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Environmental Management Act

MUNICIPAL WASTEWATER REGULATION

Note: Check the Cumulative Regulation Bulletin 2014
for any non-consolidated amendments to this regulation that may be in effect.

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Part 1 — Interpretation and Authorization to Discharge

Division 1 — Interpretation

Definitions

1 In this regulation:

"Act" means the *Environmental Management Act*;

"advanced treatment" means any form of treatment, other than dilution, that

(a) produces a municipal effluent quality with BOD_5 and TSS being 10 mg/L or less each, and

(b) meets applicable substituted requirements identified by a director under section 8*[director may substitute requirements]*;

"ADWF" means the average dry weather flow,

(a) being the daily municipal wastewater flow to a wastewater facility that occurs after an extended period of dry weather such that the inflow and infiltration has been minimized to the greatest

extent practicable, and

(b) calculated in accordance with section 2*[calculation of ADWF and dilution ratio]*;

"assurance plan" means a program described in section 31*[assurance plan]*;

"BOD_5" means the carbonaceous 5-day biochemical oxygen demand;

"capital replacement fund" means a fund described in section 29 (b)*[security]*;

"combined sewer system" means ditches, drains, sewers, treatment facilities and disposal facilities that collect, transport, treat or discharge a combination of municipal wastewater and stormwater in a single system;

"continuous monitoring system" means a communications system that

(a) enables operating conditions of a wastewater facility to be continuously monitored,

(b) provides an alarm if operating conditions deviate from established operating conditions, and

(c) enables operating conditions to be adjusted, remotely or by service call, to within normal efficient operating range within 24 hours of any alarm;

"contributory population" means

(a) the number of persons connected to the municipal wastewater collection system, and

(b) the equivalent commercial and industrial contributions of municipal wastewater to that municipal wastewater collection system;

"dilution ratio" means the dilution ratio calculated in accordance with section 2*[calculation of ADWF and dilution ratio]*;

"discharge" means,

(a) when used as a noun, the total amount of municipal wastewater, including reclaimed water, released into the receiving environment from works, and

(b) when used as a verb, to release a discharge;

"discharger" means a person authorized under this regulation to discharge;

"disinfection" means the destruction, inactivation or removal by any means of pathogenic microorganisms;

"domestic wastewater" has the same meaning as "domestic sewage"

in the Sewerage System Regulation, B.C. Reg. 326/2004;

"embayed marine waters" means marine waters

(a) located within a bay from which the access to the sea, by any route, has a maximum width of less than 1.5 km,

(b) located, if a line less than 6 km long is drawn between any 2 points on a continuous coastline, on the shore side of the line, or

(c) in which flushing action is identified in a notice given by a director to be inadequate;

"environmental impact study" means an environmental impact study conducted in accordance with Division 3*[Environmental Impact Studies]* of Part 2;

"EOCP" means Environmental Operators Certification Program;

"filtration" means the removal of solid particles from municipal effluent by passing the municipal effluent through

(a) a filtering medium such as sand, membrane or anthracite, or any other comparable filtering medium or combination of filtering media, or

(b) a physical barrier, device or septum onto which the solids are deposited;

"groundwater" means subsurface water at or below a water table in fully saturated geologic materials and formations;

"health officer" has the same meaning as in the *Public Health Act*;

"inflow and infiltration" means water that enters a municipal wastewater collection system

(a) directly from a stormwater connection (inflow),

(b) indirectly through the land (infiltration), or

(c) through both (a) and (b);

"irrigation" means the application of reclaimed water at agronomic rates when irrigating vegetation;

"land" means the solid part of the earth's surface, and includes the foreshore and land covered by water;

"MPN" means most probable number;

"municipal effluent" means the liquid resulting from the treatment of municipal wastewater;

"municipal wastewater" means domestic wastewater or municipal liquid waste, including contributions from

(a) holding tanks in recreational vehicles, boats and houseboats,

(b) commercial, institutional and industrial sources,

(c) inflow and infiltration,

(d) septic tank pumpage,

(e) holding tank solids, and

(f) sludge from wastewater facilities;

"municipal wastewater collection system" means a conveyance system operated and maintained for the purpose of transporting municipal wastewater to a wastewater treatment facility, but does not include wastewater treatment and discharge facilities;

"NTU" means nephelometric turbidity unit;

"open marine waters" means marine waters other than embayed marine waters;

"Permit Fees Regulation" means the Permit Fees Regulation, B.C. Reg. 299/92;

"primary treatment" means any form of treatment, other than dilution, that produces a municipal effluent quality with BOD_5 and TSS being not more than 130 mg/L each;

"qualified professional" means an applied scientist or technologist specializing in a particular applied science or technology, including agrology, biology, chemistry, engineering, geology or hydrogeology,

(a) who is registered in British Columbia with the professional organization responsible for his or her area of expertise, acting under that professional association's code of ethics and subject to disciplinary action by that association, and

(b) who, through suitable education, experience, accreditation and knowledge, may be reasonably relied on to provide advice within his or her area of expertise as it relates to this regulation;

"reclaimed water" means municipal wastewater that is

(a) treated by a wastewater facility, and

(b) suitable for reuse in accordance with this regulation;

"residential development" means a dwelling or collection of dwellings that serve as the primary residence of the majority of their inhabitants, all of whom rely on a discharger to provide a municipal wastewater system;

"secondary treatment" means any form of treatment, other than dilution, that produces a municipal effluent quality with,

(a) in the case of a lagoon system, BOD_5 being not more than 45 mg/L and TSS being not more than 60 mg/L, and

(b) in any other case, BOD_5 and TSS being not more than 45 mg/L each;

"security" means security calculated in accordance with section 29*[security]*;

"septic tank" means a watertight vessel into which municipal wastewater is continually conveyed such that

(a) solids within the municipal wastewater settle,

(b) anaerobic digestion of organic materials occurs, and

(c) municipal effluent is discharged;

"stormwater" means runoff from rainfall, snow or snowmelt;

"TSS" means the total suspended solids or non-filterable residue;

"wastewater facility" means any facility or works that gathers, treats, transports, stores, uses or discharges municipal wastewater or reclaimed water;

"water quality guidelines" means, as published under the authority of the minister,

(a) the water quality guidelines that, by approval of the minister, apply in British Columbia to groundwater and surface water,

(b) in relation to a body of water for which water quality objectives have been established, the most recent water quality objectives, or

(c) if neither of paragraphs (a) or (b) applies, any other water quality standard acceptable to the minister;

"water table" means the surface

(a) along which the fluid pressure is atmospheric, and

(b) below which the fluid pressure is greater than atmospheric;

"water well" means a well used to supply water for domestic purposes and, for the purposes of this definition,

(a) **"domestic purposes"** has the same meaning as in the *Drinking Water Protection Act*, and

(b) **"well"** has the same meaning as in the *Water Act*.

Calculation of ADWF and dilution ratio

2 (1) The ADWF is calculated by dividing the total flow to the wastewater facility during the dry weather period by the number of days in that period.

(2) The dilution ratio is calculated

(a) by dividing the 2-year return period 7-day low flow in the receiving stream by the maximum weekly (7-day) municipal effluent flow, or

(b) if sufficient data are not available to calculate the 2-year

return period 7-day low flow or if the discharge is to a lake or marine waters, a ratio calculated using a method and data as authorized by a director.

Municipal effluent quality requirements not to be exceeded

3 Unless stated otherwise, the municipal effluent quality requirements set out in Parts 5 to 7 are maximum values and must not be exceeded.

Division 2 — Authorization to Discharge

Application

4 (1) In this section, **"parcel"**, **"sewerage system"** and **"strata lot"** have the same meanings as in the Sewerage System Regulation, B.C. Reg. 326/2004.

(2) Subject to subsection (3), this regulation applies to all discharges

(a) to ground, if the discharge

(i) is equal to or exceeds maximum daily flows of 22.7 m^3/d, and

(ii) is from a sewerage system or combination of sewerage systems that serve structures on one or more parcels or strata lots, or on a shared interest, and

(b) to water.

(3) This regulation does not apply to a discharge to ground or water if the discharge is from a sewerage system that serves only a single family residence or duplex.

(4) This regulation applies to all uses of reclaimed water unless the reclaimed water is from a sewerage system that serves only a single family residence or duplex.

Persons who may discharge or provide reclaimed water

5 (1) A person is exempt from section 6 (2) and (3) of the Act and may discharge municipal effluent or provide reclaimed water if the person does so

(a) in accordance with this regulation, or

(b) to a wastewater facility that

(i) is authorized under the Act to discharge to the receiving environment, and

(ii) accepts and processes municipal wastewater as 10% or less of its waste stream.

(2) A person is exempt from section 6 (2) and (3) of the Act and may discharge domestic wastewater to a sewerage system within the meaning of the Sewerage System Regulation, B.C. Reg. 326/2004, if the person is subject to, and complies with, that regulation.

Prohibited or limited discharges

6 (1) This section applies despite any provision of this regulation.

(2) Subject to subsection (3), a person must not discharge municipal effluent, or register under Part 2 of this regulation for the purposes of discharging municipal effluent, in a manner that would conflict with a liquid waste management plan that is approved by the minister.

(3) Subsection (2) does not apply to a discharger registered before November 17, 2005 with a director in relation to a discharge to Shuswap Lake.

Discharge of non-domestic waste

7 (1) In this section, **"non-domestic waste"** means liquid waste other than domestic wastewater.

(2) A person must not discharge non-domestic waste to a municipal wastewater facility unless the person ensures that the pre-discharge quality of the non-domestic waste meets the standards or is within the ranges specified in the Standard for Discharges Directed to Municipal or Industrial Effluent Treatment Works under Column 3 of Schedule 1.2 of the Hazardous Waste Regulation, B.C. Reg. 63/88.

(3) A municipality must not accept non-domestic waste to a municipal wastewater collection system unless the municipality

(a) regulates the introduction of non-domestic waste through a source control bylaw, or equivalent measures, that provides for the pre-treatment of industrial, commercial and institutional discharges to the system, or

(b) demonstrates, by way of a study, that a source control bylaw, or equivalent measures, is not required to protect

(i) the wastewater facility that receives and processes the municipal wastewater, or

(ii) the receiving environment.

Part 2 — Initial Administrative Requirements

Division 1 — Substituting Requirements

Director may substitute requirements

8 (1) A director may, on receipt of an application or on his or her own initiative, substitute a different requirement for a requirement contained in this regulation if

(a) the substitution is necessary to protect the public or the receiving environment, or

(b) the intent of this regulation will be met by the substitution.

(2) For the purposes of subsection (1), if water quality objectives have not

been established, the director may require a discharger to establish a background water quality limit for the receiving environment.

Director must act in writing

9 If a director

(a) makes a substitution under section 8*[director may substitute requirements]*,

(b) gives notice of, authorizes or accepts a matter under this regulation, or

(c) waives a requirement under section 39 (2)*[septic tanks]*, 54 *[monitoring facilities and devices]*, 58 *[toxicity monitoring requirements]* or 114 (2) or (3) *[alternate disposal or storage]*,

the substitution, notice, authorization, acceptance or waiver must be made in writing.

