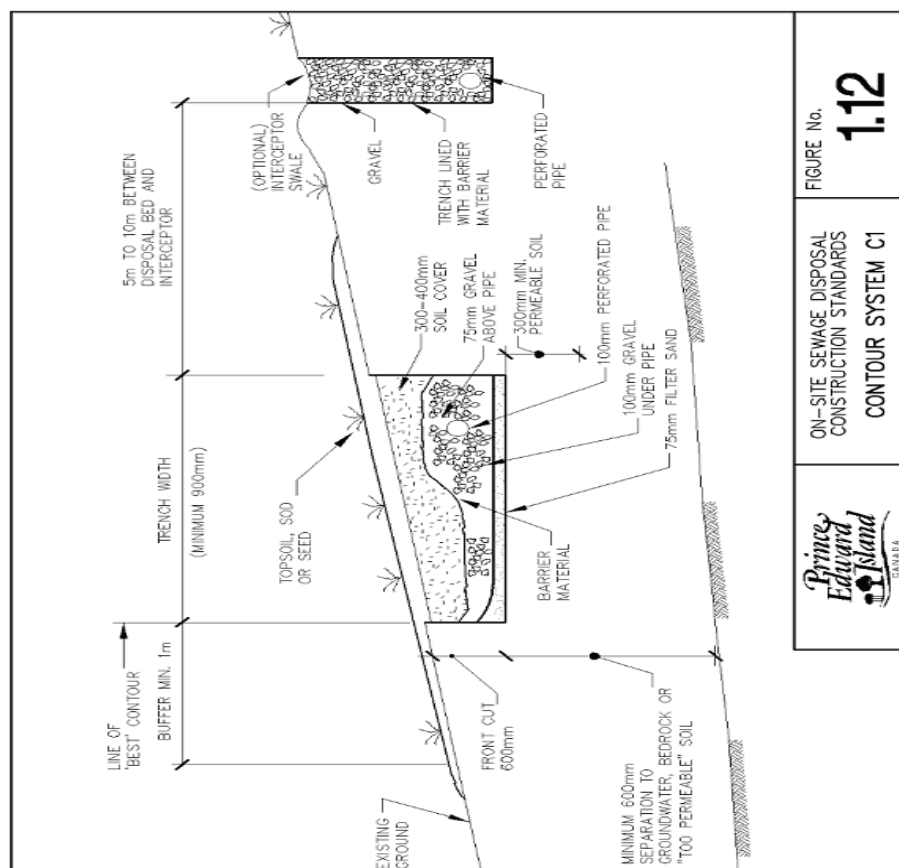


Figure 1.12 Contour System C1

- c) Determine the category of the soils in the area of proposed disposal field. If the total depth of permeable soil is less than 600 mm a C1 system cannot be used.
- d) Determine the maximum depth to water table, bedrock, soil with unacceptably high permeability. If this value is less than 1.2 m, then a C1 system cannot be used.

FIGURE No.

1.12

ON-SITE SEWAGE DISPOSAL
CONSTRUCTION STANDARDS
CONTOUR SYSTEM C1

Prince
Edward
Island
GOVERNMENT

- e) Determine the lot category.
- a) Once the lot category, number of bedrooms and system type are determined, refer to **Appendix D** to determine the trench length and width.
- b) The cross section dimensions of the disposal field shall be those shown in **Figures 1.12 and 1.13**

Layout of a C1 Trench

Figures 1.12 and 1.13 illustrated the layouts of fully trenched C1 and raised C1 trenches.

A trench is excavated along the contour to the required width and depth. The trench bottom is perfectly level throughout its length and width. The bottom of the trench and the down slope side walls are then raked. After raking, filter sand is deposited in the bottom of the trench to a depth of 75 mm, with excess filter sand raked to the down slope side of the trench. The sand is placed as shown in **Figure 1.12 & 1.13**. Once the sand is in place a minimum of 100 mm of gravel will be placed. The amount of crushed rock at the tee will exceed 100 mm because the pipe will be sloped toward the end of the system.

1.10.7 Contour Trench C2

A C2 contour trench may provide an alternative in situations where a C1 trench cannot be used. **Figure 1.14** illustrates the layout of a standard C2 trench.

A C2 trench is similar to a C1 trench in that effluent leaving the trench is expected to move laterally in the soil below the organic surface layer. In a standard C2 contour trench a layer of Good Quality Fill, above the ground surface, enables saturation of the existing soil to the natural ground surface preventing possible breakout.

Use of C2 systems is limited to locations where the surface slope at the location of the trench is at least 5 per cent. If the slope is less than 5 per cent, a multiple trench or chamber system must be used. The exact selection is dependent on the site.

A modified C3 trench, constructed according to **Figure 1.16**, should be used instead of a C2 trench where uneven surfaced lots or boulder fields are encountered.

A C2 trench is fed by a gravity distribution system, except that a pressure system is required where:

- the length from the tee feeding the system, to the end of the distribution pipe, exceeds 23 m
- the natural slope is not constant and a gravity system may tend to concentrate effluent in one part of the system
- The distribution pipe is at a higher elevation than the septic tank.

Where groundwater, bedrock, or soil with unacceptably high permeability occurs under a C2 trench, a 600-mm vertical separation must be maintained between the bottom of the disposal field trench and the above conditions. This may require the use of a C3, rather than a standard C2, to ensure that this 600 mm separation is met.

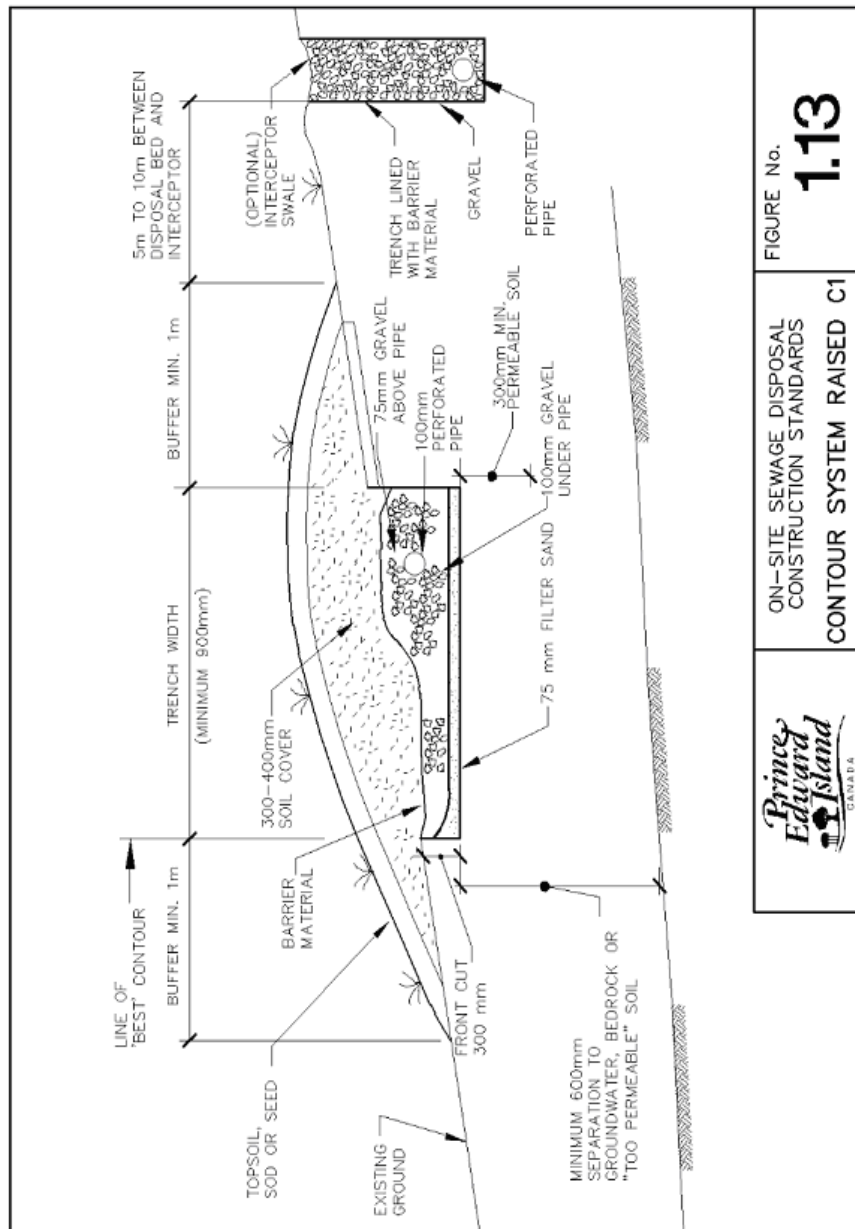


FIGURE No.
1.13

ON-SITE SEWAGE DISPOSAL
CONSTRUCTION STANDARDS
CONTOUR SYSTEM RAISED C1

Prince
Edward
Island
CANADA

Figure 1.13 Contour System Raised C1

Selection of a C2 Trench

The length of a C2 trench is determined using the table in **Appendix D**. The table used will depend on the average daily flow leaving the dwelling and the depth of permeable soil. The amount of area for a contour system on the property, and the total depth of soil above water table, bedrock, or soil of unacceptably high permeability must be taken into consideration.

The length of a C2 trench will range between 30 m and 60 m. If a C2 system cannot be selected due to limiting soil conditions, then a C3 trench system may be considered.

Criteria for selecting a C2 system:

- a. Determine the number of bedrooms and low flow fixture option.
- b. Determine the surface slope at the proposed location of the disposal field. If the slope is less than 5 per cent or greater than 30 per cent, a C2 contour trench cannot be used.
- c. Determine the depth(s) of permeable soil. If the total depth of permeable soil is less than 300 mm a C2 system cannot be used.
- d. Determine the depth to water table, bedrock or soil with unacceptably high permeability. If this value is less than 1.2 m, then a C2 system cannot be used.
- e. Determine the category of lot.

- a. Once the lot category, number of bedrooms and system type are determined, refer to **Appendix D** to determine the trench width and length.

The cross section dimensions of the disposal field shall be those shown in **Figure 1.14**.

Layout of Standard C2 Trench

Figure 1.14 illustrates the layout of a standard C2 trench. The toe of the trench is excavated along the contour to a depth of 175 mm into the permeable soil.

The trench is then excavated to the necessary width while keeping the bottom of the trench perfectly level throughout its length and width. The trench bottom and down slope side walls are raked. The depth of the trench from the upslope side will be greater than the depth at the toe.

A 75 mm layer of filter sand is deposited in the bottom of the trench and excess filter sand is raked to the down slope side of the trench.

A minimum 125 mm depth of crushed rock is placed on top of the filter sand. This will ensure that the distribution pipe is raised so that its invert is at or above the ground elevation at the down slope lip of the trench. The amount of crushed rock at the tee will exceed 125 mm because the pipe will be sloped toward the end of the trench.

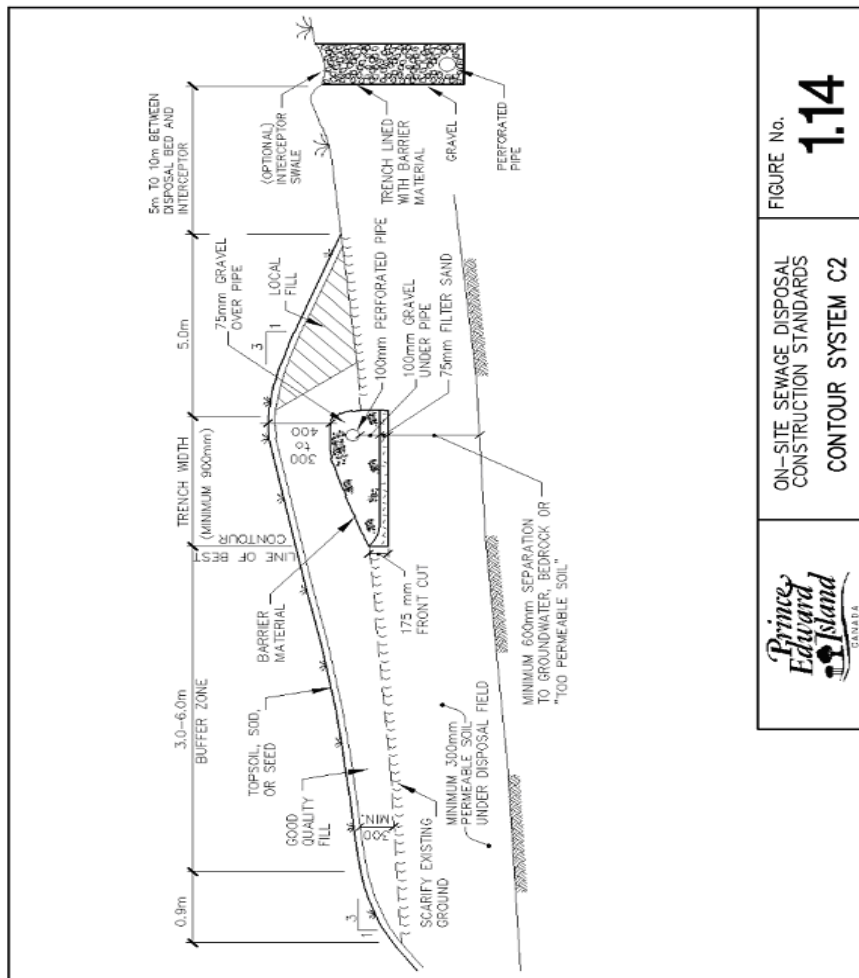


Figure 1.14 Contour System C2

1.10.8 Contour Trench C3

A C3 trench is shown in **Figure 1.15**. This trench consists of a distribution pipe and rock filled trench constructed entirely in good quality fill. The Good Quality Fill (GQF) and trench must follow the site contour.

- additional depth of good quality fill is required to protect groundwater
- site conditionsCuneven sites including boulder fields, or undulating wooded areasRequire a modified C3 system, **Figure 1.16**, instead of a C2 trench
- the surface slope is at least 5%

Effluent leaving the trench in a C3 is expected to move vertically through the Good Quality Fill (GQF) until it reaches the natural soil under the fill. Effluent will then move vertically into the natural soil if the permeability allows, or down slope through the good quality fill where the permeability of the natural material is inadequate to allow the effluent to enter the soil.

Selection of a C3 Trench

Where ground water, rock or soil with unacceptably high permeability occur under the C3 trench, the depth of good quality fill must be enough to provide a 600 mm vertical separation between the bottom of the distribution trench and the ground water, rock or soil with unacceptably high permeability. Under these conditions, select a C3 as shown in **Figure 1.15** with a depth of good quality fill adequate to give the 600 mm separation, but not less than 600 mm.

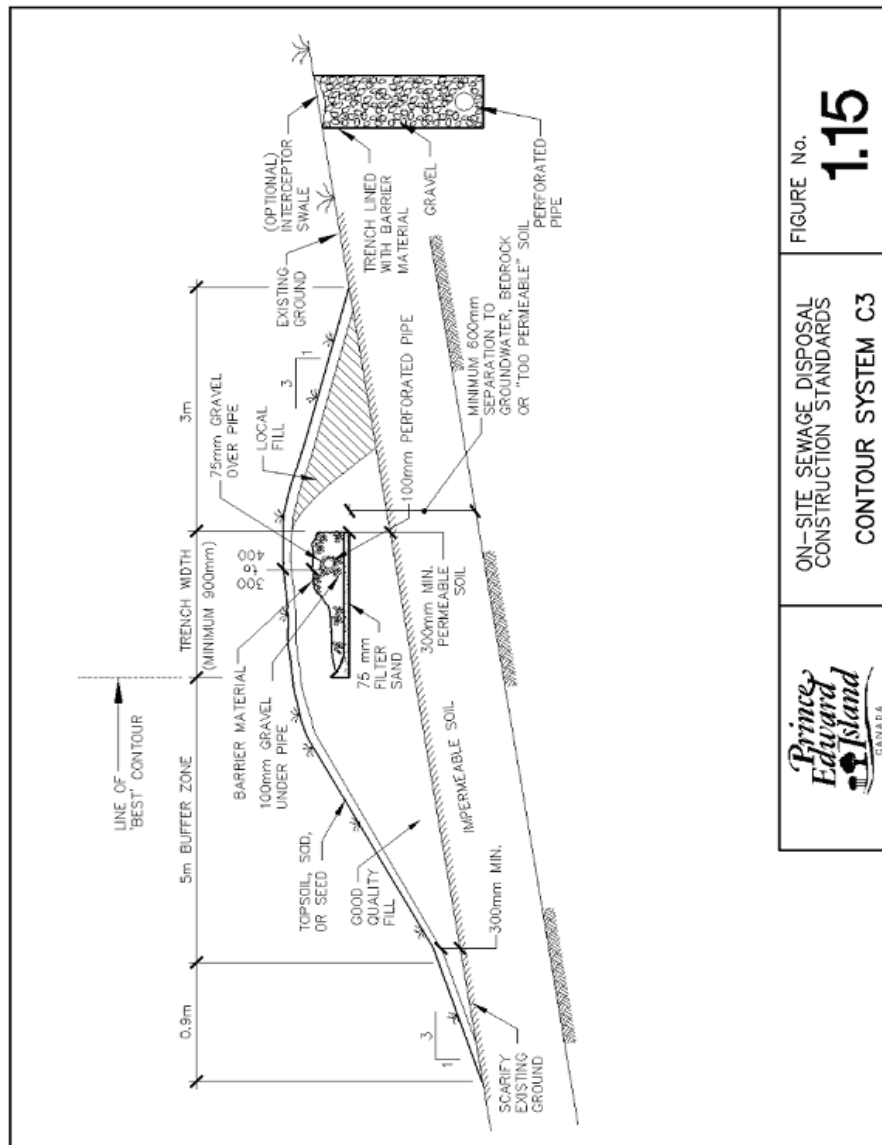
The dimensions of a C3 system can be determined as follows:

- Determine the number of bedrooms and low flow fixture option.
- Determine the ground surface slope at the location of the trench and confirm that is greater than 5% and less than 30%.
- Based on the flow determined in (a) and the slope determined in (b), the length of the C3 and the type of good quality fill required is selected from **Appendix D**.
- If the distance from the bottom of the trench to ground water, bedrock, or soil with unacceptably high permeability is a factor, select the depth of good quality fill required to give the minimum 1 m separation. Where separation to ground water, bedrock, or soil with unacceptably high permeability is not a concern select a depth of 600 mm good quality fill under the trench.
- Select other dimensions of the system from **Figures 1.15 and 1.16**.