Division 2 — Registration

Registration

10 (1) A person who registers in accordance with this Division is authorized to do either of the following in accordance with this regulation:

(a) discharge municipal effluent to ground or water;

(b) discharge or use reclaimed water.

(2) Registration takes effect on the date a director notifies the person that all of the following have been received in the form and manner acceptable to the director:

(a) the information and records required under sections 11*[administrative information]* to 15 *[certification by qualified professionals]*;

(b) any other relevant information or record requested by the director;

(c) payment in accordance with section 2 of the Permit Fees Regulation;

(d) if required under Division 5*[Security and Assurance Plans]*,

(i) proof that the person has established security and a capital replacement fund, or

(ii) an assurance plan acceptable to a director

in compliance with the requirements of that Division.

(3) Notification under subsection (2) is not evidence that the requirements of the Act or this regulation have been met.

Administrative information

11 The following administrative information is required for registration:

(a) the full legal name and address of the person to be registered;

(b) the name of a local contact for the person to be registered, and the contact's local address;

(c) the name of the operator of the wastewater facility;

(d) in respect of the land on which the wastewater facility is to be located,

(i) the address and legal description, or the name, latitude and longitude, and

(ii) the name of the registered owner;

(e) the address and legal description, or the name, latitude and longitude, of the location of the discharge;

(f) if the person to be registered has a previous waste management permit respecting discharges to the environment that will be the subject of registration under this regulation, the permit number.

Technical information

12 The following technical information is required for registration:

(a) a description of the wastewater facility;

(b) in respect of the discharge from the wastewater facility, a statement of

(i) the maximum daily flow of the discharge,

(ii) the applicable municipal effluent quality requirements, and

(iii) the municipal effluent and receiving environment monitoring program, including frequency, notification and reporting requirements;

(c) for reclaimed water uses, a statement of

(i) the applicable category as described in section 104*[categories of reclaimed water]*, and

(ii) the rationale for selecting that category.

Information respecting wastewater facility design, plans and studies

13 The following information respecting wastewater facility design, plans and studies is required for registration:

(a) a copy of all environmental impact studies;

(b) a copy of design drawings for the wastewater facility, including the discharge works, signed and stamped by a qualified professional;

(c) an operating plan made in accordance with Division 4*[Operating Plans]*;

(d) a site plan showing the receiving environment monitoring sites in relation to the location of the wastewater facility and the discharge.

Proof of certain matters

14 (1) Proof of the following is required for registration:

(a) if water conservation measures are significant to the design of the wastewater facility, that restrictive covenants respecting the measures are in place;

(b) if approval to construct the wastewater facility is required by the relevant municipality, that the person has

(i) applied for a development permit, and

(ii) notified the relevant municipality of the intent to register under this regulation;

(c) if the approval of a health officer is required for the use of reclaimed water under this regulation, that a health officer has been notified of, or has approved, the use.

(2) If a local service area bylaw applies to the construction or operation of a wastewater facility, a copy of the bylaw must be included with the registration.

Certification by qualified professionals

15 Statements, signed and sealed by the appropriate qualified professionals, certifying all of the following must be provided on registration:

(a) the design of the proposed wastewater facility and the associated documentation meet the requirements of this regulation;

(b) the proposed discharge from the wastewater facility will meet the requirements of this regulation;

(c) all required environmental impact studies have been conducted in accordance with this regulation;

(d) the operating plan for the proposed wastewater facility is adequate for its design;

(e) if an assurance plan is provided, the assurance plan is adequate to provide for repairs to, or the operation, maintenance or replacement of, the wastewater facility;

(f) if a director imposes conditions, limitations or requirements in respect of a substitution, notice, authorization, acceptance or waiver referred to in section 9*[director must act in writing]*, those conditions, limitations or requirements have been addressed.

Changes to registration

16 (1) If there is a change in the information referred to in subsection (2), a discharger is not required to re-register, but the discharger must

(a) notify a director within 30 days of the change, and

(b) provide the director with the revised information.

(2) The information for the purposes of subsection (1) is as follows:

(a) a change in the information submitted for registration under section 11 (a), (b), (c) or (d) (ii) *[administrative information]*;

(b) a change in the quantity of the discharge if the resulting quantity, measured in relation to the quantity initially registered, is

(i) decreased, or

(ii) increased by not more than 10%;

(c) a change in the quality of the discharge if the resulting quality, measured in relation to the quality initially registered, has no greater impact on public health or the receiving environment.

(3) A registration may be transferred as follows:

(a) at least 30 days before the transfer, the discharger must notify a director of the intended transfer;

(b) after notification under paragraph (a) but at least 30 days before the transfer, the person to whom the registration is being transferred must provide the director with all applicable changes to the information required under this Division in respect of the registration.

Suspension or cancellation of registration

17 (1) A director may suspend or cancel a registration in the same manner and for the same reasons as a director could suspend or cancel a permit or approval under section 18 of the Act.

(2) A discharger must not release a discharge

(a) during any period during which the discharger's registration is suspended, or

(b) if the discharger's registration is cancelled.

Division 3 — Environmental Impact Studies

When environmental impact study required

18 (1) Subject to subsection (2), a person must conduct an environmental impact study as follows:

(a) for the purposes of registration under Division 2*[Registration]*;

(b) if registered under Division 2, before expanding or making a material change to the person's wastewater facility.

(2) If a person was authorized, before July 15, 1999, to discharge or use reclaimed water, subsection (1) (b) does not apply unless

(a) a director notifies the person otherwise, or

(b) the person is making a material change in respect of treatment, effluent quality or amount of discharge, if the amount is to be increased, from that which was authorized.

Requirements for environmental impact studies

19 (1) A qualified professional must conduct for a wastewater facility an environmental impact study that includes provisions for controlling environmental impacts during the construction and operation of the wastewater facility or site.

(2) A qualified professional must conduct for the receiving environment an environmental impact study that does all of the following:

(a) considers the potential cumulative effects of the discharge on the receiving environment;

(b) establishes additional municipal effluent quality requirements if necessary to protect public health or the receiving environment;

(c) for the purposes of section 20*[receiving environment monitoring program]*, establishes in relation to both pre- and post-discharge

(i) receiving environment monitoring locations, and

(ii) sampling parameters and frequencies;

(d) demonstrates, with regard to the nature of the discharge and the receiving environment, that the proposed disposal system, treatment and reuse, and the discharges from these, will not adversely affect public health or the receiving environment;

(e) addresses any impact on the receiving environment when

(i) municipal effluent quality or reclaimed water requirements are met, and

(ii) municipal effluent or reclaimed water is degraded.

Receiving environment monitoring program

20 (1) A discharger must establish a receiving environment monitoring program that does all of the following:

(a) provides for at least one control sampling station located upstream, upgradient or outside the influence of the initial dilution zone of the municipal effluent;

(b) obtains data to

(i) assess the potential impact of the discharge or reclaimed water, and

(ii) ensure that the discharge or reclaimed water does not or will not cause water quality parameters, outside the initial dilution zone, to fail to meet water quality guidelines;

(c) documents pre-discharge conditions.

(2) If seasonal variations are significant in the receiving environment, a discharger must conduct pre-discharge monitoring during the most critical period of the year.

Environmental impact study if overflows

21 If section 42*[overflows]* applies to a discharge, a qualified professional must conduct an environmental impact study that identifies

(a) any measures necessary to protect public health and the receiving environment, and

(b) any treatment needed to protect the designated uses of waters receiving combined sewer system overflows or municipal wastewater collection system overflows.

Division 4 — Operating Plans

Municipal wastewater collection systems excluded

22 This Division does not apply to a municipal wastewater collection system.

General requirements of operating plans

23 A qualified professional must prepare for a wastewater facility an operating plan that details the requirements for all of the following:

(a) the proper operation, maintenance and monitoring of the wastewater facility, including lift stations;

(b) staff education and certification;

(c) a commissioning plan, a contingency plan and, if applicable, an irrigation plan, each made by the qualified professional in accordance with this Division;

(d) in the case of a temporary treatment system, a closure plan, made by the qualified professional, that describes the procedures for decommissioning the system when it is no longer required.

Commissioning plan

24 A commissioning plan must include the operational procedures required to commission the wastewater facility, including the monitoring required to demonstrate that no adverse environmental impacts result from commissioning.

Contingency plan

25 A contingency plan must describe all of the following:

(a) emergency procedures for the wastewater facility, including lift stations;

(b) procedures for notifying a health officer when necessary;

(c) actions to be taken if municipal effluent quality fails to meet the requirements of this regulation;

(d) an alternate method of disposal or storage if reclaimed water use is not possible.

Irrigation plan

26 An irrigation plan must describe all of the following:

(a) the appropriate use, including the time of use, of reclaimed water;

(b) the maximum application rate, and the growing season, for the crop or vegetation to which the reclaimed water is applied;

(c) the site-specific loading, vegetation nutrient and metal limits.

Division 5 — Security and Assurance Plans

Application

27 This Division does not apply to

(a) a municipality, or

(b) a person who discharges from a service area defined and governed by a local service area bylaw.

Maintenance of security

28 (1) Subject to subsections (2) and (3), a discharger who is an individual, company or strata corporation must not treat, reuse or discharge municipal wastewater generated by a residential development unless all of the following conditions are met:

(a) security is maintained with a financial institution in

(i) an amount calculated in accordance with section 29 (a)*[security]*, and

(ii) a form acceptable to a director;

(b) the discharger provides to a director, within 90 days of the end of the discharger's fiscal year, audited annual financial statements of the discharger's capital replacement fund;

(c) the discharger ensures that a director can act in a timely manner as set out in section 30*[use of security and capital replacement fund]* respecting the security and capital

replacement fund.

(2) Subsection (1) does not apply to a discharger who is covered by an assurance plan acceptable to a director under this Division.

(3) Subsection (1) (b) does not apply to a discharger who has been registered under Division 2*[Registration]* for less than one year.

Security

29 For the purposes of submitting proof under section 10 (2) (d) (i)*[registration]* that a person has established security and a capital replacement fund, a person must establish both of the following:

(a) security in an amount calculated by multiplying the maximum daily flow in m3/d by $1 400, rounded up to the nearest $1 000, and

(b) a capital replacement fund composed of cash, securities, bonds or other financial instruments or insurance, or a combination of these, that

(i) ensures that the potential cost, whenever it may arise, of full replacement of a wastewater facility will be covered,

(ii) is adjusted annually to match inflation based on the Industrial Product Price Index in respect of capital equipment, produced by Statistics Canada, with the year the wastewater facility was registered as the base year, and

(iii) is not assignable or refundable.

Use of security and capital replacement fund

30 (1) Subject to subsection (2), the security or contributions, or both, from the capital replacement fund established under section 29*[security]* may, at the discretion of a director, be accessed and used for

(a) the repair, operation, maintenance, replacement or improvement of a wastewater facility, or

(b) the payment of any insurance policy premiums or deductibles.

(2) Subsection (1) applies only if

(a) the director notifies the discharger that

(i) one or more of the actions listed in subsection (1) (a) or (b) must be taken within a reasonable time specified by the director, and

(ii) if the action or actions are not taken, the security or contributions, or both, are required, and

(b) the actions are not taken within the time specified by the director.

(3) A discharger must replenish a capital replacement fund from which contributions are made unless a director authorizes alternative

arrangements to ensure that the potential cost, whenever it may arise, of full replacement of the wastewater facility will be covered.

Assurance plan

31 (1) For the purposes of having an assurance plan that is acceptable to a director under section 10 (2) (d) (ii)*[registration]*, a person must do all of the following:

(a) register the wastewater facility with a program

(i) for which insurance instruments are provided by a company registered under the Insurance Act with the Superintendent of Insurance, and

(ii) that has sufficient quality assurance and technical, financial and management resources to provide, or secure the provision of, repairs to, or for the operation, maintenance or replacement of, each wastewater facility registered with the program;

(b) at the person's expense, ensure that an expert consultant selected from the roster established under subsection (2) has

(i) reviewed the assurance plan, and

(ii) made a recommendation to the director on the acceptability of the assurance plan;

(c) attach to the assurance plan the findings of the consultant who reviewed the plan.

(2) A director may establish a roster of expert consultants to assist in reviewing assurance plans.

(3) A person must not select a consultant who has

(a) been involved in developing the assurance plan being reviewed, or

(b) a personal or business relationship with the person requiring the review.

(4) A director may accept an assurance plan if satisfied that it adequately provides for the matters described in subsection (1) (a) (ii).

Part 3 — General Design and Construction Requirements

Division 1 — General Matters

Qualified professionals

32 A person must not design a wastewater facility, including a pumping facility, outfall or other works associated with a wastewater facility, for the purposes of this regulation unless the person is a qualified professional.

Wastewater facilities

33 In designing a wastewater facility, a qualified professional must ensure that the wastewater facility will at all times achieve the applicable municipal effluent quality requirements under this regulation.

Reliability categories for wastewater facilities

34 (1) In this section:

"long term effluent degradation" means a degradation in the quality of municipal effluent for a period continuing over several days;

"shellfish waters" means bodies of water capable of supporting shellfish in quantities that permit aboriginal, commercial or recreational shellfish harvesting;

"short term effluent degradation" means a degradation in the quality of municipal effluent for a period of even a few hours.

(2) For the purposes of this regulation, reliability categories are defined as follows:

(a) category I, being wastewater facilities

(i) that discharge to ground or water, and

(ii) in respect of which short term effluent degradation could cause permanent or unacceptable damage to the receiving environment, including discharges near drinking water sources, shellfish waters or recreational waters in which direct human contact occurs;

(b) category II, being wastewater facilities

(i) that discharge to ground or water, and

(ii) in respect of which permanent or unacceptable damage to the receiving environment, including discharges to recreational waters and land, would not be caused by short term effluent degradation but would be caused by long term effluent degradation;

(c) category III, being wastewater facilities that do not fall within reliability category I or II.

General component and reliability requirements

35 (1) A qualified professional must

(a) determine, based on an environmental impact study, which reliability category applies to a proposed wastewater facility, and

(b) ensure that the design of the wastewater facility meets the applicable requirements of Table 1 and section 36*[additional component and reliability requirements]*.

(2) For the purposes of Table 1, the remaining capacity with the largest unit

out of service must be at least

(a) 50% of the design maximum flow where the notation "[a]" appears, or

(b) 75% of the design maximum flow where the notation "[b]" appears.

Table 1 — Component and Reliability Requirements for Wastewater Facilities

	Reliability Category					
	I		II		III	
Components	**Treatment System**	**Power Source**	**Treatment System**	**Power Source**	**Treatment System**	**Power Source**
blowers or mechanical aerators	multiple units	yes	multiple units	optional	2 minimum	no
aeration basins	multiple units[b]	yes	multiple units[b]	optional	single unit	no
disinfection basins	multiple units[b]	yes	multiple units[a]	yes	multiple units[a]	no
trickling filters	multiple units[b]	yes	multiple units[b]	optional	no backup	no
primary sedimentation	multiple units[a]	yes	multiple units[a]	yes	2 minimum[a]	yes
chemical sedimentation	multiple units[b]	optional	no backup	optional	no backup	no
final sedimentation	multiple units[b]	yes	multiple units[a]	optional	2 minimum[a]	no
degritting	n/a	optional	n/a	no	n/a	no
chemical flash mixer	2 minimum or backup	optional	no backup	optional	no backup	no
flocculation	2 minimum[a]	optional	no backup	optional	no backup	no
aerobic digesters	2 minimum[a]	yes	2 minimum[a]	optional	single unit	no
anaerobic digesters	2 minimum[a]	yes	2 minimum[a]	optional	2 minimum	no
effluent filters	2 minimum[b]	yes	2 minimum[b]	yes	2 minimum[b]	yes
facultative lagoons	2 cells[b]	n/a	2 cells	n/a	2 cells	n/a
aerated lagoons	2 cells[b]	yes	2 cells	optional	2 cells	no
package treatment plants	multiple unitsb or ability to repair within 48 hours	yes	2 units or ability to repair within 48 hours	yes	single unit	no

Additional component and reliability requirements

36 (1) In respect of diffuser requirements, a qualified professional must ensure that

(a) diffusers must have multiple sections, and

(b) the maximum oxygen transfer capability must not be measurably impaired with the largest section out of service.

(2) In respect of blowers or mechanical aerators, a qualified professional must ensure that the remaining capacity with the largest unit out of service is able to achieve design maximum oxygen transfer.

(3) In respect of holding basin requirements for a wastewater facility within reliability category I, a qualified professional must ensure that the treatment system has adequate capacity for all flows.

(4) In respect of chemical flash mixer requirements for a wastewater facility within reliability category I and having only one basin, a qualified professional must provide for a backup system with at least 2 mixing devices, one of which may be installed.

(5) In respect of package treatment plants for a wastewater facility within reliability category I, a qualified professional must provide for municipal effluent filtration in conjunction with discharging to ground.

Pumping facility requirements

37 In designing pumping facilities, a qualified professional must ensure that all of the following requirements are met:

(a) there are at least 2 pumps, with each pump capable of pumping peak design flows;

(b) for pumping stations requiring multiple pumps, the station must have sufficient capacity to pump peak design flow when the largest pump is out of service;

(c) for a 2-pump station, a receptacle for a portable generator must be available for standby power;

(d) for a multiple pump station, an on-site generator must be available for standby power;

(e) standby power must be capable of being activated before the hydraulic capacity of the pump station is exceeded.

Combined sewers

38 (1) A qualified professional must not design the construction or expansion of a combined sewer system.

(2) Nothing in subsection (1) prevents a person from making emergency repairs to an existing combined sewer system.

(3) If repairs are made to a combined sewer system, a discharger must ensure that the person responsible for the municipal wastewater collection system

(a) assesses the feasibility of sewer separation, and

(b) separates, if possible, the storm and municipal wastewater

collection systems at the time of repair.

Septic tanks

39 (1) In designing a wastewater facility using a septic tank, a qualified professional must ensure that all of the following requirements are met:

(a) the tank has a hydraulic capacity of at least 2 days' minimum detention time at the design maximum daily flow;

(b) the tank is fitted with an effluent filter, a screen or an equivalent measure to protect pumps and prevent discharge of solids and floatables;

(c) the tank is accessible for pump out.

(2) A director may waive the requirement set out in subsection (1) (b) in respect of small, remote, seasonal discharges to water.

Construction of facility

40 A person must not begin construction of a wastewater facility until the earlier of

(a) being notified under section 10 (2)*[registration]* that registration is effective, and

(b) receiving notice from a director that construction may begin.

Division 2 — Overflows, and Inflow and Infiltration Requirements

Definitions and extension of dates

41 (1) In this Division:

"combined sewer overflow" means a discharge from a combined sewer system to a location other than a wastewater facility;

"municipal wastewater collection system overflow" means a discharge from a municipal wastewater collection system to a location other than a wastewater facility, commonly referred to as a sanitary sewer overflow.

(2) The minister may, on written request from a discharger, extend any date in this Division.

Overflows

42 (1) A discharger must ensure that an overflow does not occur during storm or snowmelt events with a less than 5-year return period, unless

(a) for municipal wastewater collection systems for which the contributory population is 10 000 persons or more, the person responsible for the municipal wastewater collection system develops and implements, as part of a liquid waste management plan, measures to eliminate overflows, or

(b) if paragraph (a) does not apply, the person responsible for the municipal wastewater collection system or combined sewer system

(i) develops a liquid waste management plan or conducts a study, and

(ii) develops and implements measures to eventually eliminate overflows.

(2) Despite subsection (1), on the request of a director, a discharger must ensure that the person responsible for the municipal wastewater collection system or combined sewer system prepares a record at least once in each 10-year period containing all of the following:

(a) an estimate of the volume, frequency and number of overflow occurrences for each overflow location;

(b) an assessment of the potential impact of overflow occurrences on the receiving environment at each overflow location;

(c) a record of each overflow occurrence that occurs during storm or snowmelt events with a less than 5-year return period;

(d) based on the estimate in paragraph (a), an estimate of the total annual volume of all overflow occurrences that occur during storm or snowmelt events with a less than 5-year return period;

(e) a plan for reducing the volume estimated under paragraph (d) by an average of,

(i) in the case of combined sewer overflows, 1% per year over a 10-year period, or

(ii) in the case of municipal wastewater collection system overflows, 10% per year over a 10-year period;

(f) the steps that have been or will be taken to reduce the volume, frequency and number of overflow occurrences.

Use of storage or conveyance facilities

43 (1) A discharger may not use storage or conveyance facilities to reduce

(a) the amount of sewer separation required, or

(b) the amount of inflow and infiltration reduction required

unless the facilities immediately reduce and ultimately prevent the occurrence of combined sewer overflows.

(2) If facilities are used under subsection (1) and primary and secondary treatment is available, the discharger must do all of the following:

(a) provide at least primary treatment for flows greater than 2 times the ADWF;

(b) use the full secondary capacity of the treatment system;

(c) combine the primary and secondary municipal effluent prior to

discharge;

(d) maintain a minimum receiving environment-to-discharge dilution ratio of 40:1;

(e) if disinfection is required, provide adequate excess disinfection capacity to ensure disinfection of the entire discharge flow.

Inflow and infiltration

44 (1) A discharger must ensure that inflow and infiltration does not occur such that the maximum average daily flow exceeds 2 times the ADWF at the treatment plant during storm or snowmelt events with a less than 5-year return period, unless

(a) for municipal wastewater collection systems for which the contributory population to the treatment plant is 10 000 persons or more, the person responsible for the municipal wastewater collection system addresses, as part of a liquid waste management plan, how inflow and infiltration can be reduced, or

(b) if paragraph (a) does not apply, the person responsible for the municipal wastewater collection system

(i) develops a liquid waste management plan or conducts a study, and

(ii) develops and implements measures to reduce inflow and infiltration.

(2) Despite subsection (1), if reductions below 2 times the ADWF are not possible or cost effective based on a cost-benefit analysis, the discharger must

(a) provide full secondary treatment for the entire flow at all times, or

(b) undertake to do all of the things listed in section 43 (2) (a) to (e) *[use of storage or conveyance facilities]*.