Where a C3 type system is installed on a lot with very little permeable soil over solid bedrock or soil with unacceptably low permeability and effluent is expected to be obvious at the down slope toe of the sand buffer it is recommended that a 150 mm layer of sand plus final cover material and sod be extended beyond the buffer. The down slope width of this extra buffer is determined on a site by site basis but should extend at least 7 m or to the point where there is adequate permeable soil or root zone to absorb the effluent.

Layout of a C3 Trench

The required dimensions of the buffers for a C3 trench are shown on **Figures 1.15 and 1.16**. Fill used for the buffer upslope of the trench may be Good Quality Fill or clean fill material. Good Quality Fill is required for down slope and end buffers. The down slope edge of the rock trench in the C3 is laid out to follow the contour of the site.

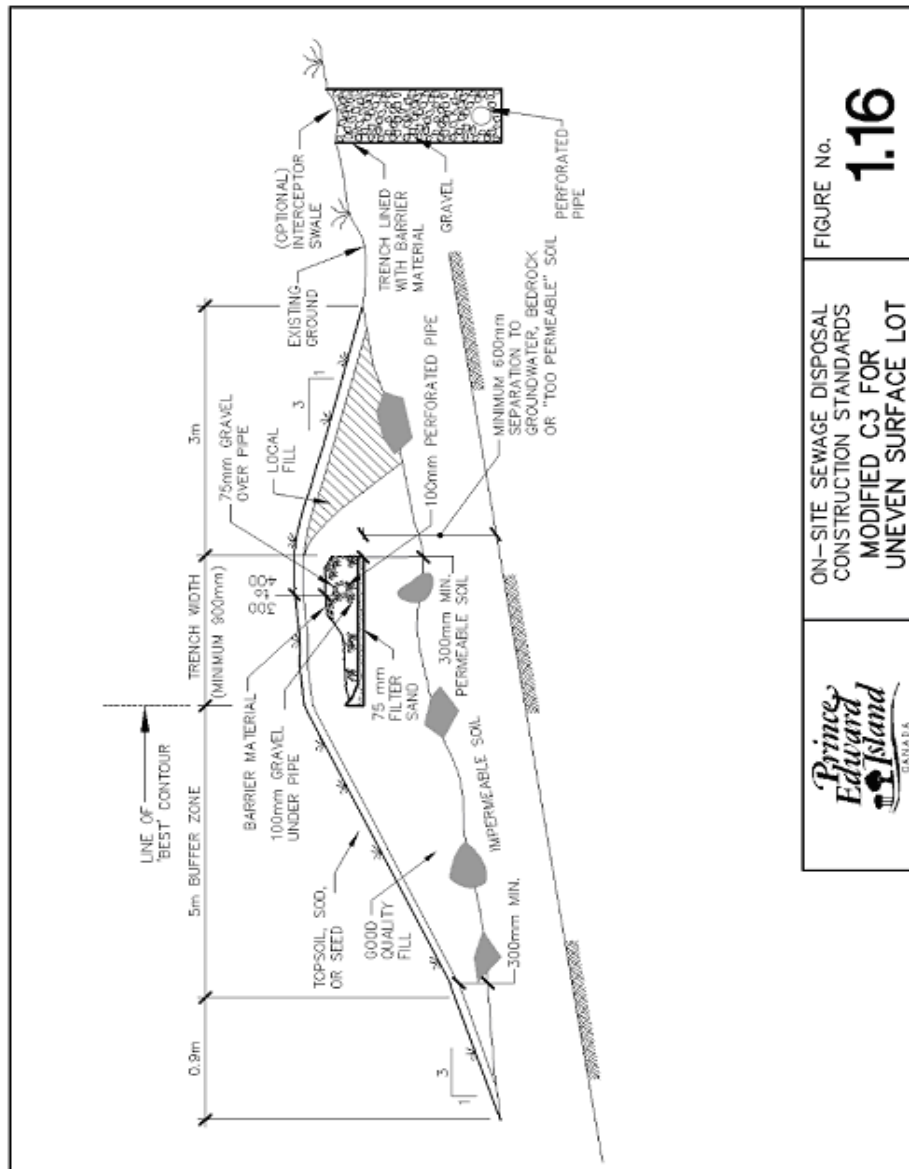


ON-SITE SEWAGE DISPOSAL CONSTRUCTION STANDARDS
CONTOUR SYSTEM C3

FIGURE No. **1.15**



Figure 1.15 Contour System C3



ON-SITE SEWAGE DISPOSAL
CONSTRUCTION STANDARDS
MODIFIED C3 FOR
UNEVEN SURFACE LOT

FIGURE No.

1.16

*Prince
Edward
Island*
CANADA

Figure 1.16 Modified C3 for Uneven Surface Lot

1.11 Gravelless Disposal System

Gravelless disposal systems offer alternatives to traditional pipe and gravel distribution systems and the Minister will consider the approval of alternate gravelless technology if proponents submit the following information:

- Soil effluent loading and hydraulic loading rates;
- Equivalent void space (to crushed rock);
- Capability of the system to withstand pressure of backfill and extraneous loads;
- Manufacturer's installation instructions;
- Documentation of approval in other jurisdictions;
- Applicability to Prince Edward Island;
- Benefits to Prince Edward Island.

1.12 Requirements for Good Quality Fill (GQF)

1.12.1 Site Preparation

Prior to the installation of an on-site sewage disposal system (septic), a site suitability assessment shall be completed to verify the site conditions. This assessment should take place in the proposed area of the disposal field or at least within a 75 foot radius of the

proposed location of the disposal field. The assessment shall provide details with respect to the depth to bedrock, water table, and the depth of permeable soil as outlined. Once this assessment has been completed, the disposal field can be selected to suit the lot and development.

A critical piece of information during the selection of the disposal field is to determine if and how much fill material may be added to the disposal field area in order to accommodate the design of the system. As the system is only as good as the natural soil on-site and the fill added, it is very important not only to perform an assessment of the natural soils but also the fill material that is to be added to the disposal field area. This material is called Good Quality Fill (GQF).

1.12.2 Specifications

Typically, in PEI the GQF added to the site is a reasonably uniform sand or sandy gravel with a small portion of silt/clay. The recommended sieve specifications for suitable sand are given in **Table 1.4** and should be used for all systems that require fill material under and around the disposal field and in the buffer areas of the disposal field.

The recommended Good Quality Fill Specifications are listed in **Table 1.4**. Contractors should strive to meet or exceed these recommendations. However, sieve analysis results can vary due to sampling. For this reason, the Minister will accept up to 15% silt & clay passing at the No. 200 sieve.

Table 1.4 – Good Quality Fill (GQF)

Sieve	Effective Particle Size (mm)	Percent Passing by weight (%)
1 in	25	95 to 100
3/8 in	9.5	70 to 100
No. 200	0.075	2.5 to 10

1.12.3 Contractor's Responsibility

The Septic Contractor has the ultimate obligation to ensure that the disposal field is installed in material that is suitable and meet the requirements of these standards even though the material may be purchased and installed by another Fill Contractor. It is recommended that the Septic Contractor inform the Fill Contractor clearly of the fill requirements.

1.13 Buffers

The down slope side of the contour trench may need to be extended due to limited permeable soils on site. If desired, a 150 mm layer of Good Quality Fill (GQF) could be extended 5 meter down slope of the standard 5.9 meter buffer.

APPENDIX B Flow Tables

1. The individual on-site sewage disposal system shall be designed and constructed to adequately treat and dispose of the expected maximum flow of sewage.
2. The disposal system must be designed to receive all sewage from the building or structure except cooling water, roof, foundation or surface drains or backwash from water treatment devices, unless otherwise approved by the Minister. Backwash from water treatment devices add an extra hydraulic load and may create additional concerns depending on the specific treatment technology. Discharge of this backwash to an on-site sewage disposal system is only

recommended if the system has been specifically designed by an engineer to accept the specific discharge.

3. The minimum design sewage flow from any residential structure or dwelling, shall be 900 L/day. When it is anticipated that the sewage flows from the dwelling or structure will exceed the 900 L/day minimum, it is recommended that the sewage flows, as indicated in the following **Table B1**, be utilized:

Table B1 Residential Flows		
Number of Bedrooms	W/Standard Water Closets (Litres)	Low Flow Water Closets (Litres)
2 bedrooms or less	900	720
3 bedrooms	1,400	1,100
4 bedrooms	1,900	1,500
Each additional bedroom	450	350

(For residential applications where 6 litre toilets are installed, a 20 percent reduction in design flow may be applied).

4. The minimum design sewage flow from any multi unit residential structure or dwelling such as, apartments, condominiums, cottages, hotels, etc., shall be 900 L/day. When it is anticipated that the sewage flows from the dwelling or structure will exceed the 900 L/day minimum, it is recommended that the sewage flows as indicated in the following **Table B2** be utilized:

Table B2 Multi Unit Residential Flows		
Unit Type	Average Daily Flow (L/Day)	
	Standard Water Closets	Low Flow Water Closets
For each 1 bedroom unit	900	720
For each additional 1 bedroom unit	450	350
For each 2 bedroom unit	900	720
For each 3 bedroom unit	1,400	1,100
For each 4 bedroom unit	1,900	1,500

5. Industrial wastewater shall not be discharged into on-site sewage disposal systems designed for sanitary sewage disposal unless prior approval is obtained from the Minister. Special designs or pre-treatment may be required for industrial waste-water.
6. All restaurants or other establishments involved in food preparation activities shall install external grease tanks.
7. The design sewage flows from other residential, commercial, industrial and institutional buildings or structures should be based on the design wastewater flows prescribed in **Table B3** of this appendix. The minimum design flow from other residential, commercial, industrial and institutional buildings or structures shall be 900 L/day. The designer for these types of systems may want to consider the characteristics of the waste water in the process of design.
8. Where actual metered flow data indicating maximum daily flows are available, such flow data may be substituted for the sewage flows listed in this appendix, under the following conditions:

- The minimum design flow for residential, commercial, industrial and institutional buildings or structures is 900 L/day.
 - They should cover the most recent two (2) week peak period of operation.
 - A 20 to 50 per cent increase factor should be used in the design flow to accommodate potential future flow increases, occasional peaks, etc.
 - Flow meter data, from the facility shall be submitted by the Engineer or site assessor at time of submission, also include information regarding actual occupancy or production volume when unit flows are calculated.
9. A reduction in the design flows may be allowed by the Minister when permanent low-volume devices are to be installed in the proposed building or structure.
10. Design flows in this **Appendix B** are recommended minimal design flows and if evidence of larger flows exist or are expected, the larger flows should be used.

In many cases the tables provide several flow rates for the same/similar activity (examples: church halls, restaurants, etc) and the system designer must decide which of the flows provided in the tables is most representative for the specific design. If there is a question related to which flow rate is most appropriate, the Minister will have the final decision.

Table B3
Design Wastewater Flows

Facility	Unit of Measure	Maximum Design Flow (Litres/day)
<i>Institutional</i>		
Assembly Hall/Churches: With kitchen	Seat	45
Assembly Hall/Churches: No kitchen	Seat	23
Fire station without full time employee, floor drains or food	Person	19
Town Hall	Seat	23
<i>Medical/Personal Care</i>		
Hospital: Including laundry	Bed	1,050
Nursing/Special Care Home	Resident	600
Nursing/Special Care Home: Add per employee	Employee	80
Medical Office: Doctors, nurses, medical staff	Person	273
Medical Office: Office staff add	Person	80
Medical Office: Patient add	Person	23
Dental Office	Chair	757
Dental Office – waterless units	Chair	0
Dental Office: Staff/Patient add	Person	80

Schools

Table B3
Design Wastewater Flows

Facility	Unit of Measure	Maximum Design Flow (Litres/day)
School: Cafeteria, gym and shower	Student	90 Add to base flow for school
School: Cafeteria only	Student	80 Add to base flow for school
School: Gym with showers only	Student	30 Add to base flow for school
School: Elementary – washrooms only	Student	26
School: High – washrooms only	Student	45
School: Junior high – washrooms only	Student	34
School Boarding: Resident student	Student	136
School Boarding: Non-resident staff	Person	80
Food Service		
Bakery: Sanitary only	Employee	68
Bar/Lounge	Seat	140
Bar/Lounge: Add per employee	Employee	80
Restaurant: Not 24 hour	Seat	160
Restaurant: Add per employee	Employee	80
Restaurant: Take Out	Seat	70
Taverns/Bars/Lounges with minimal food service	Seat	140
Commercial		
Office	Employee	80
Beauty Salon	Station	400
Beauty Salon: Add for personnel	Person	38
Veterinary Clinic (3 doctors or less): No boarding	Total	2,900
Dog Kennel	Enclosure	73
Laundromat: Self Serve	Machine	1,700
Laundromat: In apartment building	Machine	1,700
Shopping Centre	Space	10
Shopping Centre	Employee	80
Commercial/Automobile		
Automobile Gas Station: Single hose pump	Unit	570 (does not include restaurant)
Car Wash *	Vehicle	189
* requires oil water separators with discharge to a closed storm sewer or an in-ground disposal system.		

Table B3
Design Wastewater Flows

Facility	Unit of Measure	Maximum Design Flow (Litres/day)
<i>Commercial/Hospitality</i>		
Motel	Unit	320
Motel	Housekeeping unit	450
Motel: Dining room	Seat	160
Motel: Bar and lounge	Seat	68
Hotel	Guest	136
Hotel: Add for employees	Employee	36
Boarding House/Dormitory	Resident	180
Senior Citizens Home	Resident	227
Day Care Centers: Staff and children	Person	80
<i>Recreation/Camping</i>		
Campgrounds: Tents only – No service	Site	320
Campgrounds: Trailers - water and electrical – 2 way	Site	320
Campgrounds: Trailers - water, sewer and electrical – 3 way	Site	390
Campgrounds: With central comfort stations	Add for dump station	390
Day Camps: No meal	Person	70
Day Camps: Meals	Person	100
Summer Camps	Camper/Instructor	160
<i>Parks, Beaches and Picnic Grounds</i>		
Picnic and Fairgrounds: With bath houses, showers, toilets	Person	38
Picnic and Fairgrounds: With toilets only	Person	18
Beaches with Showers and Toilets	Person	40
Visitor Centre	Person	18
Visitor Centre: add Employee	Employee	80
<i>Golf/Country Clubs</i>		
Golf/Country Club	Round	18
Golf Clubs and Restaurant add	Seat	35
Golf Clubs	Fixture	1,800
Golf/Country Clubs: Showers	Person	40
Golf/Country Clubs: Day staff – Add	Employee	80
<i>Recreation General</i>		
Theatre	Seat	18
Theatre: Drive-in – food	Space	23

Recreation/Sport

Bowling Alleys: Without bar and restaurant	Alley	105
Bowling Alleys: With bar or restaurant	Alley	800
Ice Rink	Seat	11
Ice Rink: Participant add	Person	38
Stadium	Seat	18
Swimming Pool	Customer	45
Water Slide Park	Visitor	18
Gym: Participant	Person	38
Gym: Spectator	Person	18
Tennis/Racquetball: Excluding food	Court	946
Outdoor Sport Facilities: Toilet only	Person	18

NOTES:**Approximate Flushing Frequencies**

Residential	5 flushes per day
Schools	2 flushes per student per day
Hotel/Motel Room	4-6 flushes per day
Restaurant	0.5 flushes per meal per day
General Commercial	2-4 flushes per employee per 8 hr
Industrial	3 flushes per employee per 8 hr
Ski Areas	1 flush per skier per day
Campgrounds with Facilities	3 flushes per person per night

Note: Flow reduction - Facilities that install low flow or no flow fixtures may have reduction of flow applied. Site assessor or consulting engineers may apply 20% to 50% reduction to the design based on design approach.

APPENDIX C**Table C1 – Minimum Setback Distances**

	Septic Tank (holding tank, pumping and dosing chamber)		Grease Tank		Disposal Field		Sewer Line	
	Metres	Ft.	Metres	Ft.	Metres	Ft.	Metres	Ft.
Water well	15.2	50	15.2	50	15.2	50	3.0	10
Property boundary	3.0	10	3.0	10	3.0	10		--
Beach setback *	22.9	75	22.9	75	22.9	75		--
Building with foundation **	4.6	15	1.5	5	6.1	20		--
Building without foundation	---	---	---	---	4.6	15		--
Water line	3.0	10	3.0	10	3.0	10	0.45	1.5
Natural boundary of a body of water	15.2	50	15.2	50	15.2	50		--

* existing lots prior to 1993 only require 50-foot setback from bank or twice the erosion rate for the area.