Part 4 — General Operating Requirements

Division 1 — General Operating Requirements

Before discharge begins

45 A discharger must not discharge until ensuring that all of the following requirements are met:

(a) the design of the wastewater facility meets, and is capable of consistently meeting,

(i) the requirements of this regulation, or

(ii) the requirements, if any, substituted under section

8*[director may substitute requirements]*;

(b) a qualified professional having expertise in the particular aspect of the design has undertaken

(i) the flow calculation,

(ii) the wastewater facility design, and

(iii) an inspection to ensure that the construction methods and materials, and the wastewater facility as constructed, meet the design criteria;

(c) the wastewater facility is classified under the EOCP.

Notification of discharge

46 A discharger must do both of the following:

(a) within 30 to 60 days before beginning to discharge, provide to a director

(i) notice that discharge will begin, and

(ii) a copy of final design drawings reflecting the actual construction of the wastewater facility, certified as correct and sealed by a qualified professional;

(b) not more than 7 days after beginning to discharge, provide to a director notice of the date that discharge began.

Operator qualifications and certification

47 A discharger must not discharge unless the wastewater facility is operated and maintained by persons who

(a) have the education, experience and qualifications specified in the operating plan, and

(b) are certified under the EOCP.

Operating plan

48 A discharger must adhere to the operating plan.

Bypasses

49 (1) A person must not bypass a wastewater facility, or any component of the wastewater facility, for the purpose of scheduled maintenance unless maintenance cannot reasonably be undertaken without the bypass.

(2) If a bypass under subsection (1) may cause a discharge to fail to meet a requirement set out in this regulation, the discharger must do all of the following:

(a) notify a director at least 30 days before beginning the bypass;

(b) receive authorization from a director before beginning the bypass;

(c) comply with any conditions imposed by the director.

(3) All unauthorized bypasses, overflows and spills must be reported in accordance with the Spill Reporting Regulation, B.C. Reg. 263/90.

Malfunctions

50 (1) If a malfunction or other condition results, or may result, in a discharge that fails to meet a requirement of this regulation, a discharger must notify a director immediately.

(2) A discharger must notify a health officer immediately of any malfunction or other condition related to the wastewater facility that may result in a risk to public health.

Division 2 — General Municipal Effluent Requirements

Water quality standards

51 The discharger must not discharge municipal effluent unless, at the edge of the initial dilution zone, all water quality guidelines are met.

Disinfection and chlorination

52 (1) A discharger must disinfect municipal effluent if necessary to ensure that receiving water or groundwater used for domestic or agricultural water extraction, recreational uses or aquatic food production meets water quality guidelines.

(2) A discharger must not use chlorination to disinfect municipal effluent without authorization from a director unless

(a) the discharger first considers alternative disinfection methods, and

(b) the municipal effluent discharged to surface water is dechlorinated below 0.02 mg/L total residual chlorine before discharge.

Division 3 — General Monitoring Requirements

Monitoring required

53 A person must not discharge, or provide or use reclaimed water, unless the discharger monitors

(a) the discharge or reclaimed water, and

(b) the receiving environment

to determine compliance with this regulation.

Monitoring facilities and devices

54 A discharger must do both of the following, unless one or both requirements are waived by a director:

(a) install, or provide, a suitable sampling facility for obtaining a sample of the municipal effluent or reclaimed water;

(b) provide and maintain a suitable flow measuring device to record, for each 24-hour period,

(i) the municipal effluent volume discharged, and

(ii) the volume of reclaimed water treated and used.

General monitoring requirements

55 (1) A discharger must monitor the quality and quantity of municipal effluent or reclaimed water, as applicable, in accordance with Parts 5*[Specific Requirements for Discharge to Ground]* to 7 *[Reclaimed Water Requirements]* for at least the first 2 years of discharge.

(2) In respect of seasonal or intermittent discharges, a director may authorize an alternate monitoring schedule.

(3) For new discharges, a person must begin monitoring on beginning to discharge or provide reclaimed water.

(4) After 2 years of discharging or providing reclaimed water, a director may authorize alternate monitoring requirements based on

(a) the monitoring data,

(b) written recommendations of a qualified professional, or

(c) any other information related to the discharge or the receiving environment.

(5) A discharger must submit municipal effluent flow, municipal effluent quality and receiving environment monitoring data, and associated quality control data,

(a) by electronic transmission directly to the central computer system of the ministry of the minister, or

(b) in a form acceptable to a director.

Sampling schedule and requirements

56 (1) A discharger must adhere to the following requirements:

(a) if required to sample quarterly, there must be at least 2 months between samples;

(b) if required to sample monthly, there must be at least 10 days between samples;

(c) if required to sample twice a month, there must be at least 7 days between samples;

(d) if required to sample weekly, there must be at least 5 days between samples;

(e) weekly composite samples must include samples from 3 days each week, with at least one day between samples;

(f) if required to sample twice a week, there must be at least 2 days between samples;

(g) daily composite samples must be composited in proportion to flow over 24 hours.

(2) For the purposes of sections 86*[monitoring requirements for discharges to ground]* and 103 *[monitoring requirements for discharges to water]*, chemical oxygen demand may be used in place of BOD_5 if BOD_5 is examined with chemical oxygen demand every fifth sampling.

Sampling and analysis

57 (1) In subsections (2) and (3) (a):

"ministry" means the ministry of the minister;

"standard practice" means those standards and procedures that are necessary to ensure that measurements and analyses produce valid and reliable results.

(2) A discharger must ensure that sampling and flow measurements are carried out in accordance with standard practice and, for this purpose, may have regard to

(a) the standards and procedures as set out in the sampling and laboratory manuals posted to the ministry website, or

(b) if the standards and procedures described in paragraph (a) do not apply, the standards and procedures as described in *British Columbia Field Sampling Manual: 2003 – For Continuous Monitoring and the Collection of Air, Air-Emission, Water, Wastewater, Soil, Sediment and Biological Samples*, as published by the ministry and as amended from time to time.

(3) A discharger must ensure that analysis is carried out in accordance with standard practice and, for this purpose, may have regard to

(a) the standards and procedures as described in *British Columbia Environmental Laboratory Manual: 2009*, as published by the ministry and as amended from time to time, or

(b) suitable alternative procedures as authorized by the Resources Information Standards Committee of the ministry of the minister responsible for the *Forest Act*.

(4) A discharger must submit laboratory analyses required by this regulation in accordance with the Environmental Data Quality Assurance Regulation, B.C. Reg. 301/90.

Toxicity monitoring requirements

58 (1) In addition to the requirements under section 103*[monitoring requirements for discharges to water]*, a person must not discharge to water, other than open marine waters, unless the discharge is monitored for toxicity in

accordance with Table 2.

(2) Subsection (1) does not apply in any of the following circumstances:

(a) the discharge quality does not exceed a maximum BOD_5 and TSS of 10 mg/L each;

(b) the discharge does not exceed a maximum daily flow of 50 m^3/d;

(c) the discharge is diluted such that, at the outside boundary of the initial dilution zone, the dilution ratio exceeds 100:1;

(d) a director waives the requirement on the basis that the discharge does not adversely affect the receiving environment.

(3) A provider of reclaimed water must conduct toxicity testing if an environmental impact study indicates that testing is necessary.

Table 2 — Toxicity Monitoring Requirements

Column 1	**Column 2**	**Column 3**	**Column 4**
Maximum Daily Flow Range (m^3/d)	**Frequency & Type of Sample for Routine Toxicity**	**Frequency & Type of Sample After Confirmed Toxicity Failure**	**Frequency of Data Submission to Director**
≥50-<500	once/3 years grab samples	quarterly grab samples	once/3 years
≥500-<5 000	once/2 years grab samples	quarterly grab samples	once/2 years
≥5 000-<25 000	annual grab samples	6 times/year grab samples	annually
≥25 000-<50 000	quarterly composite samples	twice/month composite samples	twice/year
≥50 000-<200 000	6 times/year composite samples	weekly composite samples	quarterly
≥200 000	monthly composite samples	weekly composite samples	monthly

Determining toxicity

59 (1) A discharger must determine toxicity in accordance with

(a) Environment Canada's *Biological Test Method: Reference Method for Determining Acute Lethality of Effluents to Rainbow Trout* (Reference Method EPS 1/RM/13), and

(b) if applicable, Environment Canada's *Procedure for pH Stabilization During the Testing of Acute Lethality of Wastewater Effluent to Rainbow Trout* (Reference Method EPS 1/RM/50).

(2) Discharge is not toxic if it passes a 96-hour bioassay test with a mortality rate of no more than 50%, as defined by the method referred to in

subsection (1) (a).

Failed water toxicity tests

60 (1) If a discharge fails a routine toxicity test under section 58*[toxicity monitoring requirements]*, the discharger must

(a) notify a director immediately, and

(b) conduct a confirmation toxicity test within 14 days of the date the previous toxicity sample was taken.

(2) When conducting a confirmation toxicity test or when monitoring after a confirmed failure of a toxicity test, a discharger must

(a) monitor ammonia levels at the same time, and

(b) record the temperature and pH of the sample at the time of sampling.

(3) If a discharge fails 2 consecutive toxicity tests, the discharger must conduct monitoring at the frequency specified in Column 3 of Table 2 in section 58 until the discharge passes 3 consecutive toxicity tests, after which time testing reverts to the frequency specified in Column 2 of that table.

Division 4 — Ongoing Administrative Requirements

Further payments required

61 A discharger must pay the following to a director:

(a) on giving notice under section 16 (1)*[changes to registration]*, an application fee in accordance with section 2 of the Permit Fees Regulation;

(b) on each anniversary of the date on which registration is effective under section 10 (2)*[registration]*, an annual fee in accordance with section 3 of the Permit Fees Regulation, based on the quality and quantity of the discharge as indicated under section 12 (b)*[technical information]* of this regulation.

Records respecting septic tank pump outs

62 A discharger using a septic tank must provide pump out records to a director in the frequency set out in the operating plan prepared under section 23*[general requirements of operating plans]*.

Information and records to be retained

63 A discharger must retain for inspection by an officer at any time a copy of, as applicable,

(a) the information and records submitted on registration under Division 2*[Registration]* of Part 2,

(b) a record prepared under section 42 (2)*[overflows]*,

(c) all outfall inspection reports,

(d) municipal effluent flow and municipal effluent quality monitoring data, and

(e) receiving environment monitoring data.

Notice of assurance plan lapse

64 If a discharger is no longer covered under an assurance plan acceptable to a director, the discharger must notify a director in writing within 30 days of the date coverage ends.

Annual report respecting assurance plans

65 (1) A discharger who is covered by an assurance plan accepted under Division 5*[Security and Assurance Plans]* of Part 2 must, on or before March 31 of each year, provide to a director an annual report detailing

(a) what quality assurance and technical, financial and management resources are in place under the assurance plan, and

(b) how effective the quality assurance and technical, financial and management resources have been during the previous calendar year.

(2) On receiving a report, a director may give notice requiring the discharger to

(a) amend the assurance plan, or

(b) submit a new assurance plan for review and acceptance.

Reports respecting discharge to ground and water

66 (1) For discharges for which the contributory population is less than 10 000 persons, a discharger, on receiving notice from a director, must prepare and submit a report

(a) on or before a date specified by the director,

(b) in a form acceptable to, and containing any information requested by, the director.