** variances may be given for slab on grade or walk out basements in tight situations.

Appendix D Disposal Field Length Selection Tables
Minimum Field Tile Length by Lot Category

Category I												
Distance to Bedrock or Water Table from Ground Surface: Greater than 1.2 m (4 ft)												
Depth of Permeable Soil from Ground Surface: Greater than 0.6 m (2 ft)												
System Description	Minimum Trench Width	Number of Bedrooms								Slope %		
		2		3		4		5		<5	5-30	>30
		Standard	LF	Standard	LF	Standard	LF	Standard	LF			
1. Multiple Trench System	0.6 m (2.0 ft)	85 m (280 ft)	68 m (224 ft)	110 m (360 ft)	88 m (288 ft)	134 m (440 ft)	108 m (352 ft)	162 m (530 ft)	130 m (425 ft)	Y	P	N
2. Alternative Multiple Trench System	0.6 m (2.0 ft)	67 m (220 ft)	54 m (176 ft)	91 m (300 ft)	73 m (240 ft)	116 m (380 ft)	93 m (305 ft)	140 m (460 ft)	112 m (368 ft)	Y	P	N
3. Contour System Type C1	0.9 m (3.0 ft)	30 m (100 ft)	—	37 m (120 ft)	—	49 m (160 ft)	40 m (130 ft)	61 m (200 ft)	49 m (160 ft)	N	Y	EDS
4. Contour System Type C2	0.9 m (3.0 ft)	30 m (100 ft)	—	37 m (120 ft)	—	49 m (160 ft)	40 m (130 ft)	61 m (200 ft)	49 m (160 ft)	N	Y	EDS
5. Chamber system Multiple Trench	0.9 m (3.0 ft)	43 m (138 ft)	—	55 m (175 ft)	—	69 m (225 ft)	—	80 m (262 ft)	—	Y	P	EDS
6. EZ flow System ¹ Multiple Trench	0.6 m (2.0 ft)	57 m (187 ft)	—	74 m (243 ft)	—	90 m (296 ft)	—	108 m (355 ft)	—	N	N	EDS

Category II												
Distance to Bedrock or Water Table from Ground Surface: Greater than 1.2 m (4 ft)												
Depth of Permeable Soil from Ground Surface: 0.3 to 0.6 m (1 to 2 ft)												
System Description	Minimum Trench Width	Number of Bedrooms								Slope %		
		2		3		4		5		<5	5-30	>30
		Standard	LF	Standard	LF	Standard	LF	Standard	LF			
1. Multiple Trench System	0.6 m (2.0 ft)	110 m (360 ft)	88 m (288 ft)	134 m (440 ft)	108 m (352 ft)	162 m (530 ft)	130 m (425 ft)	180 m (590 ft)	144 m (473 ft)	Y	P	EDS
2. Alternative Multiple Trench System	0.6 m (2.0 ft)	85 m (280 ft)	68 m (224 ft)	110 m (360 ft)	88 m (288 ft)	134 m (440 ft)	108 m (352 ft)	162 m (530 ft)	130 m (425 ft)	Y	P	N
3. Contour System Type C2 and Type C3	0.9 m (3.0 ft)	37 m (120 ft)	—	46 m (150 ft)	37 m (120 ft)	57 m (187 ft)	46 m (150 ft)	71 m (235 ft)	57 m (187 ft)	N	Y	EDS
4. Chamber System Multiple Trench	0.9 m (3.0 ft)	53 m (175 ft)	—	69 m (225 ft)	—	86 m (280 ft)	—	100 m (328 ft)	—	Y	P	EDS
5. EZ flow System ¹ Multiple Trench	0.6 m (2.0 ft)	74 m (243 ft)	—	90 m (296 ft)	—	108 m (355 ft)	—	120 m (395 ft)	—	N	N	EDS

Category III												
Distance to Bedrock from Ground Surface: 0.6 to 1.2 m (2 to 4 ft)												
Depth of Permeable Soil from Ground Surface: 0.6 to 1.2 m (2 to 4 ft)												
System Description	Minimum Trench Width	Number of Bedrooms								Slope %		
		2		3		4		5		<5	5-30	>30
		Standard	LF	Standard	LF	Standard	LF	Standard	LF			
1. Multiple Trench System	0.6 m (2.0 ft)	85 m (280 ft)	68 m (224 ft)	110 m (360 ft)	88 m (288 ft)	134 m (440 ft)	108 m (352 ft)	162 m (530 ft)	130 m (425 ft)	Y	P	N
2. Alternative Multiple Trench System	0.6 m (2.0 ft)	67 m (220 ft)	54 m (176 ft)	91 m (300 ft)	73 m (240 ft)	116 m (380 ft)	93 m (305 ft)	140 m (460 ft)	112 m (368 ft)	Y	P	N
3. Contour System Type C1 and Type C3	0.9 m (3.0 ft)	30 m (100 ft)	—	37 m (120 ft)	—	49 m (160 ft)	40 m (130 ft)	61 m (200 ft)	49 m (160 ft)	N	P	EDS
4. Contour System Type C2	0.9 m (3.0 ft)	30 m (100 ft)	—	37 m (120 ft)	—	49 m (160 ft)	40 m (130 ft)	61 m (200 ft)	49 m (160 ft)	N	Y	EDS
5. Chamber System Multiple Trench	0.9 m (3.0 ft)	43 m (138 ft)	—	55 m (175 ft)	—	69 m (225 ft)	—	80 m (262 ft)	—	Y	P	N
6. EZ flow System ¹ Multiple Trench	0.6 m (2.0 ft)	57 m (187 ft)	—	74 m (243 ft)	—	90 m (296 ft)	—	108 m (355 ft)	—	N	N	EDS

Category III
 Distance to Bedrock from Ground Surface: 0.6 to 1.2 m (2 to 4 ft.)
 Depth of Permeable Soil from Ground Surface: 0.3 to 0.6 m (1 to 2 ft.)

System Description	Minimum Trench Width	Number of Bedrooms								Slope %		
		2		3		4		5		<5	5-30	>30
		Standard	LF	Standard	LF	Standard	LF	Standard	LF			
1. Multiple Trench System	0.6 m (2.0 ft.)	110 m (360 ft)	88 m (288 ft)	134 m (440 ft)	108 m (352 ft)	162 m (530 ft)	130 m (425 ft)	180 m (590 ft)	144 m (473 ft)	Y	P	N
2. Alternative Multiple Trench System	0.6 m (2.0 ft.)	85 m (280 ft)	68 m (224 ft)	110 m (360 ft)	88 m (288 ft)	134 m (440 ft)	108 m (352 ft)	162 m (530 ft)	130 m (425 ft)	Y	P	N
3. Contour System Type C1	0.9 m (3.0 ft)	37 m (120 ft)	—	46 m (150 ft)	37 m (120 ft)	57 m (187 ft)	46 m (150 ft)	71 m (235 ft)	57 m (187 ft)	N	P	EDS
4. Contour System Type C2 and Type C3	0.9 m (3.0 ft)	37 m (120 ft)	—	46 m (150 ft)	37 m (120 ft)	57 m (187 ft)	46 m (150 ft)	71 m (235 ft)	57 m (187 ft)	N	Y	EDS
5. Chamber System Multiple Trench	0.9 m (3.0 ft)	53 m (175 ft)	—	69 m (225 ft)	—	86 m (280 ft)	—	100 m (328 ft)	—	Y	P	EDS
6. EZ _{flow} System ¹ Multiple Trench	0.6 m (2.0ft)	74 m (243 ft)	—	90 m (296 ft)	—	108 m (355 ft)	—	120 m (395 ft)	—	N	N	EDS

Category III
 Water Table 0.6 to 1.2 m (2 to 4 ft)

System Description	Minimum Trench Width	Number of Bedrooms								Slope %		
		2		3		4		5		<5	5-30	>30
		Standard	LF	Standard	LF	Standard	LF	Standard	LF			
All systems to be designed by a Professional Engineer	EDS	EDS	EDS	EDS	EDS	EDS	EDS	EDS	EDS	EDS	EDS	

Category IV
 Distance to Bedrock from Ground Surface is greater than 0.3 m (1 ft.)
 Depth of Permeable Soil from Ground Surface: 0.0 to 0.3 m (0 to 1 ft.)
 Note: Where the distance to Water Table from Ground Surface is less than 1.2 m (4 ft.) the system is to be designed by a Professional Engineer

System Description	Minimum Trench Width	Number of Bedrooms								Slope %		
		2		3		4		5		<5	5-30	>30
		Standard	LF	Standard	LF	Standard	LF	Standard	LF			
1. Multiple Trench System	0.6 m (2.0 ft.)	110 m (360 ft)	88 m (288 ft)	134 m (440 ft)	108 m (352 ft)	162 m (530 ft)	130 m (425 ft)	180 m (590 ft)	144 m (473 ft)	Y	P	N
2. Alternative Multiple Trench System	0.6 m (2.0 ft.)	85 m (280 ft)	68 m (224 ft)	110 m (360 ft)	88 m (288 ft)	134 m (440 ft)	108 m (352 ft)	162 m (530 ft)	130 m (425 ft)	Y	P	N
4. Contour System Type C1 and Type C2	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N	N	N
4. Contour System Type C3	0.9 m (3.0 ft)	37 m (120 ft)	—	46 m (150 ft)	37 m (120 ft)	57 m (187 ft)	46 m (150 ft)	71 m (235 ft)	57 m (187 ft)	N	Y	EDS
5. Chamber System Multiple Trench	0.9 m (3.0 ft)	53 m (175 ft)	—	69 m (225 ft)	—	86 m (280 ft)	—	100 m (328 ft)	—	Y	P	EDS
6. EZ _{flow} System ¹ Multiple Trench	0.6 m (2.0 ft)	74 m (243 ft)	—	90 m (296 ft)	—	108 m (355 ft)	—	120 m (395 ft)	—	N	N	EDS

Category V
 Distance to Bedrock from Ground Surface is less than 0.3 m (1 ft.)
 Distance to water table is less than 0.6 m (2 ft.)

System Description	Minimum Trench Width	Number of Bedrooms								Slope %		
		2		3		4		5		<5	5-30	>30
		Standard	LF	Standard	LF	Standard	LF	Standard	LF			
Development of sewage disposal systems is not permitted in this Category	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

- LF 20% reduction for low flow fixtures (6L toilets)
 EDS Engineered Designed System
 Y "Yes" - System type permitted
 P "Possible" - System is permitted depending on slope
 N "No" - System type not permitted
 N/A Not Applicable
- ¹ An allowance of a 1/3 reduction from a standard multiple trench system is permitted for the EZ_{flow} system. This is for a double line format with the second line being the aggregate line only (no pipe).
² Systems in this category will require the addition of Good Quality Fill.
³ Systems in this category will require the addition of a minimum of 1.2 meters (4 feet) of Good Quality Fill.
- Notes:**
- Systems up to 5 bedrooms (2,270 L/day) can be selected by a Licensed Contractor and a Site Assessor from the above table.
 - Systems greater than 5 bedroom and up to 6810 L/day (1500 lgal/day) can be determined by using Design Flow table, Schedule B and the above table in Schedule D.
 - Systems greater than 6810 L/day (1500 lgal/day) shall be designed by a Professional Engineer Licensed to practice in Prince Edward Island.
 - For septic tank sizing refer to Table 1.1 Minimum capacity of Septic Tanks for Dwellings.

EXPLANATORY NOTES

SECTION 1 defines terms used in these regulations.

SECTION 2 confirms that the Schedule to these regulations forms part of the regulations and requires a septic contractor to ensure the requirements of the Schedule are met in respect of the installation, reconstruction or modification of a sewage disposal system, except where otherwise provided.

SECTION 3 provides for a person who holds a septic contractor's licence to install, reconstruct or modify a sewage disposal system. It sets out the licence application process, term of the licence, renewal requirements, terms and conditions of the licence and an exception in respect of obtaining or renewing a licence.

SECTION 4 prohibits anyone other than an engineer or environment officer from conducting a site suitability assessment unless the person has a site assessor's licence. It sets out the licence application process, term of the licence and renewal requirements.

SECTION 5 provides for the registration of an installer and sets out the term of the registration, renewal requirements, and terms and conditions of the registration.

SECTION 6 prohibits a person from cleaning a sewage disposal system or disposing of septage or unstabilized sewage without a pumper's licence. It sets out the licence application process, term of the licence and renewal requirements.

SECTION 7 sets out, in respect of site suitability and system specifications, the duties of the person who conducts a site suitability assessment and the septic contractor who selects the system, where a sewage disposal system with a flow of 6,810 litres per day or less is required.

SECTION 8 sets out, in respect of site suitability and system design, the duties of the person who conducts a site suitability assessment and the engineer who designs the system, where a sewage disposal system with a flow greater than 6,810 litres per day is required.

SECTION 9 states that a site suitability assessment registration form and a sewage disposal system registration form shall be in the form and contain the information required by the Minister.

SECTION 10 sets out the requirements to be met before installing a sewage disposal system.

SECTION 11 sets out the requirements to be met before reconstructing or modifying a sewage disposal system.

SECTION 12 authorizes the Minister to make various orders in relation to the installation, reconstruction or modification of a sewage disposal system.

SECTION 13 requires a septic contractor or an installer to be present on site during the installation, reconstruction or modification of a sewage disposal system.

SECTION 14 requires a septic contractor or an engineer, as the case may be, to issue a certificate of compliance within 60 days of the completion of the installation, reconstruction or modification of a sewage disposal system.

SECTION 15 sets out record keeping and reporting requirements for a pumper.

SECTION 16 prohibits a pumper from placing septage in a holding site without the prior approval of the Minister and prohibits the disposal of

unstabilized sewage or septage except through a wastewater treatment system.

SECTION 17 provides for the decommissioning of a sewage disposal system.

SECTION 18 provides that a reference in an enactment to the former regulations under the *Environmental Protection Act* is to be read as a reference to these regulations.

SECTION 19 provides for the commencement of these regulations.

EC2021-505

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 (cBOD5)” means carbonaceous matter that consumes, by biochemical oxidation, oxygen dissolved in water;	carbonaceous biochemical oxygen demand (cBOD5)
(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
(i) “detailed chemical analysis”, in relation to a water quality sample, means an analysis conducted in accordance with section 2 of Schedule C;	detailed chemical analysis
(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;	direct responsible charge experience or DRC experience
(k) “effluent” means wastewater that is discharged from a wastewater treatment facility;	effluent
(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;	Effluent Regulatory System (ERRIS)
(m) “engineer” means a person who is authorized to practise professional engineering in the province;	engineer

- (n) “facility” means a water treatment facility, water distribution facility, wastewater treatment facility or wastewater collection facility; facility
- (o) “facility classification certificate” means a valid facility classification certificate issued pursuant to section 2 or 3 or the preceding regulations; facility classification certificate
- (p) “general chemical analysis”, in relation to a water quality sample, means an analysis conducted in accordance with section 1 of Schedule C; general chemical analysis
- (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; Guidelines for Canadian Drinking Water Quality
- (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; hydraulic retention time
- (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; intermittent wastewater treatment facility
- (t) “licence” means a licence to operate a facility issued by the Minister under subsection 5(2); licence
- (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; modification
- (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 water distribution facility; 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
- (gg) “total residual chlorine” means the sum of free chlorine and combined chlorine, including inorganic chloramines; total residual chlorine
- (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; total suspended solids (TSS)
- (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 collection 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; wastewater treatment 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 distribution 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. water treatment facility
- (2) For greater certainty, Schedules A, B, C, D and E to these regulations form part of these regulations. Schedules form part of regulations
- PART 2 - CONSTRUCTION OR MODIFICATION OF FACILITIES**
- 2.** (1) Subject to subsection (2), a permit issued pursuant to this section is required to construct or modify a facility. Requirement for permit
- (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 Exception
- (a) standard specifications and procedures, acceptable to the Minister, have been developed for the work; and
- (b) an engineer employed by the owner of the facility is overseeing the undertaking.
- (3) An engineer may apply for a permit to construct or modify a facility by submitting to the Minister a design package that contains Application
- (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) the fee set out in Schedule D has been paid.
- (5) After substantially 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) within 180 days of substantial completion, record drawings of the work completed, prepared in a manner satisfactory to the Minister; and

- (b) within 30 days of substantial completion, a letter of substantial completion, 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.
- (8) A facility classification certificate is valid unless or until it is revoked or replaced by the Minister.
- Validity of certificate
- 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
- Facility not classified or system not registered
- (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.
- (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.
- Classification or registration
- 4.** (1) A permit issued under this section is required to undertake any of the following activities:
- Other activities requiring a permit
- (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.
- (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).
- Application
- (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
- Issuance of permit
- (a) the activity will not cause an adverse effect; and
 - (b) the fee set out in Schedule D has been paid.
- (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:
- Permit not required for maintenance

- (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) the fee set out in Schedule D has 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) the fee set out in Schedule D has 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 meets the requirements of subsection (3), and provide that operator's name and contact information to the Minister.

Operator's
certification
requirement

(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.

Alternate operator-
in-charge

(3) To act as the operator-in-charge of a facility, a person shall hold

Level of
classification
required

- (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).

(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.

Temporary permit

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

Exception, small
water distribution
facility

- (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

- 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. Operator's certificate
- (2) On receipt of an application in accordance with subsection (1), the Minister may issue a particular type and class of operator's certificate to an applicant who Issuance of operator's certificate
- (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 set out in Schedule D and successfully completes an examination approved by the Minister; and
- (c) pays the fee for an operator's certificate set out in Schedule D.
- (3) Notwithstanding subsection (2), the Minister may issue an operator's certificate to an applicant who Certification outside the province
- (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 the fee for an operator's certificate set out in 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 the fee set out in Schedule D, the Minister may renew an operator's certificate if the Minister is satisfied that, Renewal of operator's certificate
- (a) where the application is to renew a small water distribution facility operator's certificate, 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, 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, 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 set out in Schedule D and successfully completes an examination approved by the Minister; and
- (b) pays the fee for an operator's certificate set out in Schedule D.
- (9) The Minister may make available to the public, in the form and through the means the Minister believes is appropriate, the name and type and class of certification of an operator. Disclosure of certification information

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 components of any facilities under its control and submit an assessment Assessment report every 5 years

report on the status of the system to the Minister at least once every five years.

(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

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

Assessment report, municipal water supply system

(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 water quality results of untreated water from production wells and water in the water distribution facility 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 water distribution facility or in water demand by customers in comparison with system capacity; and

(e) any additional information the Minister may require.

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

Assessment report, municipal wastewater treatment system

(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.

(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 for non-municipal system

(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

Assessment report to address concerns

(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 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.

Meaning of “water treatment

(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.

Standards to be met

(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.

Primary disinfection requirement - very small and small facilities

(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.

Primary disinfection requirements - Class I, II, III or IV facility

(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.

Exception may be permitted

(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.

Procedure related to credit

(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.

Free chlorine residual requirement - Class I, II, III or IV facility

(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.

Removal of chemical constituents

(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.

Plan to meet requirements may be required

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 water distribution facility, 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 water distribution facility, 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 requirements - free chlorine residual
- (a) at least 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 are collected from the water distribution facility and analyzed for the presence of coliform bacteria and E. coli, with the intervals between sampling not exceeding two weeks;
 - (b) at least 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) at least one water quality sample per year is collected from each source of supply and at least two locations in the water distribution facility and subjected to a general chemical analysis;
 - (d) at least one water quality sample every three years is collected from each source of supply and at least two locations in the water distribution facility and subjected to a detailed chemical analysis;
 - (e) at least one measurement per week is made of the disinfection residual at representative points within the water distribution facility, 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.
- 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 semi-public supply
- (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 Sampling requirements - part-time operation of very small or small facility

supply and at least two sites within the water distribution facility and analysed for the presence of coliform bacteria and E. coli.

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.

Analysis requirements

(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.

Submission 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.

Notification of certain results

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 and the Minister, 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 water 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 receipt by the owner or operator, the results of a drinking water analysis of water in the water distribution facility, conducted by a laboratory other than the PEI Analytical Laboratories, where total coliform bacteria exceeds 10 cfu/100 mls, or any E. coli or faecal coliform organisms are detected;

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

(c) immediately, all cases where equipment failure or another 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 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

- 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 m³ 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. Flow measurement-
-continuous flow
wastewater
treatment system
- (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. Maintain flow
measuring device
- (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
may be approved
- (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. Alternate method no
longer permitted
- (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. Requirements for
certain facilities

Effluent Quality Standards

- 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. Point where effluent
quality standards
apply
- (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. In case of man-
made wetland
- 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: Effluent quality
standards
- (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) 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°C ± 1°C as determined when the temperature of the sample has been adjusted to 15°C ± 1°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 (NH₃) plus ionized ammonia (NH₄⁺) 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 2,500 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.
- (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.
- Certain results not taken into account
- 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.
- Exception, other standards
- 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,
- Application for permit for temporary bypass
- (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.
- (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.
- Issuance of permit
- (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.
- Conditions
- (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.
- Suspension or alteration of effluent quality standards

- (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 discharges effluent to a watercourse at an average daily rate of 17,500 m³ or more shall ensure that

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

- (a) composite samples are collected and analysed for carbonaceous biochemical oxygen demand (cBOD5) and total suspended solids (TSS) at least once per week, with the interval between sampling being at least five days;
- (b) a grab sample is collected and analysed for faecal coliform organisms at least once per week, with the interval between sampling being at least five days; and
- (c) composite samples are collected and analysed for total ammonia, total phosphorous and total nitrogen at least once per quarter each year, with the interval between sampling being at least 60 days.

(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 is less than 17,500 m³, shall ensure that

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

- (a) composite samples are collected and analysed for carbonaceous biochemical oxygen demand (cBOD5) and total suspended solids (TSS) at least once every two weeks, with the interval between sampling being at least seven days;
- (b) 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; and
- (c) composite samples are collected and analysed for total ammonia, total phosphorous and total nitrogen at least once per quarter, with the intervals between sampling being at least 60 days.

(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

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

- (a) 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
- (b) a grab sample is collected and analysed for faecal coliform organisms,

at least once per quarter each year, with the intervals between sampling being at least 60 days.

(4) The owner of an intermittent wastewater treatment facility shall ensure that

Intermittent wastewater treatment facility

- (a) 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
- (b) a grab sample is collected and analysed for faecal coliform organisms,

as directed by the Minister.

(5) The owner of a wastewater treatment facility shall ensure that acute lethality testing is completed at least once per quarter each year 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

Acute lethality testing requirements

- (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;
- (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;

(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.

(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.

Report re acutely lethal effluent

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.

Monitoring requirements may be condition of licence

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.

Analysis required

(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 receipt of the results.

Submission of certain results

Reporting and Disclosure of Information

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 and the Minister, at least once per year.

Reporting of analyses required

(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 June 16, 2021.

Commencement

SCHEDULE A

CLASSIFICATION OF FACILITIES

- 1.** (1) A facility shall be characterized as one of the following types: Types of facilities
- (a) water treatment facility (WT);
 - (b) water distribution facility (WD);
 - (c) wastewater treatment facility (WWT);
 - (d) wastewater collection facility (WWC).
- (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. Water distribution or treatment facility
- (3) A wastewater facility with only collection, lift stations and a gravity sewer main shall be considered a wastewater collection facility. Wastewater collection facility
- (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. Not a treatment facility
- 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. Water distribution or wastewater collection facility classifications
- (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. Small or very small water distribution facility
- (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. Exception, campground
- (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. Size of population served < 500
- 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. Water or wastewater treatment classifications

**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: • 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 e.g downstream outfall(1 point)	1
• Backwash recovery/recycling: discharge to basin or lagoon and then to source (2 points)	2
• Backwash recovery/recycling: discharge to basin or lagoon and then to plant intake (3 points)	3
Instrumentation	
• 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
• The use of SCADA or similar instrumentation systems to provide data with limited process operation – e.g. remote shutdown capability.	1
• 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
• 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, electrodialysis 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
• More advanced determinations such as specific constituents; nutrients, total oils, phenols	7
• Instrumentation such as atomic absorption, gas chromatography	10

**SCHEDULE B
OPERATOR CERTIFICATION**

1. The types of operator certification are as follows:

Types of operator certification

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

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 water distribution facility 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.

Classes of other operator certificates

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

Education requirements

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

(2) The following are considered equivalent to Grade 12:

Grade 12 equivalent

- (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) other four-year university degree programs, 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.

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.

Substitution of DRC experience for education

(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.

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

Experience requirements

1.0

1.1 **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)

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

No substitutions for Level I

(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.

Substitutions for Levels II, III, and IV

(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 credit - how granted

(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.

Operating experience to be verified

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

Meaning of operating experience

(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.

Meaning of hands-on

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).

(2) DRC experience may only be obtained after an operator has Class II operator certification.

Only after Level II obtained

(3) For Class III operator certification, an operator shall obtain the required DRC experience in a Class II or higher facility.

Level III 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.

Level IV requirements

(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.

Substitution of post-secondary education

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.

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

- (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.

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

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

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

- (a) benzo[a]pyrene;
- (b) bromodichloromethane;
- (c) bromoform;

- (d) chloramines;
- (e) chlorodibromomethane;
- (f) chloroform;
- (g) total trihalomethanes.

**SCHEDULE D
FEES**

Purpose of Fee	Regulation Provision	Fee
1. Permit to construct or modify facility, per cost of project: (a) < \$200,000; (b) \$200,000 to \$999,999; (c) \$1,000,000 and above.	2(4)(b)	\$100 \$500 \$1,000
2. Permit to undertake activity described in subsection 4(1).	4(3)(b)	\$50
3. Licence to operate facility: (a) Very small or small facility; (b) Class I or II facility; (c) Class III or IV facility.	5(2)(d); 5(4)(c)	\$50 \$250 \$500
4. Examination.	8(2)(b); 8(8)(a)	\$100
5. Operator's certificate.	8(2)(c); 8(3)(b); 8(8)(b)	\$50

SCHEDULE E

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

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: Standards
- (a) for health-based standards for materials and devices in contact with drinking water:
 - (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:
 - (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.
- (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. Log reduction credits
- (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 10(4) of these regulations by using Primary disinfection
- (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.
- (4) Compliance with the primary disinfection requirements for drinking water when using a chemical disinfectant requires that a CT Chlorine or chlorine dioxide disinfection

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.

(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. CT value

(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. How calculated

(7) The factor “T” is calculated by multiplying the theoretical hydraulic 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. “T” factor

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

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

Table 2 - Baffling Factors to be used for calculation of contact times (T)		
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

(9) Compliance with the primary disinfection requirements for drinking water when using an ultra-violet disinfection requires that a UV Ultraviolet (UV) disinfection

dose is maintained that meets or exceeds the required log reduction of viruses taken from Table 3, below.

(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. UV dose 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. Basis for calculation

Table 3 - UV Dose Values for inactivation of viruses	
Log Inactivation	UV Dose (mJ/cm^2)*
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.

EXPLANATORY NOTES

SECTION 1 defines terms used in these regulations and confirms that the schedules to the regulations form part of the regulations.

SECTION 2 states that a permit is required to construct or modify a facility, subject to an exception outlined in subsection (2). It provides for an application for and issuance of a permit and sets out document filing requirements to be met on completion of the construction or modification. It provides for the Minister to classify or consider the existing classification of the facility and ensure the registration of the system of which it is a part.

SECTION 3 provides for an application for the classification of a facility or the registration of a system that has not previously been classified or registered, as the case may be.

SECTION 4 states that a permit is required to undertake specified activities. It provides for an application for and issuance of a permit and clarifies certain activities that do not require a permit.

SECTION 5 states that a licence is required to operate a facility. It provides for an application for and issuance of a licence. It also provides for an application for and renewal of a licence on its expiry five years after issuance.

SECTION 6 requires the owner of a facility for which a facility classification certificate has been issued to designate an operator-in-charge of the facility and provide that operator's name and contact information to the Minister. It requires the owner to designate an alternate operator-in-charge when necessary. It requires an operator-in-charge to be certified to operate a facility of the type and classification of the facility in question. It provides for the issuance of a temporary permit to an operator-in-charge where the classification of the facility is increased to a level above the certification of the operator-in-charge.

SECTION 7 sets out an exception to the requirements in section 6, in respect of the qualifications of the operator-in-charge of a very small water distribution facility.

SECTION 8 provides for the application for and issuance of an operator's certificate. It also provides for the renewal and reinstatement of an operator's certificate.

SECTION 9 requires the assessment and report on the assessment of municipal systems at least once every five years and sets out the requirements for the reports. It also provides for the Minister to request an assessment and report on the assessment of a non-municipal system or any system in specified circumstances. The Minister may require the submission of a plan to address issues identified in an assessment.

SECTION 10 sets out water treatment requirements and standards for water supply systems.

SECTION 11 requires that all water supply systems and semi-public drinking water supplies are monitored for water quality.

SECTION 12 requires that the assessment of water quality monitoring results is based on recommendations in the Guidelines for Canadian Drinking Water Quality or, in the absence of the guidelines, the advice of the Chief Public Health Officer.

SECTION 13 sets out the water quality sampling requirements for a semi-public drinking water supply.

SECTION 14 sets out the water quality sampling requirements for a very small water distribution facility and a small water distribution facility.

SECTION 15 sets out the water quality sampling requirements for a Class I, II, III or IV water distribution facility.

SECTION 16 sets out additional water quality sampling requirements for a seasonal semi-public drinking water supply and a seasonal very small or small water distribution facility.

SECTION 17 requires water quality samples to be analysed by a laboratory accredited by the Standards Council of Canada or an accreditation body approved by the Minister. Where a water quality sample is analysed at a laboratory other than PEI Analytical Laboratories, the results shall be submitted to the Minister within five business days of the analysis, except where E.coli is indicated, which shall be reported immediately.

SECTION 18 requires the owner of a water supply system to report the results of water quality analyses to customers and the Minister at least once per year. It requires the owner of a water supply system or a semi-public drinking water supply to keep records of all water quality analyses for at least five years. It provides for the Minister to make any results or reports public.

SECTION 19 sets out reporting requirements in the event of specified contamination or system failure of a water supply system.

SECTION 20 sets out effluent flow monitoring requirements in respect of a continuous flow wastewater treatment system.

SECTION 21 provides the effluent quality standards apply at the end of the discharge pipe and clarifies where the end is located.

SECTION 22 prohibits the discharge of effluent with specified characteristics to a watercourse and sets out how certain measurements are to be determined.

SECTION 23 provides for the Minister to require compliance with alternative effluent quality standards as a term and condition on a licence to operate certain wastewater treatment facilities.

SECTION 24 provides for the application for and issuance of a permit to temporarily bypass a portion or all of a wastewater treatment process for specified purposes.

SECTION 25 sets out wastewater quality sampling requirements for continuous flow wastewater treatment systems with various hydraulic retention times and discharge rates.

SECTION 26 provides for the Minister to require compliance with alternative wastewater quality sampling requirements as a term and condition on a licence to operate certain wastewater treatment facilities.

SECTION 27 requires wastewater quality samples to be analysed by a laboratory accredited by the Standards Council of Canada or an accreditation body approved by the Minister. Where a wastewater quality sample is analysed at a laboratory other than PEI Analytical Laboratories, the results shall be submitted to the Minister within five business days of the analysis.

SECTION 28 requires the owner of a wastewater treatment facility to report the results of analyses of effluent to customers and the Minister at least once per year and keep records of the analyses for at least five years.

SECTION 29 provides that the results of analyses of effluent and wastewater flow measurements are considered public information that the Minister may make available to the public and the owner of a wastewater treatment facility shall make available to an environment officer on request. These results shall also be submitted to ERRIS. It also requires that the discharge of effluent at rates or volumes above allowable limits or that fails to meet effluent quality standards shall be reported to the Minister.

SECTION 30 provides for the commencement of these regulations.

EC2021-506

WATER ACT WATER WITHDRAWAL REGULATIONS

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

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) “geothermal well” means a well made for geothermal purposes only; | geothermal well |
| (c) “groundwater exploration permit” means a valid and current permit issued pursuant to section 2; | groundwater exploration permit |
| (d) “high capacity well” means a well that is or is designed to be pumped at a rate of 345 cubic metres per day or more, except where otherwise provided; | high capacity well |
| (e) “low capacity well” means a well that is or is designed to be pumped at a rate greater than 25 cubic metres per day but less than 345 cubic metres per day; | low capacity well |
| (f) “open-loop system” means an earth energy system designed to use groundwater or surface water for the purpose of extracting or rejecting heat by use of a liquid-source heat pump; | open-loop system |
| (g) “return well” means a well that, as part of an open-loop system, accepts discharge water and returns it to the aquifer from which it was withdrawn; | return well |
| (h) “water withdrawal permit” means a valid and current permit issued pursuant to section 5. | water withdrawal permit |

(2) In these regulations, a reference to the drilling, construction or reconstruction of, or the withdrawal of water from, a high capacity well for the purpose of agricultural irrigation, does not include the drilling, construction or reconstruction of, or the withdrawal of water from, a high capacity well for the purpose of research approved by the Minister in respect of agricultural irrigation.

agricultural irrigation does not include research

(3) For greater certainty, the diversion of water within a watercourse or wetland for the purpose of maintaining a dewatered work area located in whole or in part in the watercourse or wetland is not considered to be a withdrawal of water from a watercourse or wetland.

Diversion not considered withdrawal

GROUNDWATER EXPLORATION PERMIT

2. (1) For the purpose of section 48 of the Act, a person may undertake the drilling, construction or reconstruction of a high capacity well or a well that supplies or is designed to supply water to a water supply system, if the person holds a groundwater exploration permit.

Groundwater exploration permit required, high capacity well or water supply system

(2) The owner of the land on which a high capacity well or a well that supplies or is designed to supply water to a water supply system is to be drilled, constructed or reconstructed, or a person who has the written permission of the owner, may apply to the Minister for a groundwater exploration permit.

Application for groundwater exploration permit

(3) On receipt of an application in the form required by the Minister and any fee required in the Schedule to these regulations, the Minister may issue a groundwater exploration permit to the applicant if the Minister is satisfied that the drilling, construction or reconstruction of the well

Issuance of groundwater exploration permit

- (a) will not have an unacceptable adverse effect; and
- (b) is consistent with the policies and objectives of the Minister with respect to managing and conserving water resources in the watershed in which the well is or is to be located.