(2) For discharges for which the contributory population is 10 000 persons or more, a discharger must submit an annual report that includes all of the following:

(a) a compendium of the municipal effluent flow, municipal effluent quality and receiving environment monitoring data and associated quality control work submitted under sections 86*[monitoring requirements for discharges to ground]* and 87 *[additional monitoring requirements]*;

(b) any effect of the discharge on the quality of the receiving environment, using appropriate statistical and graphical analysis;

(c) any trends in environmental quality in receiving environments affected by the discharge, using background or pre-discharge data and all the years of record in which the discharge has taken place;

(d) if source control, water conservation and education programs related to municipal wastewater quality or quantity, or both, have been implemented, an update of the previous year's achievements;

(e) an update of the problems identified in the previous year and the corrective actions taken;

(f) any planned improvements of wastewater facilities for the coming year;

(g) if reduce, reuse and recycle initiatives related to municipal wastewater quality or quantity, or both, have been implemented, an update of the previous year's achievements;

(h) documentation of historic and projected contributory population and remaining plant capacity;

(i) if applicable, the status of any capital replacement fund established by the discharger;

(j) an outline of the projected monitoring dates for the next year.

(3) An annual report under subsection (2) must

(a) be prepared, and the analysis done, by a suitably qualified professional,

(b) provide an interpretation of monitoring data,

(c) be in a form acceptable to, and contain any information requested by, a director, and

(d) be submitted to a director before May 1 of each year.

(4) On receiving notice from a director, a discharger must make an annual report under subsection (2) available to an individual requesting it, or to the public, by posting it on the Internet or providing a copy to the local public library, or both.

Annual reports respecting reclaimed water

67 A provider of reclaimed water must submit to a director and a health officer an annual report containing all of the following information:

(a) the quality and quantity of reclaimed water;

(b) the method of use and any diversion to an alternate disposal method or to storage;

(c) user information, and communication materials related to the

use of reclaimed water;

(d) the results of any receiving environment monitoring required under this regulation;

(e) the projected monitoring dates for the next year;

(f) the reason for any non-compliance with this regulation and the corrective action taken.

Part 5 — Specific Requirements For Discharge To Ground

Division 1 — General Requirements

Application and interpretation

68 (1) This Part applies only in respect of discharging to ground.

(2) In this Part:

"aquifer" includes any soil or rock formation that has sufficient porosity and water yielding ability to permit the extraction or injection of water at rates of 5 L/minute or more;

"disposal site perimeter" means the outer edge of the subsurface treatment works;

"groundwater mounding effect" means the vertical rise in the water table that occurs in response to a discharge.

Municipal effluent classes

69 For the purposes of this Part, municipal effluent is classed as follows:

(a) class A, being high quality municipal effluent resulting from advanced treatment with the addition of disinfection and nitrogen reduction;

(b) class B, being high quality municipal effluent resulting from advanced treatment;

(c) class C, being municipal effluent resulting from secondary treatment;

(d) class D, being municipal effluent resulting from treatment in a septic tank.

Discharge

70 (1) In this section, **"zone of influence"** means the zone around a water well that, in the opinion of a qualified professional, supplies water to the well.

(2) A person must not discharge, within the zone of influence, municipal effluent to ground unless

(a) the requirements set out in this Part are met, and

(b) the discharged effluent is disinfected.

(3) A person must ensure that a discharge of municipal effluent within 300 m of a drinking water source meets class A municipal effluent requirements.

Initial dilution zone

71 If a person discharges municipal effluent to ground,

(a) the initial dilution zone is the 3-dimensional subsurface zone where mixing of the municipal effluent and groundwater occurs, and

(b) the boundary of the initial dilution zone is the vertical extension into the ground of the property boundaries of the land into which discharging occurs.

Subsurface travel time

72 (1) In this section, **"subsurface travel time"** means the actual time, including the time spent in the unsaturated and saturated zones, required for municipal effluent to travel from the disposal site perimeter to the point where the municipal effluent

(a) surfaces,

(b) reaches a property line, or

(c) is intercepted by a water well.

(2) A discharger must ensure that the subsurface travel time is at least,

(a) for class A or B municipal effluent, 6 days, or

(b) for class C or D municipal effluent, 10 days.

Surfacing of discharge

73 A discharger must ensure that discharge does not surface, or cause the groundwater table to be raised to the surface, as follows:

(a) within 30 m beyond the disposal site perimeter;

(b) more than 30 m beyond the disposal site perimeter, unless

(i) the discharge does not cause water quality parameters to fail to meet water quality guidelines, and

(ii) there will be no adverse impacts from the surfaced municipal effluent.

Calculating flow

74 (1) A qualified professional must determine the calculated or actual maximum daily flow.

(2) A qualified professional may use the actual maximum daily flow to design the wastewater facility if

(a) the actual daily flow is equal to or greater than 37 m^3/d,

(b) water conservation measures are used, and

(c) a restrictive covenant is placed on each property requiring that water conservation measures are continuously used.

(3) If actual maximum daily flow is used under subsection (2), daily discharge volume monitoring is required.

Municipal effluent quality requirements

75 (1) A discharger of class A, B or C municipal effluent must meet the applicable municipal effluent quality requirements set out in this section and listed in Table 3.

(2) The median coliform values for 7 consecutive daily tests and any single value test must be less than the value specified in Table 3.

(3) Despite subsection (1), for class C lagoon systems, the maximum TSS level must not exceed 60 mg/L.

(4) In respect of class A and B municipal effluent that is discharged to a drainfield,

(a) filtration is required to prevent solids carrying over into the disposal field, and

(b) monitoring controls must be maintained to signal an alarm when filtration begins to malfunction.

Table 3 — Municipal Effluent Quality Requirements

Requirement	Class A	Class B	Class C
BOD_5 (mg/L)	10	10	45
TSS (mg/L)	10	10	45
fecal coliform (MPN / 100 mL)	median: 2.2 any sample: 14	400, if maximum daily flow is ≥ 37 m^3/d	n/a
turbidity (NTU)	average: 2 any sample: 5	n/a	n/a
nitrogen (mg/L)	Nitrate-N: 10 total N: 20	n/a	n/a

Unsaturated soil depth

76 (1) For the purposes of this section, **"unsaturated soil"** means the soil between the land surface and the water table where the soil pore spaces contain water at less than atmospheric pressure, as well as air and other gases.

(2) The minimum unsaturated soil depth must be measured from the infiltrative surface to the highest water table, including the groundwater mounding effect or restrictive layer.

(3) For chamber distribution systems, the bottom of the sidewall, or "foot" of the chamber, is considered to be the infiltrative surface.

(4) For class A or B municipal effluent, a discharger must ensure that the minimum unsaturated soil depth is 0.5 m.

(5) For class C or D municipal effluent, a discharger must ensure that the minimum unsaturated soil depth for maximum daily flows of

(a) less than 37 m^3/d is 0.75 m, and

(b) 37 m^3/d or more is 1 m.

Advanced treatment requirements

77 A discharger must not discharge, above the following aquifer areas, municipal effluent having a total nitrogen content of more than 10 mg/L:

(a) the Abbotsford-Sumas Aquifer in Abbotsford;

(b) the Hopington and Langley/Brookswood Aquifers in Langley;

(c) the Lower Nechako River Aquifer in Prince George;

(d) the Lower Cowichan River Aquifer in Duncan;

(e) the Grand Forks Aquifer in Grand Forks;

(f) the Merritt Aquifer in Merritt;

(g) the Osoyoos West and Osoyoos East Aquifers in Osoyoos;

(h) the Vedder River Fan Aquifer in Chilliwack;

(i) the aquifers stretching from Osoyoos Lake to Tuc-el-Nuit Lake and from Tuc-el-Nuit Lake to Vaseux Lake.

Division 2 — Drainfields

Drainage pipe length requirements

78 (1) A discharger must ensure that drainage pipes are at least the length set out for the applicable municipal effluent class and percolation rate, as listed in Table 4.

(2) Despite subsection (1), a discharger may use a chamber distribution system with an equivalent length to the minimum pipe length listed in Table 4.

(3) If

(a) percolation rates are less than 2 minutes per 25 mm,

(b) the maximum daily flow is less than 37 m^3/d, and

(c) class A or B municipal effluent is discharged by pressure distribution,

a discharger may use American Society for Testing and Materials C33 sand-filled trenches to reduce percolation.

(4) If percolation rates exceed 20 minutes per 25 mm, a qualified professional must

(a) supervise construction, and

(b) ensure that construction has not reduced the trench wall permeability, except that, for maximum daily flows of less than 37 m^3/d, permeability may be reduced if the native undisturbed permeable soil depth exceeds 1.35 m as measured from the bottom of the field to the level of the water table.

Table 4 — Minimum Drainage Pipe Length for Each Field

	Metres of drainage pipe for each 10 m^3/d of maximum daily flow for percolation rates shown						
percolation rate (minutes/25 mm)	2	5	10	15	20	25	30
class A, B or C municipal effluent	50	75	100	110	120	135	150
class D municipal effluent	120	215	280	320	360	400	430

Reductions in drainage pipe length

79 (1) Despite section 78 (1)*[drainage pipe length requirements]*, a qualified professional may provide for a reduction in drainage pipe length to a maximum of 40% if both of the following requirements are met:

(a) under section 74 (2)*[calculating flow]*, a qualified professional uses the actual maximum daily flow to design the wastewater facility;

(b) the drainfield discharges class A or B effluent.

(2) In the circumstances set out in subsection (3), a qualified professional may design a drainfield with deeper, narrower trenches and reduce the drainage pipe length to a value equal to the product of

(a) the pipe length required under section 78, and

(b) a factor of $1/H^{0.5}$ or 0.8, whichever is greater, where H is the drainage trench depth below pipe invert in metres.

(3) The circumstances for the purposes of subsection (2) are as follows:

(a) percolation rates are less than 5 minutes per 25 mm;

(b) the maximum daily flow is equal to or greater than 37 m^3/d;

(c) the depth to groundwater, including any groundwater mounding effect, is more than 1 m below the bottom of the drainage trench.

Drainage pipes

80 A discharger must ensure that all of the following requirements are met:

(a) a pressure distribution system is used for drainage pipes fed

by a dosing syphon or pump;

(b) unless a pressure distribution system is used, the drainage pipe is at least 70 mm in diameter;

(c) the drainage pipe cover is at least 0.15 m and meets local frost protection requirements.

Drain fields

81 (1) A discharger must ensure that visual inspection ports are installed in the drain field.

(2) A discharger must ensure that all of the following requirements are met:

(a) drainage pipes are provided in 2 drain fields, each having at least the length of drainage pipe required under section 78*[drainage pipe length requirements]* unless a reduction is permitted under section 79*[reductions in drainage pipe length]*;

(b) a third undeveloped drain field is retained as a standby area;

(c) drain fields are constructed with trenches spaced

(i) such that there is at least 3 m between the centre of each trench, or

(ii) if the performance of the drain field would not be adversely affected, at least 2 m apart from each other with at least double the standby area;

(d) trenches are at least 0.6 m in width, with trench bottoms at least 0.3 m below the pipe invert.