(4) In determining whether the drilling, construction or reconstruction of the well will have an unacceptable adverse effect, the Minister shall consider the following factors in respect of the watershed in which the well is or is proposed to be located,

Factors determining unacceptable adverse effect

- (a) the availability of water in the watershed;
- (b) the proximity of the well to other wells, watercourses and wetlands in the watershed; and
- (c) the potential impact of the well on the watershed and on other wells, watercourses and wetlands in the watershed.

(5) Notwithstanding subsection (3), a groundwater exploration permit shall not be issued for the drilling, construction or reconstruction of a high capacity well for the purpose of agricultural irrigation, except in respect of the reconstruction of a high capacity well from which the withdrawal of water for the purpose of agricultural irrigation was authorized under the *Environmental Protection Act* R.S.P.E.I. 1988, Cap. E-9, immediately before the coming into force of this subsection.

No permit for agricultural irrigation purposes

(6) A groundwater exploration permit authorizes the permit holder to drill, construct or reconstruct a high capacity well or a well that supplies or is designed to supply water to a water supply system to explore its viability and the possible effects of the withdrawal of water from the well on water resources and related aspects of human or animal health or on an aquatic ecosystem.

Purpose of groundwater exploration permit

(7) A groundwater exploration permit shall be valid for a period of one year from the date of issuance, unless sooner revoked.

Validity period

(8) Where activities authorized under a groundwater exploration permit have commenced but have not been completed before the expiry of the permit, the holder of the permit may apply to the Minister, in the form required by the Minister and accompanied by any fee required in the Schedule to these regulations, to extend the permit for a period of up to one year.

Extension of validity

(9) A groundwater exploration permit shall not be extended more than once.

No second extension

(10) The holder of a groundwater exploration permit shall ensure that a copy of all data, reports and other information obtained pursuant to an activity conducted under the permit are submitted to the Minister within 30 days of the completion of the activity.

Requirement to submit data, reports, other information

WATER WITHDRAWAL PERMIT

3. No person shall withdraw water from a well, watercourse or wetland for the purpose of supplying water to a water supply system unless the person holds a water withdrawal permit.

Prohibition, withdrawal to supply water supply system

4. (1) For the purpose of section 40 of the Act, a person may withdraw water from a well, watercourse or wetland at a rate that exceeds 25 cubic metres per day, if the person holds a water withdrawal permit.

Water withdrawal permit required, > 25 m³/day

(2) For the purpose of subsection (1), where a person withdraws water from more than one well, watercourse location or wetland location, or from a combination of these and

Rate of withdrawal, multiple sources

(a) the water is directed to a single water supply or water storage structure, such as a water transmission line or a holding pond;

(b) in the case of multiple wells, the wells are within a radius of 15 metres of each other; or

(c) the effect of the water withdrawal on groundwater is similar to that which would occur as a result of withdrawal from a single well, the total water withdrawn by the person from all of these sources shall be included in calculating the rate of withdrawal per day from each source.

(3) Notwithstanding subsection (1), a water withdrawal permit is not required to withdraw water from a geothermal well that forms part of an open-loop system, provided that

Exception, geothermal well

(a) the difference between the rate at which water is withdrawn from the well and the rate at which water is returned to a return well in the system is 25 cubic metres per day or less; and

(b) the maximum rate at which water is withdrawn from the well is less than 345 cubic metres per day.

(4) Notwithstanding subsection (1), a water withdrawal permit is not required to withdraw water from a watercourse or wetland at a rate that exceeds 25 cubic metres per day for the purpose of fire suppression.

Exception, fire suppression

(5) Notwithstanding subsection (1), but subject to subsection (6), a water withdrawal permit is not required to withdraw water from a well, watercourse or wetland at a rate that exceeds 25 cubic metres per day for any of the following purposes:

Exception, permit not required for certain uses

(a) to fill a swimming pool not exceeding 100 cubic metres in volume;

(b) to fill a mobile container for use in the application of crop protectants;

(c) to fill a mobile container for use in dust suppression or similar activities on roads;

(d) to remediate contaminated water, as part of a remedial action plan approved by the Minister under the *Environmental Protection Act* Petroleum Hydrocarbon Remediation Regulations (EC655/06).

(6) A person shall not withdraw water from a watercourse at a rate that exceeds 25 cubic metres per day for a purpose described in subsection (5) without a permit where the minimum width of the water in the watercourse at the time and location of the withdrawal is less than one metre.

Exception does not apply

5. (1) The owner of land adjacent to a watercourse or on which a well or wetland is located, or a person with the written permission of the owner, may apply to the Minister for a water withdrawal permit to withdraw water from the well, watercourse or wetland.

Application for water withdrawal permit

(2) The Minister may require an applicant to do any of the following in support of an application:

Minister may require tests, data, information or plan

(a) conduct tests, collect data or obtain information;

(b) submit test results, data or information to the Minister;

(c) submit a drought contingency plan, acceptable to the Minister, for reduced water use during drought conditions.

(3) On receipt of an application in the form required by the Minister and any fee required in the Schedule to these regulations, and on compliance with any requirements under subsection (2), the Minister may issue a water withdrawal permit to the applicant if the Minister is satisfied that the withdrawal of water from the well, watercourse or wetland for the purpose of supplying a water supply system or at a rate that exceeds 25 cubic metres per day, as the case may be,

Issuance of water withdrawal permit

- (a) will not have an unacceptable adverse effect; and
- (b) is consistent with the policies and objectives of the Minister with respect to managing and conserving water resources in the watershed in which the well, watercourse or wetland is located.

(4) In determining whether the withdrawal of water will have an unacceptable adverse effect, the Minister shall consider the following factors:

Factors determining unacceptable adverse effect

- (a) in respect of the watershed in which the well, watercourse or wetland is located and adjacent watersheds,
 - (i) the cumulative effect on the watersheds of the withdrawal of water from all sources within the watershed,
 - (ii) the potential effect of the withdrawal of the water on the aquatic ecosystems in the watersheds,
 - (iii) the sufficiency of water available to support the withdrawal of water from the watershed under existing permits and the permit under application,
 - (iv) the potential effect of the withdrawal of the water on other users of water in the watersheds, and
 - (v) the potential effect of the withdrawal of the water on water flow in any watercourse or wetland within the watersheds;
- (b) where the well, watershed or wetland is located in a water management area, the contents of any plan for the water management area;
- (c) where the well, watershed or wetland is located in a coastal area, the potential effect of the withdrawal of the water on salt water intrusion, and the potential effect of changes in salt water intrusion on other users of water in the coastal area.

(5) Notwithstanding subsection (4), the withdrawal of water is considered to have an unacceptable adverse effect where

Unacceptable adverse effect

- (a) the cumulative effect on a watershed of the withdrawal of water from all sources within the watershed results in the reduction of water flow in any watercourse or wetland in the watershed by an amount greater than the amount equal to 35% of the mean base flow in the watercourse or wetland during August and September; or
- (b) the cumulative amount of water withdrawn from a watercourse or wetland from a particular location and upstream of that location exceeds the amount equal to the difference between the monthly 70% flow duration and 70% of the median monthly flow in the watercourse or wetland, as the case may be.

(6) Where there is insufficient water in a watershed to permit the withdrawal of water for all purposes and meet the environmental flow needs of the aquatic environment in the watershed, the Minister shall prioritize the purposes for which water may be withdrawn from the watershed in descending order as follows:

Priority of uses

- (a) fire suppression;
- (b) domestic water use by individual household wells or through municipal water supply systems;
- (c) industrial, commercial or other water uses prioritized based on the degree to which the use serves the public interest.

(7) Notwithstanding subsection (3), a water withdrawal permit shall not be issued for the withdrawal of water from a high capacity well for the purpose of agricultural irrigation, except in respect of a high capacity well from which, immediately before the coming into force of this subsection, the withdrawal of water for the purpose of agricultural irrigation was authorized under the *Environmental Protection Act* or undertaken in circumstances described in subsection 4(2).

No permit for agricultural irrigation purposes

(8) In subsection (7), a high capacity well includes a well deemed to have a water withdrawal rate of 345 cubic metres or more per day under subsection 4(2).

Well considered high capacity

- 6.** (1) A water withdrawal permit shall state in respect of the withdrawal of water under the permit Terms of permit
- (a) the maximum rate at which the water may be withdrawn;
 - (b) the maximum amount of water that may be withdrawn within a specified period; and
 - (c) the purpose for which the water may be withdrawn.
- (2) No holder of a water withdrawal permit shall withdraw water from the well, watercourse or wetland covered by the permit at a rate, in an amount or for a purpose not authorized by the permit. Prohibition, withdrawal contrary to permit
- (3) Notwithstanding the terms of a water withdrawal permit, no holder of a water withdrawal permit shall withdraw water from the watercourse or wetland covered by the permit when the water flow in the watercourse or wetland is below the amount equal to 70% of the median monthly flow in the watercourse or wetland, as the case may be, except where the watercourse or wetland contains a pond located at the head of tide. Prohibition, withdrawal when low water flow
- (4) A water withdrawal permit may be valid for a period of up to five years and expires on the date stated on the permit, unless the Minister sooner revokes the permit or it becomes invalid under subsection (5). Validity of water withdrawal permits
- (5) A water withdrawal permit ceases to be valid when, in respect of the land adjacent to the watercourse or on which the well or wetland is located from which water is being withdrawn under the permit, Water withdrawal permit ceases to be valid
- (a) there is a change in ownership of the land; or
 - (b) where the holder of the permit is not the owner of the land, the owner of the land rescinds his or her permission, in writing, for the holder of the permit to withdraw water from the well, watercourse or wetland.
- 7.** The holder of a water withdrawal permit shall provide data collected from any flow measuring device or water level measuring device, or data respecting the calibration of these devices, as required by the Minister. Data to be provided on request
- 8.** (1) The holder of a water withdrawal permit may apply to the Minister, within the 60 days preceding or following the expiry of the permit, to renew the permit. Application to renew water withdrawal permit
- (2) The Minister may require an applicant to do any of the following in support of an application: Minister may require tests, data, information or plan
- (a) conduct tests, collect data or obtain information;
 - (b) submit test results, data or information to the Minister;
 - (c) submit a drought contingency plan, acceptable to the Minister, for reduced water use during drought conditions.
- (3) On receipt of an application in the form required by the Minister and any fee required in the Schedule to these regulations, and on compliance with any requirements under subsection (2), the Minister may renew a water withdrawal permit if the Minister is satisfied that the continued withdrawal of water from the well, watercourse or wetland, as the case may be, up to the same maximum rate and amount and for the same purpose Requirements for renewal
- (a) will not have an unacceptable adverse effect; and
 - (b) is consistent with the policies and objectives of the Minister with respect to managing and conserving water resources in the watershed in which the well, watercourse or wetland is located,
- and subsections 5(4), (5) and (6) apply, with any necessary changes.
- 9.** (1) The holder of a water withdrawal permit may apply to the Minister to amend the permit with respect to the maximum rate at which water may be withdrawn, the maximum amount of water that may be withdrawn within a specified period or the purpose for which the water may be withdrawn under the permit. Application to amend water withdrawal permit
- (2) The Minister may require an applicant to do any of the following in support of an application: Minister may require tests, data, information or plan
- (a) conduct tests, collect data or obtain information;
 - (b) submit test results, data or information to the Minister;
 - (c) submit a drought contingency plan, acceptable to the Minister, for reduced water use during drought conditions.

(3) On receipt of an application in the form required by the Minister and any fee required in the Schedule to these regulations, and on compliance with any requirements under subsection (2), the Minister may amend a water withdrawal permit if the Minister is satisfied that the withdrawal of water from the well, watercourse or wetland at the requested maximum rate, in the requested maximum amount or for the requested purpose

Requirements for amendment

(a) will not have an unacceptable adverse effect; and
(b) is consistent with the policies and objectives of the Minister with respect to managing and conserving water resources in the watershed in which the well, watercourse or wetland is located,
and subsections 5(4), (5) and (6) apply with any necessary changes.

(4) Notwithstanding subsection (3), a water withdrawal permit shall not be amended to authorize the withdrawal of water from a high capacity well for the purpose of agricultural irrigation.

No amendment for agricultural irrigation purposes

(5) In subsection (4), a high capacity well includes a well deemed to have a water withdrawal rate of 345 cubic metres or more per day under subsection 4(2).

Well considered high capacity

10. (1) The holder of a water withdrawal permit may apply to the Minister to transfer the permit to the owner of the land adjacent to the watercourse or on which the well or wetland is located from which water may be withdrawn under the permit, or to a person with the written permission of the owner of the land.

Application to transfer water withdrawal permit

(2) On receipt of an application from the holder of the water withdrawal permit, in the form required by the Minister, and any fee required in the Schedule to these regulations, the Minister may transfer the water withdrawal permit if the transferee undertakes, in writing, to accept the transfer and abide by the terms and conditions of the permit.

Requirements for transfer

(3) For greater certainty, on transfer, the terms and conditions of a permit, including the expiry date, remain as they were immediately before the transfer unless altered by the Minister.

Terms and conditions remain the same

GENERAL

11. (1) For the purpose of subsections 6(7), 10(2) and 12(2) of the Act, the notice of and reasons for a decision of the Minister made under these regulations in respect of a groundwater exploration permit or water withdrawal permit shall be served on the applicant or holder of the permit, as the case may be, within 14 days of the decision, in a manner set out in clauses 67(2)(a) to (d) of the Act.

Service of notice and reasons for decision

(2) For the purpose of section 68 of the Act, an applicant for or the holder of a groundwater exploration permit or water withdrawal permit has a right to appeal a decision of the Minister made under the Act or these regulations in respect of the permit.

Right to appeal

12. Where water is being withdrawn from a well, watercourse or wetland pursuant to an authorization continued under subsection 77(5) of the Act and, in the opinion of the Minister, the withdrawal contravenes or does not comply with the Act, these regulations or the policies and objectives of the Minister with respect to managing and conserving water resources, the Minister may require the holder of the authorization to submit a plan indicating how the holder will bring the water withdrawal into compliance on the expiry of the authorization or five years after the date subsection 77(5) of the Act came into force, whichever occurs first.

Transitional

13. These regulations come into force on June 16, 2021.

Commencement

SCHEDULE**FEES**

1. The fee payable for an activity in column A in the table below is set out in column B of the table, adjacent to the activity.

Column A	Column B 5-year Fee (\$)
1. Groundwater exploration permit	50
2. Groundwater exploration permit extension	25
3. Water withdrawal permit - well < 25 m ³ /day supplying water supply system	50
4. Water withdrawal permit renewal or amendment – well < 25 m ³ /day supplying water supply system	25
5. Water withdrawal permit – low capacity well	100
6. Water withdrawal permit renewal or amendment – low capacity well	50
7. Water withdrawal permit – high capacity well ≤ 1,000,000 m ³ /yr	2,000
8. Water withdrawal permit renewal or amendment – high capacity well ≤ 1,000,000 m ³ /yr	1,000
9. Water withdrawal permit – high capacity well > 1,000,000 m ³ /yr	3,000
10. Water withdrawal permit renewal or amendment – high capacity well > 1,000,000 m ³ /yr	1,500
11. Water withdrawal permit – watercourse or wetland	2,000
12. Water withdrawal permit renewal or amendment– watercourse or wetland	1,000
13. Water withdrawal permit transfer	25

2. A fee for the issuance or renewal of a water withdrawal permit may be pro-rated for permits valid for less than 5 years.

EXPLANATORY NOTES

SECTION 1 defines terms used in these regulations and clarifies that the purpose of agricultural irrigation is distinct from the purpose of research approved by the Minister in respect of agricultural irrigation. It also clarifies that the diversion of water within a watercourse or wetland for the purpose of maintaining a dewatered work area is not considered to be a withdrawal of water from the watercourse or wetland.

SECTION 2 provides that a person may undertake the drilling, construction or reconstruction of a high capacity well or a well that supplies a water supply system if the person holds a groundwater exploration permit. It provides for the owner of land on which the well is or will be located, or a person with the permission of the owner, to apply for a groundwater exploration permit. It sets out the requirements for the issuance of a groundwater exploration permit and factors the Minister shall consider in determining whether the drilling, construction or reconstruction of the well will have an unacceptable adverse effect. It prohibits the issuance of a groundwater exploration permit for the drilling, construction or reconstruction of a high capacity well for the purpose of agricultural irrigation, except for the reconstruction of a high capacity well that was authorized for use for agricultural irrigation immediately before the Act came into force. It sets out the purpose of a groundwater exploration permit. It provides that a groundwater exploration permit is valid for one year and provides for a one time extension of the permit for up to one year. It also sets out reporting requirements for the holder of a groundwater exploration permit.

SECTION 3 prohibits the withdrawal of water from a well, watercourse or wetland for the purpose of supplying water to a water supply system without a water withdrawal permit.

SECTION 4 provides that a person may withdraw water from a well, watercourse or wetland at a rate that exceeds 25 cubic metres per day, if the person holds a water withdrawal permit. It provides for the calculation of the rate of withdrawal from multiple sources in specified circumstances. It sets out exceptional circumstances where a water withdrawal permit is not required to withdraw water at a rate that exceeds 25 cubic metres per day for certain purposes and circumstances where the exception does not apply.