Setback requirements

82 (1) For all discharges to ground and standby areas, a discharger must ensure that setbacks from the area into which discharging occurs are at least the distance set out in Table 5.

(2) A discharger must ensure that subsurface fields, the standby area and a surrounding buffer strip as set out in row 2 ("building drain, buffer strip") of Table 5

(a) are kept free of buildings or hard surfacing of any kind, and

(b) are not used for building drains or any activity that may cause damage to the system or interfere with its operation.

(3) The wastewater facility itself is a building for the purposes of row 2 of Table 5.

(4) For the purposes of row 6 of Table 5, if, based on a hydrogeological assessment to determine the minimum distance required to protect the water quality of a water well,

(a) the distance from the water well must be extended in accordance with the hydrogeological assessment, or

(b) the maximum daily flow is more than or equal to 37 m^3/d,

the distance from the water well may be decreased, if authorized by a director, to a distance of no less than 90 m.

Table 5 — Minimum Setback Requirements

		Minimum Setback Distance (m)	
Row	**Feature**	**maximum daily flow**	
		< 37 m^3/d	≥ 37 m^3/d
1	property boundary	3	6
2	building drain, buffer strip	5	10
3	body of water	30	30
4	water within the Okanagan Basin	30	150
5	water well	60	90
6	water well within unconfined aquifer	60	300

Division 3 — Infiltration Basins, Sand Mounds and Seepage Beds

Infiltration basins

83 A discharger must ensure that infiltration basins meet the following requirements:

(a) at least 2 basins must be provided to allow cleaning of one basin while the other is operating and to act as a safety factor for unusual conditions;

(b) for 2 basin systems, each basin must be capable of accepting all the municipal effluent under annual average rainfall conditions;

(c) subject to Division 1*[General Requirements]*, discharge of municipal effluent to an infiltration basin meets at least class C requirements.

Sand mounds and seepage beds

84 A discharger may use sand mounds and seepage beds only if both of the following requirements are met:

(a) sand mounds and seepage beds are constructed using American Society for Testing and Materials C33 sand to reduce percolation;

(b) the discharger is authorized by a director to use the sand mounds and seepage beds.

Division 4 — Monitoring

Monitoring wells

85 (1) Subject to subsection (2), a discharger must install monitoring wells in sufficient number and orientation, as determined by a qualified professional, to measure background and receiving environment water quality.

(2) For the purpose of subsection (1),

(a) the qualified professional must consider horizontal as well as vertical arrays for sampling, and

(b) at least 4 wells per aquifer are required, one of which must be a background monitoring well.

Monitoring requirements for discharges to ground

86 A discharger must monitor municipal effluent quality and quantity in accordance with section 87*[additional monitoring requirements]* and Table 6, 7 or 8, as applicable, of this section.

Table 6 — Monitoring Requirements If Maximum Daily Flow < 50 m^3/d

	Class A	Class B	Class C
flow frequency	weekly	weekly	weekly
BOD_5, TSS frequency and type	monthly grab samples	monthly grab samples	quarterly grab samples
fecal coliform frequency and type	monthly grab samples	monthly grab samples	none
turbidity frequency and type	monthly grab samples	none	none
nitrogen total, and NO_3 (as N frequency and type)	monthly grab samples	none	none

Table 7 — Monitoring Requirements If Maximum Daily Flow ≥ 50 m^3/d and < 500 m^3/d

	Class A	Class B	Class C
flow frequency	twice/week	twice/week	twice/week
BOD_5, TSS frequency and type	twice/month grab samples	twice/month grab samples	monthly grab samples
fecal coliform frequency and type	weekly grab samples	weekly grab samples	none
turbidity frequency and type	weekly grab samples	none	none
nitrogen total, and NO_3 (as N frequency and type)	twice/month grab samples	none	none

Table 8 — Monitoring Requirements If Maximum Daily Flow ≥ 500 m^3/d

	Class A	Class B	Class C
flow frequency	daily	daily	daily
BOD_5, TSS frequency and type	weekly composite samples	weekly composite samples	twice/month composite samples

fecal coliform frequency and type	daily composite samples	daily grab samples	none
turbidity frequency and type	daily composite samples	none	none
nitrogen total, and NO_3 (as N frequency and type)	weekly composite samples	none	none

Additional monitoring requirements

87 (1) In respect of a discharge having a maximum daily flow of 500 m^3/d or more, after 60 days of compliance with the quality limit,

(a) the discharger must conduct weekly presence or absence testing for coliform monitoring,

(b) if the presence of any coliform is detected, daily fecal coliform testing must be reinstated until the quality limit is in compliance, and

(c) for the purpose of paragraph (b), 7 tests must be conducted to demonstrate compliance before weekly presence or absence testing may be resumed.

(2) A discharger of class D municipal effluent must monitor 24-hour flow as follows:

(a) if the maximum daily flow is less than 50 m^3/d, weekly;

(b) if the maximum daily flow is 50 m^3/d or more but less than 500 m^3d, twice each week, and

(c) if the maximum daily flow is 500 m^3/d or more, daily.

(3) A discharger must submit gathered data under this section to a director, if the maximum daily flow is

(a) less than 50 m^3/d, twice each year, or

(b) 50 m^3/d or more, quarterly.

Continuous monitoring system

88 A discharger of class A or B municipal effluent must install a continuous monitoring system.

Part 6 — Specific Requirements For Discharge To Water

Division 1 — General Requirements

Application and interpretation

89 (1) This Part applies only in respect of discharging to water.

(2) In this Division:

"diffuser" means a section of pipe that diffuses municipal effluent into water through a series of ports;

"estuary" means that portion of a receiving water lying below the farthest point upstream of detectable changes in water movement or chemistry through mixing of fresh and salt water and due to tidal action;

"mean low water" means,

(a) for marine waters, the datum provided on the most recently published marine chart published by the Canadian Hydrographic Service for the location,

(b) for lakes, the point of contact between the lake surface and the shore at the time when the surface is at its average annual minimum elevation based on the last 10 years of records, and

(c) for streams and rivers, the point of contact between the stream or river surface and the shore during the 2-year return period 7-day flow.

Discharge

90 A person must not discharge municipal effluent to water unless the requirements set out in this Part are met.

Initial dilution zone for water generally

91 (1) If a person discharges municipal effluent to water, the initial dilution zone is the 3-dimensional zone around the point of discharge where mixing of the municipal effluent and the receiving water occurs.

(2) The edge of the initial dilution zone must be located at least 300 m away from the following:

(a) recreational areas;

(b) aboriginal, commercial or recreational shellfish harvesting areas;

(c) domestic or agricultural water intakes;

(d) any sensitive area requiring protection identified in a notice given by a director.

(3) Initial dilution zones may overlap only if the combined effects do not cause water quality parameters, outside the combined initial dilution zone, to fail to meet water quality guidelines.

Initial dilution zone for marine waters and lakes

92 (1) For the purpose of calculating the initial dilution zone for marine waters or a lake, both of the following, measured from the point of discharge and from mean low water, apply:

(a) the height is the distance from the bed to the water surface;

(b) the radius is the lesser of

(i) 100 m, and

(ii) 25% of the width of the body of water.

(2) For discharge from an outfall diffuser, the radius referred to in subsection (1) (b) (i) must be measured from the first and last diffuser ports.

(3) In embayed marine waters and lakes, the initial dilution zone must not extend closer to shore than mean low water.

(4) In open marine waters, the edge of the initial dilution zone must be located outside of the shallow water zone in which surf will form along the shore.

Initial dilution zone for streams, rivers and estuaries

93 (1) For the purpose of calculating the initial dilution zone for a stream, river or estuary, all of the following, measured from the point of discharge and from mean low water, apply:

(a) the height is the distance from the bed to the water surface;

(b) the width, perpendicular to the path of the stream, is the lesser of

(i) 100 m, and

(ii) 25% of the width of the stream or estuary;

(c) the length, parallel to the path of the stream, is the distance between a point 100 m upstream and a point that is the lesser of

(i) 100 m downstream, and

(ii) a distance downstream at which the width of the municipal effluent plume equals the width determined under paragraph (b).

(2) For estuaries,

(a) the stream flow is the fresh water content, and

(b) the initial dilution zone must not extend closer to shore than mean low water.

Municipal effluent quality requirements

94 (1) A discharger must meet the applicable municipal effluent quality requirements as set out in this section and as listed in Table 9, 10 or 11.

(2) Subject to subsection (5), if the dilution ratio in respect of discharges to streams, rivers and estuaries is less than 100:1, a qualified professional conducting an environmental impact study must determine if municipal effluent quality must be better than that shown in Table 9, 10 or 11, as applicable.

(3) Subject to subsection (5), if the dilution ratio in respect of discharges to streams, rivers and estuaries used for recreational or domestic water extraction is less than 40:1, a person must not discharge unless all of the

following requirements are met:

(a) the discharge meets advanced treatment requirements;

(b) no other discharge options are available;

(c) the discharge is authorized by a director.

(4) Subject to subsection (5), in respect of seasonal discharges or discharges to streams, rivers and estuaries that are not used for recreational or domestic water extraction, a director may approve the use of secondary treatment if there is a minimum dilution ratio of 20:1.

(5) Discharge is prohibited if the dilution ratio is less than 10:1.

(6) For discharges to marine waters having a maximum daily flow of less than 10 m3/d, a discharger must use a septic tank that meets the design requirements set out in section 39*[septic tanks]*.

(7) For all lagoon systems, the maximum TSS level is 60 mg/L.

Table 9 — Municipal Effluent Quality Requirements

If Maximum Daily Flow < 10 m^3/d

Municipal Effluent Quality	**Receiving Water**				
	Streams, rivers and estuaries *(dilution ratio)*		*Lakes*	*Marine Waters*	
	Column A ≥40:1	Column B ≥10:1	Column C (surface area ≥ 100 ha)	Column D (open)	Column E (embayed)
all flows: BOD_5 & TSS (mg/L)	≤45	≤10	≤45	n/a	n/a

Table 10 — Municipal Effluent Quality Requirements

If Maximum Daily Flow ≥10 m^3/d - <50 m^3/d

Municipal Effluent Quality	**Receiving Water**				
	Streams, rivers and estuaries *(dilution ratio)*		*Lakes*	*Marine Waters*	
	Column A ≥40:1	Column B ≥10:1	Column C (surface area ≥ 100 ha)	Column D (open)	Column E (embayed)
all flows: BOD_5 & TSS (mg/L)	≤45	≤10	≤45	≤130	≤45

Table 11 — Municipal Effluent Quality Requirements If Maximum Daily Flow >

50 m^3/d

Municipal Effluent Quality	**Receiving Water**				
	Streams, rivers and estuaries *(dilution ratio)*		*Lakes*	*Marine Waters*	
	Column A ≥40:1	Column B ≥10:1	Column C (surface area ≥ 100 ha)	Column D (open)	Column E (embayed)
daily flows < 2x ADWF: BOD_5 & TSS (mg/L)	≤45	≤10	≤45	≤45	≤45
daily flows < 2x ADWF: pH	6 – 9	6 – 9	6 – 9	6 – 9	6 – 9
daily flows < 2x ADWF: total phosphorus (P), (mg/L)	≤1	≤1	≤1	n/a	n/a
daily flows < 2x ADWF: ortho phosphate (P), (mg/L)	≤0.5	≤0.5	≤0.5	n/a	n/a
daily flows ≥ 2x ADWF: interim BOD_5 & TSS (mg/L)	≤130	≤10	≤130	≤130	≤130

If maximum daily flow ≥ 50 m^3/d

95 (1) This section applies only if the maximum daily flow is more than or equal to 50 m^3/day.