SECTION 5 provides for the owner of land adjacent to a watercourse or on which a well or wetland is located, or a person with the owner's permission, to apply for a water withdrawal permit to withdraw water from the well, watercourse or wetland. It sets out the requirements for the issuance of the permit and factors the Minister shall consider in determining whether the withdrawal of water will have an unacceptable adverse effect. It sets out specific circumstances where the withdrawal of water is considered to have an unacceptable adverse effect. It requires the Minister to prioritize the purposes for which water may be withdrawn where there is insufficient water in a watershed to permit the withdrawal of water for all purposes. It prohibits the issuance of a water withdrawal permit for the withdrawal of water from a high capacity well for the purpose of agricultural irrigation, except in respect of a high capacity well from which the withdrawal of water for that purpose was authorized by the *Environmental Protection Act* or undertaken in circumstances described in subsection 4(2) immediately before the *Water Act* came into force. It provides that, for the purpose of subsection 5(7), a high capacity well includes a well deemed to have a water withdrawal rate that equals or exceeds 345 cubic metres per day under subsection 4(2).

SECTION 6 requires that a water withdrawal permit shall state the maximum rate at which water may be withdrawn, the maximum amount of water that may be withdrawn within a specified period and the purpose for which the water may be withdrawn under the permit. It prohibits a permit holder from withdrawing water contrary to the terms of the permit. It prohibits a permit holder from withdrawing water from a watercourse or wetland when the water flow is below a certain level, unless the watercourse or wetland contains a pond at the head of tide. It provides that a water withdrawal permit may be valid for up to five years, expiring on the date specified on the permit unless it is sooner revoked, there is change in the ownership of the land adjacent to the watercourse or on which the well or wetland is located from which the water is being withdrawn or the owner of that land revokes permission for the permit holder to withdraw water from the well, watercourse or wetland.

SECTION 7 requires the holder of a water withdrawal permit to provide data collected from any flow measuring device or water level measuring device, or data respecting the calibration of those devices, to the Minister, as required by the Minister.

SECTION 8 provides for the renewal of a water withdrawal permit.

SECTION 9 provides for the amendment of a water withdrawal permit but prohibits the amendment of a permit to authorize the withdrawal of water from a high capacity well for the purpose of agricultural irrigation. It provides that, for the purpose of subsection 9(4), a high capacity well includes a well deemed to have a water withdrawal rate that equals or exceeds 345 cubic metres per day under subsection 4(2).

SECTION 10 provides for the transfer of a water withdrawal permit.

SECTION 11 provides for service of a notice of and reasons for a decision of the Minister made under these regulations in respect of a permit and the right to appeal the decision.

SECTION 12 provides for the Minister to require a person who holds an authorization to withdraw water continued on the coming into force of the Act to submit a plan respecting compliance with the Act and these regulations on the expiry of the authorization.

SECTION 13 provides for the commencement of these regulations.

EC2021-507

**WATER ACT
WELL CONSTRUCTION REGULATIONS**

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

INTERPRETATION AND APPLICATION

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) “annular space” means the space between the outside of a well casing and the side walls of a well bore;	annular space
(c) “aquifer” means a saturated, permeable geologic unit capable of transmitting useful quantities of water to wells and springs;	aquifer
(d) “casing” means a watertight length of pipe that is used to line and support the upper portion of a well and to prevent surface or subsurface contaminants from entering the well;	casing
(e) “central supply well” means a well connected to a water supply system serving five or more households;	central supply well
(f) “closed-loop system” means an earth energy system designed to use a ground heat exchanger for the purpose of extracting or rejecting heat;	closed-loop system
(g) “commercial chemical storage facility” means a facility used for the storage and sale, resale, or wholesale storage or distribution of commercial quantities of	commercial chemical storage facility
(i) fertilizers and chemical products, or	
(ii) pesticides that are restricted under the <i>Pesticides Control Act</i> R.S.P.E.I. 1988, Cap. P-4;	
(h) “direct expansion system” means a closed-loop earth energy system that uses a heat pump and a refrigerant charged ground heat exchanger;	direct expansion system
(i) “disposal field” means a disposal field as defined in the Schedule to the <i>Water Act</i> Sewage Disposal Systems Regulations;	disposal field
(j) “flowing well” means a well from which groundwater overflows periodically or year-round without the use of pumping equipment;	flowing well
(k) “ground heat exchanger” means a continuous, sealed, underground heat exchanger consisting of a closed loop of pipe through which a heat-transfer fluid passes to and returns from a heat pump;	ground heat exchanger
(l) “grout”, when used as a noun, means a stable, impervious bonding material that is capable of preventing the vertical movement of water along the outside of a well casing or, when used as a verb, means the act of applying such material;	grout
(m) “heat-transfer fluid” means a fluid used to transfer thermal energy to or from the ground in a closed-loop system;	heat-transfer fluid
(n) “manure storage facility” means a structure, reservoir, catch basin, lagoon, cistern, gutter, tank or bermed area that contains agricultural waste and agricultural liquid waste prior to its use or disposal, but does not include a vehicle or mobile equipment used for the transportation and land application of livestock wastes;	manure storage facility
(o) “open-loop system” means an earth energy system designed to use groundwater or surface water for the purpose of extracting or rejecting heat by use of a liquid-source heat pump;	open-loop system
(p) “owner” means an owner of real property and includes a person who has a right to possession of the real property;	owner

- (q) “petroleum storage tank system” means a petroleum storage tank system as defined in the *Environmental Protection Act* Petroleum Storage Tanks Regulations; petroleum storage tank system
- (r) “pitless adapter” means an aboveground or underground discharge device designed for attachment to a well casing
 (i) to prevent the entrance of contaminants into the well,
 (ii) to conduct water from the well, and
 (iii) to provide access to the pumping equipment located partly within the well; pitless adapter
- (s) “plumber” means a person who holds a certificate of qualification or permit in the compulsory certified trade of plumber issued under the *Apprenticeship and Trades Qualification Act* R.S.P.E.I. 1988, A-15.2; plumber
- (t) “pump” or “pumping equipment” means a pump or equipment or material used or intended for use in withdrawing groundwater for any purpose, and includes seals and tanks, together with fittings and controls; pump or pumping equipment
- (u) “pumping test” means a test that is conducted to determine the characteristics of a well or an aquifer by pumping the well at a known discharge rate and measuring the amount of drawdown of the water level in the well; pumping test
- (v) “pumping water level” means the depth to the water level in a well, measured under pumping conditions from the top of the casing; pumping water level
- (w) “restricted area” means a restricted area designated in Schedule A to these regulations; restricted area
- (x) “return well” means a well that is a component of an open-loop system, intended to accept discharge water and return it to the aquifer from which it is withdrawn; return well
- (y) “rock pit” means an artificial opening constructed underground and used for the disposal of clear water wastes into the ground; rock pit
- (z) “septic tank” means a septic tank as defined in the *Water Act* Sewage Disposal Systems Regulations; septic tank
- (aa) “sewer line” means a sewer line as defined in the *Water Act* Sewage Disposal Systems Regulations; sewer line
- (bb) “solid waste disposal site” means a solid waste disposal site as defined in the *Environmental Protection Act* Waste Resource Management Regulations; solid waste disposal site
- (cc) “static water level” means the depth to the water level in a well, measured under non-pumping conditions from the top of the casing; static water level
- (dd) “supply well” means a well that is a component of an open-loop system, intended to extract water from an aquifer for delivery to a heat exchanger; supply well
- (ee) “unused well” means a well that is not in use; unused well
- (ff) “vermin-proof well cap” means a well cap manufactured and used to prevent the entry of vermin or nuisance organisms into a well; vermin-proof well cap
- (gg) “well contractor” means a person who holds a valid well contractor’s licence; well contractor
- (hh) “well contractor’s licence” means a licence issued under subsection 4(1); well contractor’s licence
- (ii) “well driller” means a person who holds a valid well driller’s licence; well driller
- (jj) “well driller’s licence” means a licence issued under subsection 3(1); well driller’s licence
- (kk) “well permit” means a well permit issued under subsection 5(3). well permit
2. For the purposes of these regulations and the Schedules to these regulations, an opening in the ground made for use in a horizontal-loop Regulations do not apply

geothermal system is not considered a well and these regulations do not apply in respect of it.

LICENCES AND PERMIT

Well Driller's Licence

3. (1) On receipt of an application in the form required by the Minister and the licence fee of \$200, the Minister may issue a well driller's licence to an applicant who

Issuance of licence

- (a) is at least 18 years of age;
- (b) has at least 4,000 hours of work experience in operating a well-drilling machine under the supervision of a well driller, at least 1500 of which were obtained in the province;
- (c) has successfully completed a written or oral test of competence in well drilling and knowledge of the Act and regulations, approved by the Minister; and
- (d) has successfully completed a field test to demonstrate a practical knowledge of well construction, as the Minister considers necessary.

(2) Notwithstanding subsection (1), where an applicant holds a valid authorization to drill wells in another province that the Minister considers to be substantially similar to a well driller's licence, the Minister may waive some or all of the requirements described in clauses (1)(b), (c) and (d).

Authorization in another province

(3) Notwithstanding clause (1)(b), where an applicant does not have 1500 hours of work experience obtained in the province, the Minister may issue the applicant a licence, subject to a restriction of drilling wells in a closed-loop system only until the applicant obtains 1500 hours of work experience in the province.

Restriction on licence

(4) An applicant who is refused a well driller's licence may not re-apply for a well-driller's licence for at least 90 days after the date of the previous application.

Re-application

(5) A well driller's licence expires 24 months from the date it is issued and may be renewed on application in the form required by the Minister and on payment of the renewal fee of \$100.

Expiry and renewal

Well Contractor's Licence

4. (1) On receipt of an application in the form required by the Minister and the licence fee of \$500, the Minister may issue a well contractor's licence to an applicant who

Well contractor's licence

- (a) is a well driller or employs or contracts a well driller; and
- (b) has the equipment necessary to construct or reconstruct wells to the standards prescribed by these regulations.

(2) A well contractor's licence expires 24 months from the date it is issued and may be renewed on application in the form required by the Minister and on payment of the renewal fee of \$250.

Expiry and renewal

Well Permit

5. (1) For the purpose of section 48 of the Act, a person may undertake the drilling, construction or reconstruction of a well in the following circumstances, if the person holds a well permit:

Well permit required

- (a) the land on which the well is to be drilled, constructed or reconstructed is in a restricted area;
- (b) the well is to be drilled, constructed or reconstructed in a manner that does not comply with a restriction, requirement or standard in these regulations;
- (c) more than five wells are to be drilled, constructed or reconstructed for a single closed-loop geothermal system; or
- (d) a well or wells with a collective length of more than 250 metres are to be drilled, constructed or reconstructed for a single closed-loop geothermal system.

(2) The owner of the land on which the well is to be drilled, constructed or reconstructed, or a person with the written permission of the owner, may apply for a well permit.

Application

(3) On receipt of an application in the form required by the Minister and on payment of the permit fee of \$25, the Minister may issue a well permit to the applicant if the Minister is satisfied that the drilling, construction or reconstruction of the well will not contaminate groundwater or provide a conduit for contaminants to reach the aquifer.

Issuance of well permit

(4) For greater certainty, in circumstances other than those described in subsection (1) or the Water Withdrawal Regulations, the drilling, construction or reconstruction of a well may be undertaken without a permit.

No permit required

DRILLING, CONSTRUCTION, AND RECONSTRUCTION OF WELL

Duties of Well Contractor and Well Driller

6. (1) A person undertaking the drilling, construction or reconstruction of a well shall ensure that the drilling, construction or reconstruction of the well is overseen by a well contractor.

Oversight by well contractor

(2) Except as otherwise authorized by a well permit, a well contractor shall ensure that the drilling, construction or reconstruction of a well is conducted by or under the direct supervision of a well driller.

Drilling and construction by well driller

(3) Except as otherwise authorized by a well permit, a well contractor and a well driller shall ensure that the drilling, construction or reconstruction of a well is conducted in accordance with the requirements and standards set out in these regulations.

Requirements and standards

7. Upon completion of a well, the well contractor shall

Well construction report

(a) complete a well construction report in the form approved by the Minister;

(b) promptly provide a copy of the well construction report to the owner of the land on which the well is located; and

(c) within 60 days of the completion of the well, provide a copy of the well construction report to the Minister.

Requirements and Standards

General

8. A well shall be constructed in a manner that

Construction

(a) adapts to the geologic and groundwater conditions existing at the site of the well;

(b) maintains existing natural protection against contaminants;

(c) seals off water-bearing formations that contain contaminants; and

(d) leaves no artificial openings to the well.

Location of Wells

9. (1) A well shall not be constructed at a location

Prohibited locations

(a) where the centre line of the well, extended vertically, does not clear a projection from any building by at least 3 metres;

(b) inside a foundation or structure; or

(c) where surface water other than rainwater will pass over the top of the well.

(2) A well shall not be constructed at a location that is within

Wells - distance from contaminant sources

(a) 3 metres of a sewer line;

(b) 6 metres of a sewer collection main;

(c) 100 metres of a wastewater treatment system;

(d) 15 metres of a septic tank;

(e) 15 metres of a sewage disposal field;

(f) 15 metres of a rock pit;

(g) 90 metres of a manure storage facility;

(h) 150 metres of a solid waste disposal site;

(i) 5 metres of a petroleum storage tank system 1,200 litres or less in size;

(j) 15 metres of a petroleum storage tank system greater than 1,200 litres in size;

(k) 45 metres of a commercial chemical storage facility; or

(l) 6 metres of an existing or abandoned well.

(3) A contaminant source listed in subsection (2) shall not be constructed at a location within a distance from an existing well that would, under subsection (2), preclude the construction of the well, unless the well is abandoned.

Contaminant sources - distance from wells

(4) A well shall not be constructed at a location that is within
 (a) 1.5 metres of any property boundary;
 (b) 1.5 metres of underground electrical cables, except for underground electrical cables that supply power to pumping equipment.

Wells - distance from other features

(5) Where
 (a) a development permit for a property has been issued under the *Planning Act R.S.P.E.I. 1988, Cap P-8*, or by a municipality; and
 (b) the development permit includes a plan indicating the location of a well that is to be constructed on the property,
 the well shall not be constructed in a location other than that shown on the plan.

Well to be placed according to plan

Well Design

10. (1) A well shall not be constructed with less than 12 metres of well casing or with a well casing that does not extend at least 30 centimetres above ground after final landscaping.

Length of casing

(2) A well casing shall not be installed unless the annular space is at least 4 cm wide and filled with grout from the bottom of the well casing to the pitless adapter.

Installation of casing

(3) Notwithstanding subsection (2), where the well casing to be installed is more than 12 metres long and the well is not a central supply well, the lower 12 metres of the annular space may be filled with grout and the remaining annular space may be filled with clean fill.

Exception

(4) Notwithstanding subsection (2), a well casing shall not be installed in a central supply well unless the annular space is filled with grout that is placed using a grout pump.

Grout for central supply well

(5) Subsections (1) and (2) do not apply to a well that is a component of a closed-loop system.

Not applicable to closed-loop system

11. (1) Any pitless adapter, well casing or grout used in the construction of a well shall meet the standards set out in Schedule B to these regulations.

Equipment, materials and devices

(2) Subsection (1) does not apply in respect of a well casing installed in a well that is a component of a closed-loop system.

Not applicable to closed-loop system

Well Completion

12. (1) To complete the construction of a well,
 (a) all earthen material and drill cuttings shall be removed from the well;
 (b) to determine whether sufficient yield is available for the intended use of the well, a pumping test shall be conducted for a minimum of 30 minutes;
 (c) on completion of the pumping test, the static water level, pumping rate and pumping water level shall be recorded on the well construction report;
 (c) a recommended pump capacity and pump depth, based on the drawdown characteristics of the well, shall be recorded on the well construction report; and
 (d) a vented, vermin-proof well cap with a proper expansion joint, approved by the Minister, shall be secured to the top of the well casing.

Completion requirements

(2) In respect of a flowing well, the well shall be capped and sealed in a manner that prevents the overflow of water from the well casing.

Flowing well

(3) Subsection (1) does not apply to a well that is a component of a closed-loop system.

Subsection (1) not applicable to closed-loop system

Wells Used as Components of Earth Energy Systems

- 13.** (1) Discharge lines on open-loop systems shall not be connected to a wastewater treatment system or sewage disposal system. Open-loop system, discharge lines
- (2) A return well for an open-loop system shall be capable of accepting returning water discharging from the system without overflowing. Return well
- 14.** (1) Any materials used in the construction of a closed-loop system that are intended to be buried underground shall meet the standards set out in Schedule B to these regulations. Closed-loop system, materials standards
- (2) Any materials used in the construction of a closed-loop system that are intended to be buried underground shall be installed or assembled in accordance with the standards set out in Schedule B to these regulations. Installation and assembly standards
- (3) A well that is a component of a closed-loop system shall be grouted to ensure continuous contact between the ground heat exchanger and the borehole annulus. Grouting requirements
- (4) Any heat-transfer fluid used in a closed-loop system shall meet the standards set out in Schedule B to these regulations. Heat-transfer fluid requirements
- (5) The underground components of a direct expansion system shall not be installed without a cathodic protection system that meets the standards set out in Schedule B to these regulations. Direct expansion system, piping requirements

PUMP INSTALLATION

- 15.** (1) A person who installs pumping equipment in a well shall ensure it is installed in accordance with this section. Requirements for pump installation
- (2) Pumping equipment shall be installed in a well in a manner consistent with the recommendations set out in the well construction report with respect to the characteristics of the well and the pumping rate for the well. Installation of pumping equipment
- (3) There shall be at least 13 mm of clearance between the pumping equipment and the sidewall of a well. Minimum clearance
- (4) A well and pumping or water distribution equipment shall be connected with a pitless adapter or a well seal. Connection
- (5) For the purposes of subsection (3), a pitless adapter shall be installed so that different metals do not come into contact with each other. Pitless adapter
- (6) A hand pump shall be mounted to the well casing or pump mounting sleeve in a manner that seals the top of the casing or sleeve. Hand pump
- (7) An opening may be created through the wall of the well casing below the ground surface for the purpose of installing a pitless adapter on the pumping equipment, but for no other purpose. Opening in well casing to install pitless adapter
- (8) Pumping equipment shall not be installed without a water sampling port or a tap at a point between the well and any water treatment device. Sampling port
- (9) A pump shall be installed in accordance with the *Electrical Inspection Act* R.S.P.E.I. 1988, Cap. E-3. Installation
- (10) Immediately after the installation or repair of pumping equipment in a well intended to produce water for human consumption,
 (a) all debris shall be removed from in and around the well; and
 (b) the well shall be disinfected using a method set out in Schedule C to these regulations. Cleaning and disinfecting
- (11) Where water is being withdrawn from a supply well for domestic purposes and for the operation of an open-loop system, the system shall be constructed to provide premise isolation by installing a backflow prevention device in the domestic potable water service piping in compliance with the requirements set out in the *Environmental Protection Act A Code for Plumbing Services Regulations for Prince Edward Island*. When backflow prevention device required

(12) This section and Schedule C to these regulations do not apply to a well that is a component of a closed-loop system.