(2) For flows up to and equaling 2 times the ADWF, treatment and municipal effluent quality requirements are determined by daily flow multiples that require secondary treatment.

(3) If flows are more than 2 times the ADWF during a storm or equivalent snowmelt event with a less than 5-year return period, a discharger must

(a) have a liquid waste management plan or specific study, and

(b) implement the plan's or study's measures.

(4) For the purposes of subsections (2) and (3), a director may give notice that the factor is increased to a maximum of 3 times the ADWF for areas of the province where

(a) permafrost or freezing ground conditions require roof drains

to be connected to the municipal wastewater collection system, and

(b) connections must be made in accordance with a practice acceptable to a local building inspector or an equivalent practice.

(5) A director may substitute, in accordance with section 8*[director may substitute requirements]*, different requirements for the total phosphorus and orthophosphate requirements specified in Table 11, as set out in section 94*[municipal effluent quality requirements]*, if an environmental impact study demonstrates that

(a) receiving waters would not be subject to an undesirable degree of increased biological activity because of the phosphorus addition,

(b) lower municipal effluent concentrations than those shown in Table 11 in section 94 are necessary, or

(c) a mass load criteria may be needed.

(6) A discharger must determine the maximum allowable municipal effluent ammonia concentration at the "end of pipe" by a back calculation, from the edge of the initial dilution zone, that considers

(a) the ambient temperature and pH characteristics of the receiving water, and

(b) water quality guidelines for chronic ammonia.

Allowable fecal coliform organisms

96 (1) A discharger, unless using a septic tank, must ensure that the number of fecal coliform organisms meets the following requirements, as applicable:

(a) if discharging to shellfish bearing waters at the edge of the initial dilution zone, the median or geometric mean MPN of fecal coliform organisms must be less than 14/100 mL, with not more than 10% of the samples exceeding 43/100 mL;

(b) if discharging to recreational use waters, the geometric mean number of fecal coliform organisms at the edge of the initial dilution zone must be less than or equal to 200/100 mL.

(2) The geometric mean, as determined from the bacteriological results of the last 5 samples for which analyses have been completed over the last 30 days, must not be more than the coliform limits specified in subsection (1) (a) or (b), as applicable.

(3) The median coliform values for 7 consecutive daily tests and any single value test must be less than the values specified in this section.

Advanced treatment requirements

97 (1) Unless a director gives notice of a maximum seasonal loading rate in respect of the body of water, a discharger must not discharge to the following

bodies of water municipal effluent having a total annual average phosphorus content of more than 0.25 mg/L:

(a) the Okanagan Basin;

(b) the Christina Lake Basin;

(c) the Thompson River at Kamloops;

(d) the Cowichan River;

(e) the Nicola River at Merritt;

(f) the Cheakamus River at Whistler.

(2) The annual average phosphorus content must be calculated based on a sampling method and frequency acceptable to a director.

(3) A person other than a municipality must not discharge into the Okanagan Basin, and a municipality that discharges into the Okanagan Basin must not discharge effluent that has a total nitrogen content of 6 mg/L or more.

Enhanced environmental impact study needed

98 (1) The terms of reference of an enhanced environmental impact study under this section must be established in consultation with a director.

(2) Discharge to the Saanich Inlet is under a moratorium, and a discharger must not discharge to the Saanich Inlet unless the discharger first conducts an enhanced environmental impact study as recommended by the Saanich Inlet Study.

(3) A discharger must not discharge municipal effluent to any of the following areas unless the discharger first conducts an enhanced environmental impact study and a director gives notice that advanced treatment will protect the receiving environment:

(a) lakes having a surface area of less than 100 ha;

(b) waters within

(i) the Southern Interior Region,

(ii) the Interior Douglas Fir Biogeoclimatic Zone,

(iii) the Ponderosa Pine Biogeoclimatic Zone,

(iv) the Montane Spruce Biogeoclimatic Zone, or

(v) the Bunchgrass Biogeoclimatic Zone.

Division 2 — Outfalls

Outfall requirements

99 (1) A qualified professional must design an outfall such that

(a) initial dilution zone requirements under this regulation are met,

(b) air entrapment is prevented,

(c) adequate weighting is provided to prevent movement from currents, ice or possible entrainment of air, and

(d) the outfall is protected from corrosion.

(2) A qualified professional must ensure that outfall diffusers are

(a) located at a sufficient depth to maximize the frequency that municipal effluent is trapped below the surface of the water,

(b) located to intercept the predominant current and avoid small currents that tend to move toward the shore,

(c) designed to ensure that

(i) each diffuser section will provide at least 10:1 dilution within the initial dilution zone, and

(ii) outside the initial dilution zone, discharge does not cause water quality parameters to fail to meet water quality guidelines, and

(d) designed to achieve maximum dilution in a river, stream or estuary located in the channel in which most of the water flows.

(3) A qualified professional must ensure that outfalls are located

(a) such that they are protected from wave, boat and marine activity, and

(b) at a depth of at least

(i) 40 m below mean low water in the Okanagan Basin, and

(ii) subject to subparagraph (i), 10 m below mean low water in estuaries, lakes or marine waters with a surface area greater than 100 ha.

Additional outfall requirements for estuaries, lakes and marine waters

100 (1) In this section:

"D_1" means the depth (m) of the shallowest diffuser port below mean low water;

"D_2" means the distance (m) to the closest port of the diffuser from mean low water.

(2) A qualified professional must ensure that outfalls to estuaries, lakes or marine waters with a surface area greater than 100 ha meet the following depth, flow and distance requirements:

(a) D1 must be at least 10 m and D_2 must be at least 30 m;

(b) subject to paragraph (a), for discharges of less than 5 000 m^3/d, the calculated critical flow must be greater than or equal to the maximum daily flow (m^3/d), with the calculated critical flow being the greater positive value of

(i) $(D_1 + 0.075D2 - 21) / 0.0029$, and

(ii) $(D_1 + 0.075D2 - 12.225) / 0.025$;

(c) subject to paragraph (a), for discharges equal to or more than 5 000 m^3/d, D_1 and D_2 must be determined by an environmental impact study and computer modelling of the discharge.

(3) For the purposes of subsection (2) (b), if an outfall has a diffuser, the terminus of the outfall is the closest and shallowest port.

Marking of outfalls

101 A discharger must ensure that all outfalls are marked on shore with a sign that meets the following requirements:

(a) the sign must indicate, with wording acceptable to a director, the length and depth of the outfall;

(b) the sign must be at least 1 m2;

(c) the colours of the lettering and the background of the sign must contrast sufficiently with each other, and the sign must be located, such that the wording is clearly visible from both land and water.

Inspection of outfalls

102 (1) To ensure the outfall is operating as designed, a discharger must have each outfall associated with a discharge inspected by a qualified person

(a) once every 5 years, or

(b) at a frequency specified in a notice given by a director.

(2) An inspection must include examination of the entire length of the pipe and diffuser for leaks, breaks and blockages.

Division 3 — Monitoring

Monitoring requirements for discharges to water

103 (1) A discharger must monitor the applicable municipal effluent quality and quantity in accordance with this section and Table 12.

(2) In respect of discharging to open marine waters that have a maximum daily flow of less than 10 m^3/d, monitoring of BOD5, TSS and fecal coliforms is not required.

(3) A discharger must submit to a director data gathered under this section,

(a) in respect of discharges having a maximum daily flow range of less than 50 000 m^3/d, twice each year, and

(b) in respect of discharges having a maximum daily flow range of 50 000 m^3/d or more, quarterly.

Table 12 — Monitoring Requirements

	Maximum Daily Flow Range (m^3/d)					
	<10	≥10 - <500	≥500 - <5 000	≥5 000 - <50 000	≥50 000 - <200 000	>200 000
flow frequency	twice/month	weekly	twice/week	daily	daily	daily
BOD_5, TSS frequency and type	quarterly grab samples	quarterly grab samples	monthly grab samples	weekly grab samples	twice/week composite samples	5 times/week composite samples
NH_4-N, PO_4-P, total phosphorus frequency and type (freshwater)	n/a	quarterly grab samples	6 times/year grab samples	monthly grab samples	twice/month composite samples	weekly composite samples
NH_4-N, PO_4-P, total phosphorus frequency and type (marine)	n/a	n/a	quarterly grab samples	6 times/year grab samples	monthly composite samples	twice/month composite samples
fecal coliform frequency and type	quarterly grab samples	quarterly grab samples	6 times/year grab samples	monthly grab samples	twice/month composite grab samples	weekly composite grab samples

Part 7 — Reclaimed Water Requirements

Division 1 — General Requirements

Categories of reclaimed water

104 (1) For the purposes of this Part, uses of reclaimed water are categorized as follows:

(a) indirect potable reuse, being any use of reclaimed water to replenish a potential potable water source;

(b) greater exposure potential, being uses for which public contact is likely or that present a risk to the receiving environment;

(c) moderate exposure potential, being uses

(i) for which public contact is likely minimal,

(ii) for which public access to the reclaimed water is restricted and users are educated as to the risks posed by the use of the reclaimed water, or

(iii) that present a moderate risk to the receiving environment;

(d) lower exposure potential, being uses

(i) for which public access to the reclaimed water is

restricted and users are not likely to have contact with the reclaimed water,

(ii) that are commercial or industrial in nature and users are educated as to the risks posed by the use of the reclaimed water, or

(iii) that present a low risk to the receiving environment.

(2) Categories of reclaimed water are determined based on the point of distribution or use.

Authorization to provide reclaimed water

105 (1) Subject to subsection (3), a person must not provide reclaimed water unless the person

(a) gives written notice to a health officer, at least 60 days before registering under Division 2*[Registration]* of Part 2, of the proposed use of the reclaimed water, and

(b) receives authorization under subsection (2) (b).

(2) Within 60 days of receiving notice under subsection (1), a health officer may, in writing,

(a) prohibit the person from providing reclaimed water for the proposed use, or

(b) authorize the person to provide reclaimed water for the proposed use, subject to the conditions specified by the health officer.

(3) A person may provide reclaimed water without the notice or authorization referred to in subsection (1) if

(a) use of the reclaimed water is specifically authorized under a local service area bylaw, and

(b) under the bylaw, the municipality or a person under contract to the municipality is responsible for ensuring

(i) compliance with this regulation, and

(ii) that proper operation and maintenance will occur.

Indirect potable reuse of reclaimed water

106 If reclaimed water is to be used for indirect potable reuse, a provider of reclaimed water must

(a) conduct an enhanced environmental impact study, having terms of reference established in consultation with a director,

(b) consult with all persons and organizations who may have an interest or duty that may be impacted by the use of the reclaimed water, and

(c) be authorized by a director to use the reclaimed water for

indirect potable reuse.

Initial dilution zones not applicable

107 Unless a director provides otherwise under section 8*[director may substitute requirements]*, initial dilution zones are not applicable to reclaimed water used for

(a) stream augmentation,

(b) creating impoundments, or

(c) maintaining wetlands or marshes.

Municipal effluent quality requirements for reclaimed water

108 (1) A provider of reclaimed water must meet the applicable municipal effluent quality requirements set out in this section and listed in Table 13.

(2) Turbidity limits under Table 13 must be met before disinfection of the reclaimed water.

(3) For the purposes of fecal coliform monitoring requirements under Table 13,

(a) the median value, as determined from the bacteriological results of the last 5 samples for which analyses have been completed, must not be more than the coliform limits specified in Table 13, and

(b) if irrigating food crops that will be eaten raw, *Escherichia coli* must be monitored daily and be less than 1 CFU/100 mL or 2 MPN/100 mL.

Table 13 — Municipal Effluent Quality Requirements For Reclaimed Water

Parameters	Indirect potable reuse	Greater exposure potential	Moderate exposure potential	Lower exposure potential
pH	site specific	6.5 to 9	6.5 to 9	6.5 to 9
BOD_5, TSS	BOD_5 5 mg/L TSS < 5 mg/L	10 mg/L	25 mg/L	45 mg/L
turbidity	maximum 1 NTU	average 2 NTU, maximum 5 NTU	n/a	n/a
fecal coliform (/100 mL)	median < 1 CFU or < 2.2 MPN	median < 1 CFU or < 2.2 MPN; maximum 14 CFU	median 100 CFU; maximum 400 CFU	median 200 CFU; maximum 1 000 CFU

Additional requirements if exposure potential

109 (1) This section applies to municipal effluent quality requirements if the use of reclaimed water is categorized as having greater, moderate or lower exposure potential.

(2) A provider of reclaimed water must ensure that reclaimed water is not used for irrigation, or is not impounded, within 30 m of any water well or in-ground reservoir used for domestic supply unless a director authorizes a lesser distance on the basis that special circumstances exist.

(3) A provider of reclaimed water must ensure that the reclaimed water is not used for irrigation within the 3 days before, and during, the harvesting of crops.

(4) A provider of reclaimed water must ensure that windblown spray will not

(a) go beyond the boundaries of the property to which the reclaimed water is applied, or

(b) reach areas accessible to the public.

(5) A provider of reclaimed water must ensure that the maximum ground surface slope when applying the reclaimed water is not more than 20%.

(6) A provider of reclaimed water must develop information and communication materials related to the use of the reclaimed water, and provide copies annually to all users.

Additional requirements if greater exposure potential

110 (1) This section applies to municipal effluent quality requirements only if the use of reclaimed water is categorized as having greater exposure potential.

(2) To remove viruses, a provider of reclaimed water must do one or more of the following:

(a) provide for the chemical addition of a coagulant or polymer, followed by filtration;

(b) provide for 60-day storage after secondary treatment, if

(i) municipal effluent quality requirements are met after storage and treatment,

(ii) no short circuiting is occurring or likely to occur, and

(iii) no viruses at levels of concern to a health officer are detected in the reclaimed water;

(c) provide an equivalent form of treatment that is authorized by a director.

(3) In respect of fecal coliform monitoring,

(a) based on an initial 60 days of compliance with the daily fecal coliform quality limit, a provider of reclaimed water may conduct weekly fecal coliform testing, and

(b) if the presence of fecal coliform is detected, daily testing must be reinstated and 7 consecutive non-detect results must be achieved before weekly testing may be resumed.

(4) If ground discharge is the alternate disposal method and 5 years have elapsed without issue, the constructed drainage pipe length as specified in

section 78*[drainage pipe length requirements]* may be reduced if

(a) recommended by a suitably qualified professional, and

(b) a director authorizes the reduction.

Additional requirements if moderate exposure potential

111 (1) This section applies to municipal effluent quality requirements only if the use of reclaimed water is categorized as having moderate exposure potential.

(2) A provider of reclaimed water must ensure that, if the reclaimed water is used to irrigate commercially processed food crops, the crops undergo chemical or physical processing sufficient to destroy pathogens, including canning, heat treatment, fermentation or pickling, before sale to the public or others.

(3) A provider of reclaimed water must ensure that, if the reclaimed water is used to irrigate livestock grazing fields,

(a) milking animals are prohibited from grazing for 6 days after irrigation ends, and

(b) other livestock are prohibited from grazing for 3 days after irrigation ends, unless the meat is inspected under the *Meat Inspection Act* (Canada).

Additional requirement if moderate or

low exposure potential

112 If the use of reclaimed water is categorized as having moderate or low exposure potential, a provider of reclaimed water must

(a) ensure that worker contact with the reclaimed water is minimized, and

(b) provide, if frequent worker contact with the reclaimed water is likely, a higher level of disinfection to a maximum fecal coliform CFU of less than 14/100 mL, or equivalent MPN, based on daily sampling.

Disinfection of reclaimed water

113 (1) A provider of reclaimed water must not provide the reclaimed water for use unless it is first disinfected.

(2) Despite section 52 (2)*[disinfection and chlorination]*, a provider of reclaimed water must ensure that, when distributing reclaimed water, the minimal total chlorine residual at the point of use is maintained at 0.5 mg/L unless

(a) the addition of chlorine will detrimentally impact aquatic flora or fauna, or

(b) at the point of use, fecal coliforms remain below the levels set

in Table 13 in section 108*[municipal effluent quality requirements for reclaimed water]*, and users are adequately informed regarding appropriate use of the reclaimed water.

Division 2 — Alternate Disposal or Storage, and Distribution

Alternate disposal or storage

114 (1) A person must not provide or use reclaimed water unless all of the following requirements are met:

(a) there is an alternate method of disposing of the reclaimed water that meets the requirements of this regulation or is authorized by a director;

(b) treatment processes are built with the minimum number of components specified in the applicable reliability category for the alternate method of disposal, as described in section 35*[general component and reliability requirements]*;

(c) if there is no immediate means of conveyance of the municipal effluent or reclaimed water to the alternate disposal method, the wastewater facility has 48 hours' emergency storage outside the treatment system.

(2) Despite subsection (1) (a), a director may waive the requirement for an alternate method of disposal for reclaimed water that is not generated from residential development or institutional settings if an alternate method is not required to protect public health or the receiving environment and the wastewater facility has

(a) 48 hours' emergency storage outside the treatment system and the ability to shut down generation of municipal wastewater within 24 hours, or

(b) a dedicated storage system that is designed to accommodate

(i) at least 20 days of design average daily municipal effluent flow at any time,

(ii) the maximum anticipated volume of surplus reclaimed water, and

(iii) storm or snowmelt events with a less than 5-year return period.

(3) Despite subsections (1) (a) and (2), if reclaimed water is discharged from a wastewater facility directly into a wetland, a director may waive the requirement for an alternate method of disposal if an alternate method of disposal is not required to protect public health or the receiving environment.

Failure to meet municipal effluent quality requirements

115 (1) If municipal effluent does not meet municipal effluent quality

requirements, a provider of reclaimed water must ensure that the municipal effluent is diverted immediately to

(a) an alternate method of disposal, as provided for in section 114 (1) (a)*[alternate disposal or storage]*, or

(b) emergency storage or a dedicated storage system, as described in section 114 (1) (c) or (2),

until municipal effluent quality requirements are met and reclaimed water uses may continue.

(2) A provider of reclaimed water must identify in the operating plan under section 23*[general requirements of operating plans]*

(a) the diversion procedures under subsection (1), and

(b) the conditions under which the reclaimed water is redirected back to the reclaimed water use.

Use of emergency storage

116 If emergency storage as described under section 114*[alternate disposal or storage]*, is used, a provider of reclaimed water must ensure that the wastewater facility

(a) immediately begins conveyance of municipal effluent or the reclaimed water to an alternate disposal method before emergency storage capacity is reached, or

(b) stops generating municipal wastewater within 24 hours.

Distribution of reclaimed water

117 (1) In this section, **"dual distribution system"** means a water distribution system that distributes both potable and non-potable water to the same service area.

(2) A provider of reclaimed water must not use a dual distribution system to convey reclaimed water unless the system has design, construction, maintenance and inspection safeguards to prevent cross connections.

(3) A person must not operate or maintain a reclaimed water distribution system unless the person is certified in cross connection control inspections, conducted for the purposes of controlling and protecting potable water systems against contamination from unprotected cross connections.

Division 3 — Monitoring

Monitoring requirements for reclaimed water

118 (1) A provider of reclaimed water must monitor the applicable discharge quality and quantity in accordance with this section and Table 14.

(2) A provider of reclaimed water must monitor groundwater levels and water

flows to ensure that reclaimed water use, or an alternate method of discharge, is managed to avoid adverse effects.

(3) A provider of reclaimed water must submit reports as follows:

(a) for reclaimed water categorized as having indirect potable use, weekly;

(b) for reclaimed water categorized as having greater exposure potential, monthly;

(c) for reclaimed water categorized as having moderate or lower exposure potential, quarterly.

(4) Despite subsection (3), a director may authorize reports to be submitted less often than is required under that subsection.

Table 14 — Monitoring Requirements For Reclaimed Water

Parameters	**Indirect potable reuse**	**Exposure Potential**		
Greater	*Moderate*	*Lower*		
pH	site specific	weekly	weekly	weekly
BOD_5, TSS, flow volume	weekly	weekly	weekly	weekly
turbidity	continuous monitoring	continuous monitoring	n/a	n/a
fecal coliform	daily	daily	weekly	weekly

Continuous monitoring system

119 A provider of reclaimed water categorized as having indirect potable use or greater exposure potential must install a continuous monitoring system.

Part 8 — Offences and Penalties

Offences and penalties

120 (1) A person who contravenes any of sections 23, 32, 33, 40, 45 (a), (b) or (c), 47, 48, 50 (1) or (2), 53, 63, 67 (c), 105 (1) or 117 (2) or (3) commits an offence.

(2) A person commits an offence if the person, with intent to mislead,

(a) submits false monitoring data,

(b) fails to retain monitoring data under section 63 (d) or (e) *[information and records to be retained]*,

(c) makes a false report, or

(d) fails to submit a report under section 66 (1)*[reports respecting discharge to ground and water]*, or a report containing the information required under section 66 (2) (a) or (3) (c).

(3) A person who commits an offence as described in subsection (1) or (2) is liable to a penalty not exceeding $200 000.

Transition — registrations under the Municipal Sewage Regulation

121 (1) A person registered under the Municipal Sewage Regulation, B.C. Reg. 129/99, immediately before its repeal, is deemed to be registered under this regulation.

(2) A person deemed to be registered under subsection (1) of this section must, subject to the exercise of the director's discretion under the Act and this regulation,

(a) provide all information required under Division 2 of Part 2 and comply with all applicable requirements under Part 2 within one year of this section coming into force, and

(b) comply with all applicable requirements in Parts 3 to 7.

[Provisions relevant to the enactment of this regulation: *Environmental Management Act*, S.B.C. 2003, c. 53, ss. 138 (2) (c) to (g), (k), (l), (n), (o.1), (q) to (t) and (w), (3) (d), (f) and (g) and 139]