Not applicable to closed-loop system

DECOMMISSIONING OF A WELL

16. (1) The Minister may declare a well to be unused and notify the owner of the land on which the well is located.

Minister declares well unused

(2) For the purpose of section 50 of the Act, an unused well is considered to be abandoned 30 days after the person responsible for the well

Unused well considered abandoned

- (a) surrenders the use of it;
- (b) discovers it; or
- (c) receives a notice declaring it unused under subsection (1).

(3) The person responsible for an unused well shall ensure it is decommissioned by a well contractor, well driller or plumber.

Decommissioned by professional

(4) A well contractor, well driller or plumber shall decommission a well, including a bore hole used as part of a closed-loop system, using a method set out in Schedule D to these regulations that is applicable to the type of well.

Requirements and standards

17. These regulations come into force on June 16, 2021.

Commencement

SCHEDULE A

RESTRICTED AREAS

The following areas are restricted for well construction purposes.

In each description of a restricted area in this Schedule,

- (a) all reference points are taken from Prince Edward Island Department of Communities, Land and Environment Restricted Well Construction Layer, in P.E.I. Double Stereographic Projection System, referenced to NAD83 (CSRS); and
- (b) all azimuths and coordinates are derived from the P.E.I. Double Stereographic Projection System, referenced to NAD83 (CSRS), the coordinates being expressed in metres.

PRINCE COUNTY

1. NEW ANNAN

The restricted area is enclosed by the following boundaries:

COMMENCING at a point defined by the P.E.I. Double Stereographic Projection System, NAD83 (CSRS) with coordinates at 346955 metres East and 708001 metres North;

THENCE Easterly along a line approximately 1,550 metres to a point defined as 348509 metres East and 708006 metres North, or until it intersects the southwest shore of the Barbara Weit River;

THENCE Northwesterly and Southwesterly following the various courses of the said shore of the Barbara Weit River, to the point of intersection of the said shore of the Barbara Weit River or tributary of the Barbara Weit River with the power transmission line, just north of the Rails-to-Trails trail (former CNR Railway Corridor), or to a point defined as 346671 metres East and 708587 metres North;

THENCE Southeasterly by a straight line for approximately 650 metres to the point at the place of commencement.

2. KENSINGTON

The restricted area is enclosed by the following boundaries:

COMMENCING at a point defined by the P.E.I. Double Stereographic Projection System, NAD83 (CSRS) with coordinates at 350536 metres East and 709414 metres North;

THENCE Easterly along a line approximately 892 metres to a point defined as 351431 metres East and 709396 metres North;

THENCE Northerly along a line approximately 1,100 metres to a point defined as 351450 metres East and 710496 metres North;

THENCE Westerly along a line approximately 456 metres to a point defined as 350992 metres East and 710506 metres North;

THENCE due South along a line approximately 296 metres to a point defined as 350992 metres East and 710209 metres North;

THENCE Southwesterly along a line approximately 470 metres to a point defined as 350537 metres East and 710087 metres North;

THENCE Southerly by a straight line for 674 metres or to the point at the place of commencement.

3. O'LEARY

The restricted area is enclosed by the following boundaries:

COMMENCING at a point defined by the P.E.I. Double Stereographic Projection System, NAD83 (CSRS) with coordinates at 306319 metres East and 740204 metres North;

THENCE Southeasterly along a line approximately 533 metres to a point defined as 306838 metres East and 740076 metres North;

THENCE Northerly along a line approximately 809 metres to a point defined as 306658 metres East and 740864 metres North;

THENCE Southwesterly along a line approximately 477 metres to a point defined as 306192 metres East and 740756 metres North;

THENCE Southerly by a straight line for 566 metres or to the point at the place of commencement.

4. MIMINEGASH

The restricted area is enclosed by the following boundaries:

COMMENCING at a point defined by the P.E.I. Double Stereographic Projection System, NAD83 (CSRS) at the high water mark of the Western shore of the Northumberland Strait with coordinates at 305900 metres East and 759277 metres North;

THENCE Easterly along a line approximately 1,122 metres to a point defined as 307025 metres East and 759261 metres North;

THENCE Northerly along a line approximately 1,023 metres to a point defined as 307032 metres East and 760284 metres North;

THENCE Westerly along a line approximately 505 metres to a point defined as 306526 metres East and 760288 metres North, or until it intersects the shore of the Northumberland Strait;

THENCE Southwesterly following the various courses of the shore of the Northumberland Strait, including the Miminegash Run, to the point at the place of commencement.

5. TIGNISH

The restricted area is enclosed by the following boundaries:

COMMENCING at a point defined by the P.E.I. Double Stereographic Projection System, NAD83 (CSRS) with coordinates at 320893 metres East and 766928 metres North;

THENCE Easterly along a line approximately 548 metres to a point defined as 321443 metres East and 766926 metres North;

THENCE Northerly along a line approximately 869 metres to a point defined as 321445 metres East and 767795 metres North;

THENCE Westerly along a line approximately 548 metres to a point defined as 320895 metres East and 767796 metres North;

THENCE Southerly along a line approximately 868 metres to the point at the place of commencement.

6. SUMMERSIDE ISTHMUS

The restricted area is enclosed by the following boundaries:

COMMENCING at a point defined by the P.E.I. Double Stereographic Projection System, NAD83 (CSRS) at the intersection of the high water mark of the North shore of the Wilmot River and the western boundary of Highway 1A, with coordinates at 343055 metres East and 704825 metres North;

THENCE Northerly along a line approximately 1,667 metres to a point defined as 343055 metres East and 706491 metres North;

THENCE Easterly along a line approximately 1,193 metres to a point defined as 344251 metres East and 706498 metres North;

THENCE due North along a line approximately 1,400 metres to the intersection with the southern boundary of Highway 2 to a point defined as 344231 metres East and 707898 metres North;

THENCE Westerly along the Southern boundary of Highway 2 to the intersection of the Southern boundary of Highway 2 and 336050 metres East, or to a point defined as 336050 metres East and 708752 metres North;

THENCE due South along a line approximately 3,923 metres to a point defined as 336050 metres East and 704830 North or until it intersects the Northern shore of Summerside Harbour;

THENCE Easterly along the various courses of the said shore of the Summerside Harbour and the North shore of the Wilmot River to the point at the place of commencement.

7. BEDEQUE

The restricted area is enclosed by the following boundaries:

COMMENCING at a point defined by the P.E.I. Double Stereographic Projection System, NAD83 (CSRS) with coordinates at 344148 metres East and 698647 metres North;

THENCE Easterly along a line approximately 199 metres to a point defined as 344341 metres East and 698698 metres North;

THENCE Northerly along a line approximately 510 metres to a point defined as 344203 metres East and 699189 metres North;

THENCE due West to the intersection of the southeastern shore of an unnamed tributary that feeds into the Bradshaw River above Woodside Shore, or to a point defined as 344120 metres East and 699189 metres North;

THENCE Southeast along the various courses of the southeastern boundary of the said unnamed tributary to a point defined as 344032 metres East and 699077 metres North;

THENCE Southerly along a line approximately 450 metres to the point at the place of commencement.

8. CAPE WOLFE

The restricted area is enclosed by the following boundaries:

COMMENCING at a point defined by the P.E.I. Double Stereographic Projection System, NAD83 (CSRS) with coordinates at 293811 metres East and 742445 metres North;

THENCE Easterly along a line approximately 400 metres to a point defined as 294211 metres East and 742445 metres North;

THENCE Northerly along a line approximately 290 metres to a point defined as 294209 metres East and 742738 metres North;

THENCE Westerly along a line approximately 400 metres to a point defined as 293810 metres East and 742738 metres North;

THENCE Southerly along a line approximately 290 metres to the point at the place of commencement.

9. MISCOUCHE

The restricted area is enclosed by the following boundaries:

COMMENCING at a point defined by the P.E.I. Double Stereographic Projection System, NAD83 (CSRS) with coordinates at 333057 metres East and 709476 metres North;

THENCE Easterly along a line approximately 477 metres to a point defined as 333535 metres East and 709448 metres North;

THENCE Northerly along a line approximately 200 metres to a point defined as 333548 metres East and 709648 metres North;

THENCE Westerly along a line approximately 478 metres to a point defined as 333069 metres East and 709673 metres North;

THENCE Southerly along a line approximately 197 metres to the point at the place of commencement.

10. MOUNT PLEASANT

The restricted area is enclosed by the following boundaries:

COMMENCING at a point defined by the P.E.I. Double Stereographic Projection System, NAD83 (CSRS) with coordinates at 322635 metres East and 725496 metres North;

THENCE Easterly along a line approximately 377 metres to a point defined as 323002 metres East and 725586 metres North;

THENCE Northerly along a line approximately 300 metres to a point defined as 322930 metres East and 725875 metres North;

THENCE Westerly along a line approximately 377 metres to a point defined as 322562 metres East and 725790 metres North;

THENCE Southerly along a line approximately 303 metres to the point at the place of commencement.

11. MONT CARMEL

The restricted area is enclosed by the following boundaries:

COMMENCING at a point defined by the P.E.I. Double Stereographic Projection System, NAD83 (CSRS) with coordinates at 320250 metres East and 705979 metres North;

THENCE Northeasterly along a line approximately 324 metres to a point defined as 320496 metres East and 706191 metres North;

THENCE Northwesterly along a line approximately 400 metres to a point defined as 320236 metres East and 706495 metres North;

THENCE Southwesterly along a line approximately 320 metres to a point defined as 319989 metres East and 706285 metres North;

THENCE Southeasterly along a line approximately 400 metres to the point at the place of commencement.

12. BORDEN-CARLETON

The restricted area is enclosed by the following boundaries:

COMMENCING at a point defined by the P.E.I. Double Stereographic Projection System, NAD83 (CSRS) with coordinates at 347854 metres East and 689941 metres North;

THENCE Northeasterly along a line approximately 750 metres to a point defined as 348460 metres East and 690383 metres North;

THENCE Northwesterly along a line approximately 460 metres to a point defined as 348239 metres East and 690786 metres North;

THENCE Westerly along a line approximately 820 metres to a point defined as 347478 metres East and 690465 metres North;

THENCE Southeasterly along a line approximately 640 metres to the point at the place of commencement.

QUEENS COUNTY**13. CORNWALL (FORMERLY NORTH RIVER)**

The restricted area is enclosed by the following boundaries:

COMMENCING at a point defined by the P.E.I. Double Stereographic Projection System, NAD83 (CSRS) with coordinates at 384156 metres East and 688948 metres North;

THENCE Easterly along a line approximately 1,630 metres to a point defined as 385713 metres East and 689448 metres North, or until it intersects the western shore of the North River;

THENCE North and Northwesterly following the various courses of the said western shore of the North River to a point defined as 385017 metres East and 690074 metres North or to the point of intersection of the western shore of the North River and the southeastern shore of an unnamed tributary that empties into the North River;

THENCE Southwesterly following the various courses of the Southeastern shore of the unnamed tributary to a point defined as 384785 metres East and 689717 metres North;

THENCE Southerly along a straight line approximately 140 metres to the Southern boundary of the Kingston Road to a point defined as 384825 metres East and 689581 metres North;

THENCE Westerly along the Southern boundary of the Kingston Road, approximately 820 metres to a point defined as 384037 metres East and 689335 metres North;

THENCE Southerly along a line approximately 400 metres to the point at the place of commencement.

14. CORNWALL

The restricted area is enclosed by the following boundaries:

COMMENCING at a point defined by the P.E.I. Double Stereographic Projection System, NAD83 (CSRS) with coordinates at 382836 metres East and 685250 metres North;

THENCE due East along a line approximately 440 metres to a point defined as 383278 metres East and 685250 metres North, or until it intersects the Western shore of the Mill Creek;

THENCE Northeasterly following the various courses of the said shore of the Mill Creek to a point defined as 383388 metres East and 685476 metres North;

THENCE Northerly along a line approximately 190 metres to a point defined as 383356 metres East and 685666 metres North;

THENCE Northerly along a line approximately 70 metres to a point defined as 383354 metres East and 685741 metres North;

THENCE Northerly along a line approximately 190 metres to a point defined as 383392 metres East and 685937 metres North, or until it intersects the shore of Hydes Pond on the Mill Creek;

THENCE Northerly following the various courses of the shore of Hydes Pond and Mill Creek to the intersection of the said shore with the centre line of Highway 1 (Trans-Canada Highway) to a point defined as 383619 metres East and 687066 metres North;

THENCE Northeasterly along the centre line of Highway 1 (Trans-Canada Highway) approximately 350 metres to a point defined as 383886 metres East and 687293 metres North;

THENCE Northerly along a line approximately 190 metres to a point defined as 383830 metres East and 687477 metres North;

THENCE Westerly along a line approximately 580 metres to a point defined as 383282 metres East and 687291 metres North, or until it intersects the centre line of Cornwall Drive;

THENCE Southerly along the centre line of Cornwall Drive to a point defined as 383245 metres East and 686448 metres North, or until it intersects the centre line of Highway 1 (Trans-Canada Highway);

THENCE Westerly along the centre line of Highway 1 (Trans-Canada Highway) to a point defined as 383027 metres East and 686357 metres North;

THENCE Southerly along a line approximately 1,120 metres to the point at the place of commencement.

15. CHARLOTTETOWN (FORMERLY WINSLOE)

The restricted area is enclosed by the following boundaries:

COMMENCING at a point defined by the P.E.I. Double Stereographic Projection System, NAD83 (CSRS) with coordinates at 386832 metres East and 693032 metres North;

THENCE Northeasterly along a line approximately 323 metres to a point defined as 387052 metres East and 693268 metres North;

THENCE Northwesterly along a line approximately 608 metres to a point defined as 386605 metres East and 693682 metres North;

THENCE Southwesterly along a line approximately 165 metres to a point defined as 386489 metres East and 693564 metres North;

THENCE Southerly along a line approximately 218 metres to a point defined as 386487 metres East and 693346 metres North;

THENCE Southeasterly along a line approximately 465 metres to the point at the place of commencement.

16. WINTER RIVER BASIN (BRACKLEY WELLFIELD)

The restricted area is enclosed by the following boundaries:

COMMENCING at a point defined by the P.E.I. Double Stereographic Projection System, NAD83 (CSRS) with coordinates at 388501 metres East and 695484 metres North;

THENCE Easterly along a line approximately 731 metres to a point defined as 389206 metres East and 695683 metres North;

THENCE Northerly along a line approximately 1052 metres to a point defined as 388877 metres East and 696682 metres North;

THENCE Westerly along a line approximately 631 metres to a point defined as 388266 metres East and 696517 metres North;

THENCE Northerly along a line approximately 13 metres to a point defined as 388259 metres East and 696537 metres North;

THENCE Westerly along a line approximately 97 metres to a point defined as 388166 metres East and 696511 metres North;

THENCE Southerly along a line approximately 1,080 metres to the point at the place of commencement.

17. WINTER RIVER BASIN (UNION WELLFIELD)

The restricted area is enclosed by the following boundaries:

COMMENCING at a point defined by the P.E.I. Double Stereographic Projection System, NAD83 (CSRS) with coordinates at 390270 metres East and 695620 metres North;

THENCE Easterly along a line approximately 899 metres to a point defined as 391140 metres East and 695855 metres North;

THENCE Northerly along a line approximately 543 metres to a point defined as 390998 metres East and 696379 metres North;

THENCE Westerly along a line approximately 904 metres to a point defined as 390126 metres East and 696133 metres North;

THENCE Southerly along a line approximately 532 metres to the point at the place of commencement.

18. WINTER RIVER BASIN (SUFFOLK WELLFIELD)

The restricted area is enclosed by the following boundaries:

COMMENCING at a point defined by the P.E.I. Double Stereographic Projection System, NAD83 (CSRS) with coordinates at 394675 metres East and 696554 metres North;

THENCE Easterly along a line approximately 1,000 metres to a point defined as 395636 metres East and 696831 metres North;

THENCE Northerly along the western boundary of Highway 222 (Suffolk Road) to a point defined as 395010 metres East and 698019 metres North;

THENCE Westerly along a line approximately 1,460 metres to a point defined as 393602 metres East and 697618 metres North;

THENCE Southerly along a line approximately 782 metres to a point defined as 393814 metres East and 696865 metres North;

THENCE Easterly along a line approximately 741 metres to a point defined as 394529 metres East and 697067 metres North;

THENCE Southeasterly along a line approximately 533 metres to the point at the place of commencement.

19. WEST COVEHEAD

The restricted area is enclosed by the following boundaries:

COMMENCING at a point defined by the P.E.I. Double Stereographic Projection System, NAD83 (CSRS) with coordinates at 390208 metres East and 703743 metres North;

THENCE Easterly along a line approximately 423 metres to a point defined as 390633 metres East and 703741 metres North;

THENCE Northerly along a line approximately 397 metres to a point defined as 390635 metres East and 704138 metres North;

THENCE Westerly along a line approximately 420 metres to a point defined as 390214 metres East and 704138 metres North;

THENCE Southeasterly along a line approximately 395 metres to the point at the place of commencement.

20. MARSHFIELD

The restricted area is enclosed by the following boundaries:

COMMENCING at a point defined by the P.E.I. Double Stereographic Projection System, NAD83 (CSRS) with coordinates at 393046 metres East and 692939 metres North;

THENCE Easterly along a line approximately 530 metres to a point defined as 393580 metres East and 692937 metres North;

THENCE Northerly along a line approximately 790 metres to a point defined as 393584 metres East and 693731 metres North;

THENCE Westerly along a line approximately 530 metres to a point defined as 393049 metres East and 693732 metres North;

THENCE Southerly along a line approximately 790 metres to the point at the place of commencement.

21. JOHNSTONS RIVER

The restricted area is enclosed by the following boundaries:

COMMENCING at a point defined by the P.E.I. Double Stereographic Projection System, NAD83 (CSRS) with coordinates at 398446 metres East and 690779 metres North;

THENCE Easterly along a line approximately 600 metres to a point defined as 399049 metres East and 690777 metres North;

THENCE Northerly along a line approximately 640 metres to a point defined as 399050 metres East and 691420 metres North;

THENCE Westerly along a line approximately 600 metres to a point defined as 398448 metres East and 691422 metres North;

THENCE Southerly along a line approximately 640 metres to the point at the place of commencement.

22. VICTORIA

The restricted area is enclosed by the following boundaries:

COMMENCING at a point defined by the P.E.I. Double Stereographic Projection System, NAD83 (CSRS) with coordinates at 361616 metres East and 685155 metres North;

THENCE Easterly along a line approximately 436 metres to a point defined as 362053 metres East and 685153 metres North;

THENCE Northerly along a line approximately 318 metres to a point defined as 362054 metres East and 685471 metres North;

THENCE Westerly along a line approximately 437 metres to a point defined as 361616 metres East and 685469 metres North;

THENCE Southerly along a line approximately 314 metres to the point at the place of commencement.

23. NORTH RUSTICO

The restricted area is enclosed by the following boundaries:

COMMENCING at a point defined by the P.E.I. Double Stereographic Projection System, NAD83 (CSRS) with coordinates at 374633 metres East and 711151 metres North;

THENCE Easterly along a line approximately 940 metres to a point defined as 375573 metres East and 711182 metres North;

THENCE Northeasterly along a line approximately 430 metres to a point defined as 375783 metres East and 711555 metres North;

THENCE Northwesterly along a line approximately 1,170 metres to a point defined as 374987 metres East and 712421 metres North;

THENCE Westerly along a line approximately 670 metres to a point defined as 374347 metres East and 712227 metres North;

THENCE Southerly along a line approximately 1,110 metres to the point at the place of commencement.

KINGS COUNTY

24. STRATFORD (CABLE HEIGHTS SUBDIVISION)

The restricted area is enclosed by the following boundaries:

COMMENCING at a point defined by the P.E.I. Double Stereographic Projection System, NAD83 (CSRS) with coordinates at 393352 metres East and 684394 metres North;

THENCE Easterly along a line approximately 210 metres to a point defined as 393553 metres East and 684448 metres North;

THENCE Northeasterly along a line approximately 300 metres to a point defined as 393750 metres East and 684674 metres North;

THENCE Northerly along a line approximately 500 metres to a point defined as 393775 metres East and 685174 metres North;

THENCE Westerly along a line approximately 460 metres to a point defined as 393314 metres East and 685223 metres North;

THENCE Southerly along a line approximately 500 metres to a point defined as 393260 metres East and 684727 metres North;

THENCE Southerly along a line approximately 350 metres to the point at the place of commencement.

25. MONTAGUE (NORTH SIDE)

The restricted area is enclosed by the following boundaries:

COMMENCING at a point defined by the P.E.I. Double Stereographic Projection System, NAD83 (CSRS) with coordinates at 426142 metres East and 680158 metres North;

THENCE Easterly along a line approximately 1,200 metres to a point defined as 427342 metres East and 680158 metres North;

THENCE Northerly along a line approximately 644 metres to a point defined as 427343 metres East and 680802 metres North;

THENCE Westerly along a line approximately 1,195 metres to a point defined as 426145 metres East and 680808 metres North;

THENCE Southerly along a line approximately 650 metres to the point at the place of commencement.

26. MONTAGUE (SOUTH SIDE)

The restricted area is enclosed by the following boundaries:

COMMENCING at a point defined by the P.E.I. Double Stereographic Projection System, NAD83 (CSRS) with coordinates at 427052 metres East and 678485 metres North;

THENCE Easterly along a line approximately 540 metres to a point defined as 427591 metres East and 678486 metres North;

THENCE Northerly along a line approximately 900 metres to a point defined as 427589 metres East and 679385 metres North, or until it intersects the Southern shore of the Montague River;

THENCE Westerly following the various courses of the said shore of the Montague River to a point defined as 427433 metres East and 679432 metres North;

THENCE Easterly along a line approximately 48 metres to a point defined as 427478 metres East and 679449 metres North;

THENCE Northerly along a line approximately 66 metres to a point defined as 427455 metres East and 679510 metres North;

THENCE Westerly along a line approximately 125 metres to a point defined as 427334 metres East and 679476 metres North;

THENCE Southwesterly along a line approximately 93 metres to a point defined as 427272 metres East and 679407 metres North;

THENCE Southeasterly along a line approximately 7.5 metres to a point defined as 427277 metres East and 679401 metres North, or until it intersects the southern shore of the Montague River;

THENCE Southwesterly along the said shore of the Montague River to a point defined as 427050 metres East and 679191 metres North;

THENCE Southerly along a line approximately 706 metres to the point at the place of commencement.

27. FORTUNE

The restricted area is enclosed by the following boundaries:

COMMENCING at a point defined by the P.E.I. Double Stereographic Projection System, NAD83 (CSRS) with coordinates at 446859 metres East and 699948 metres North;

THENCE Easterly along a line approximately 500 metres to a point defined as 447358 metres East and 699951 metres North;

THENCE Northerly along a line approximately 440 metres to a point defined as 447354 metres East and 700389 metres North;

THENCE Westerly along a line approximately 500 metres to a point defined as 446856 metres East and 700387 metres North;

THENCE Southerly along a line approximately 440 metres to the point at the place of commencement.

28. SOURIS

The restricted area is enclosed by the following boundaries:

COMMENCING at a point defined by the P.E.I. Double Stereographic Projection System, NAD83 (CSRS) at the Northern Boundary of Highway 2 with coordinates at 457612 metres East and 700720 metres North;

THENCE Easterly along the Northern boundary of Highway 2 to a point defined as 458901 metres East and 700482 metres North;

THENCE Northerly along a line approximately 1,576 metres to a point defined as 459083 metres East and 702047 metres North, or until it intersects the Southern boundary of Highway 335;

THENCE Southwesterly along the Southern boundary of Highway 335 to a point defined as 458006 metres East and 701736 metres North or to a point where it intersects the Southeastern boundary of Highway 305;

THENCE Southwesterly along the Southeastern boundary of Highway 305 to a point defined as 457611 metres East and 701387 metres North;

THENCE Southerly along a line approximately 667 metres to the point at the place of commencement.

29. GEORGETOWN

The restricted area is enclosed by the following boundaries:

COMMENCING at a point defined by the P.E.I. Double Stereographic Projection System, NAD83 (CSRS) with coordinates at 435022 metres East and 682726 metres North;

THENCE Southeasterly along a line approximately 2,340 metres to a point defined as 437086 metres East and 681611 metres North;

THENCE Northeasterly along a line approximately 516 metres to a point defined as 437334 metres East and 682064 metres North;

THENCE Northwesterly along a line approximately 2,340 metres to a point defined as 435267 metres East and 683173 metres North;

THENCE Southerly along a line approximately 510 metres to the point at the place of commencement.

SCHEDULE B

STANDARDS FOR WELL CONSTRUCTION EQUIPMENT, MATERIALS AND DEVICES

Interpretation

1. In this Schedule,

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|---|---------|
| (a) “ANSI” means the American National Standards Institute; | ANSI |
| (b) “ASTM” means the American Society for Testing Materials; | ASTM |
| (c) “CAN/CSA” means a standard developed by the Canadian Standards Association; | CAN/CSA |
| (d) “NSF” means the National Sanitation Foundation. | NSF |

Standards for materials used in well construction

2. A well casing used in a drilled well is required to meet the following material requirements: Well Casing

- (a) it shall be made of new material that is free of contamination;
- (b) it shall be made of either steel or thermoplastic;
- (c) it shall have an inside diameter of at least 127 mm;
- (d) if it is a steel well casing, it shall conform to one of the following standards:
 - (i) for carbon steel well casings, ASTM standard ASTM A589, *Standard Specification for Seamless and Welded Carbon Steel Water-Well Pipe*, for Type IV Water-Well Casing Pipe, Grade B, or
 - (ii) for steel pipes, ASTM standard ASTM A53/A53M, *Standard Specification for Pipe, Steel, Black and Hot-Dipped, Zinc-Coated, Welded and Seamless*, for Type E, Grade B pipes;
- (e) if it is a thermoplastic well casing with an inside diameter of 152 mm, it shall have a wall thickness of at least 7.1 mm, and shall conform to ASTM standard ASTM F480, *Standard Specification for Thermoplastic Well Casing Pipe and Couplings Made in Standard Dimension Ratios (SDR), SCH 40 and SCH 80*;
- (f) if it is a thermoplastic well casing with an inside diameter of greater than 152 mm, it shall have a wall thickness that meets or exceeds the specifications set out for standard dimension ratio (SDR) 17, or Schedule 80 of ASTM standard ASTM F480, *Standard Specification for Thermoplastic Well Casing Pipe and Couplings Made in Standard Dimension Ratios (SDR), SCH 40 and SCH 80*.

3. All grout used to seal the annular space between a well casing and the side walls of a well bore shall comply with NSF/ANSI 60. Grout

4. All pitless adaptors shall comply with NSF 61. Pitless adaptors

Standards for the installation of below-ground components of closed-loop earth energy systems

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|---|--|
| 5. Components of closed-loop systems that are buried underground shall comply with CAN/CSA-C448 Series 13, Section 5.3. | Below-ground components |
| 6. Components of closed-loop systems that are buried underground shall be installed or assembled in compliance with the methods cited in CAN/CSA-C448 Series 13, Sections 5.3.2.3.1 and 5.3.2.3.2. | Installation method of below-ground components |
| 7. Heat-transfer fluids in a closed-loop shall comply with CAN/CSA-C448 Series 13, Section 5.7. | Heat-transfer fluids in closed-loop systems |
| 8. The cathodic protection system installed for the protection of underground piping and tubing in a direct expansion type of closed-loop system shall be installed and maintained in a manner consistent with CAN/CSA-C448 Series 13, Section 4.4.1. | Cathodic protection for direct expansion closed-loop systems |

SCHEDULE C

METHODS FOR DISINFECTING WELLS

A well shall be thoroughly disinfected before it is placed into operation. The most commonly used methods involve chlorine, either in liquid or tablet form. The approved methods are indicated by the case descriptions below. (Note: Chlorine should always be used in a well-ventilated place, because breathing the fumes can be hazardous to a person's health.)

CASE A - WELL HOOKED UP TO A PLUMBING SYSTEM

1. Mix 1 litre of liquid laundry bleach or chlorine with approximately 45.5 litres (10 gallons) of water. Pour the solution directly into the well by removing the well seal or the well cap.
2. Open all faucets in the system and let the water run until the chlorine odour or taste is detected. Turn water off and repeat step #1 with a second chlorine solution.
3. Let the system sit for a minimum of 8 hours, and preferably overnight.
4. Discharge water from all outlets until the chlorine odour and taste has disappeared. Faucets or fixtures discharging to septic tank systems should be temporarily diverted to an outside discharge point to avoid overloading the disposal system.

CASE B - AFTER WELL COMPLETION

1. Mix 1 litre of liquid laundry bleach or chlorine with approximately 45.5 litres (10 gallons) of water.
2. Pour the solution into the well, secure the well with an approved well cap and let the system sit for a minimum of 8 hours, and preferably overnight.

SCHEDULE D

METHODS FOR FILLING UNUSED WELLS

Unused wells, if left open or if insufficiently covered or filled, can be a potential source of groundwater contamination. In addition, wells dug by hand pose a potential safety hazard to the public, livestock and wildlife. The approved methods are indicated by the case descriptions below.

CASE A - DRILLED WELLS

All obstructions in the well shall be removed prior to filling the well. The well should then be filled with alternating layers of bentonite or cement and clean fill (clay till or sand). The bottom 3 m (10 feet) of the bore hole shall be filled with the bentonite or cement. The thickness of the individual layers of bentonite shall be not less than 0.3 m (1 foot) thick. The thickness of clean fill layers shall not exceed 1.5 m (5 feet).

(Note: This plugging procedure is intended to prevent the vertical movement of contamination down the well bore hole. In addition, if the portion of the casing which is above ground becomes an eyesore or a safety concern, it can be cut off below the ground surface.)

CASE B - DUG WELLS

Any obstructions in the well (piping, pump, wooden material, etc.) shall be removed prior to the plugging of the well.

The well shall be filled to within 1 m (3 feet) of the ground surface with a mixture of sandstone and clean fill material. A minimum 0.15 m (6 inches) thick layer of a low permeability material such as bentonite or compacted clay shall be installed within 1 m (3 feet) of the ground surface to prevent the entry of surface water to the water table.

The surface area of the top of the well shall be covered with topsoil and graded in a manner that will allow drainage away from the well.

CASE C - BOREHOLES FOR CLOSED-LOOP SYSTEMS

Boreholes for closed-loop systems which will no longer be used shall be abandoned in a manner that complies with CAN/CSA C-448 – Series 13, paragraphs 4.5.1, (a), (b) and (c), developed by the Canadian Standards Association.

EXPLANATORY NOTES

SECTION 1 defines terms used in these regulations.

SECTION 2 provides that the regulations do not apply to an opening in the ground made for use in a horizontal-loop geothermal system.

SECTIONS 3 sets out the eligibility requirements, application process and terms for well driller's licence.

SECTION 4 sets out the eligibility requirements, application process and terms for well contractor's licence.

SECTION 5 sets out the circumstances in which a permit is required for the drilling, construction or reconstruction of a well, the application process and the considerations of the Minister in issuing a permit.

SECTION 6 requires the drilling, construction or reconstruction of a well to be overseen by a well contractor and conducted by or under the direct supervision of a well driller, except where otherwise authorized by a permit.

SECTION 7 requires a well contractor to complete and provide copies of a well construction report on completion of a well.

SECTIONS 8 - 14 set out requirements and standards for well drilling, construction and reconstruction.

SECTION 15 sets out requirements for installing pumping equipment in a well.

SECTION 16 provides for the decommissioning of wells.

SECTION 17 provides for the commencement of these regulations.

EC2021-508

**FINANCE PEI ACT
REGULATIONS
GORRILL PRODUCE LTD.
AUTHORIZATION**

Pursuant to subsection 2(3) of the *Finance PEI Act Regulations* (EC2012-739), Council authorized Finance PEI to renew a five-year term working capital loan in the amount of two million (\$2,000,000.00) dollars at a rate of prime plus two decimal seven five (Prime + 2.75%) percent to Gorrill Produce Ltd., on the terms and conditions acceptable to the Board of Directors of Finance PEI.

Order-in-Council EC2019-247 of April 17, 2019 is hereby rescinded.

EC2021-509FINANCE PEI ACT
REGULATIONS
GORRILL PRODUCE LTD.
AUTHORIZATION

Pursuant to subsection 2(3) of the *Finance PEI Act* Regulations (EC2012-739), Council authorized Finance PEI to provide a capital loan in the amount of one million seven hundred and eighty-six thousand one hundred and one hundred twenty-six dollars (\$1,786,126.00) to Gorrill Produce Ltd., on the terms and conditions acceptable to the Board of Directors of Finance PEI.

Order-in-Council EC2017-357 of June 20, 2017 is hereby rescinded.

EC2021-510FINANCE PEI ACT
REGULATIONS
GORRILL PRODUCE LTD.
AUTHORIZATION

Pursuant to subsection 2(3) of the *Finance PEI* Regulations (EC2012-739), Council authorized Finance PEI to renew a five-year term loan for loan refinancing in the amount of three million, five hundred and thirty-two thousand (\$3,532,000.00) dollars at a rate of four decimal three five (4.35%) percent to Gorrill Produce Ltd., on terms and conditions satisfactory to the Board of Directors of Finance PEI.

Order-in-Council EC2019-248 of April 17, 2019 is hereby rescinded.