

Registration 7 May, 1992

FISHERIES ACT

Pulp and Paper Effluent Regulations

P.C. 1992-961 7 May, 1992

His Excellency the Governor General in Council, on the recommendation of the Minister of Fisheries and Oceans, pursuant to subsections 34(2), 36(5), 37(3) and 38(9) and paragraphs 43(g.1)* and (g.2)* of the Fisheries Act, is pleased hereby to revoke the Pulp and Paper Effluent Regulations, C.R.C., c. 830, and to make the annexed Regulations prescribing certain deleterious substances related to the effluent from pulp and paper mills and off-site treatment facilities and authorizing the deposit of limited quantities of those deleterious substances in certain circumstances, in substitution therefor.

*S.C. 1991, c. 1, s. 12(2)

REGULATIONS PRESCRIBING CERTAIN DELETERIOUS SUBSTANCES RELATED TO THE EFFLUENT FROM PULP AND PAPER MILLS AND OFF-SITE TREATMENT FACILITIES AND AUTHORIZING THE DEPOSIT OF LIMITED QUANTITIES OF THOSE DELETERIOUS SUBSTANCES IN CERTAIN CIRCUMSTANCES

SHORT TITLE

1. These Regulations may be cited as the *Pulp and Paper Effluent Regulations*.

INTERPRETATION

2. In these Regulations,

"Act" means the *Fisheries Act*; (*Loi*)

"acute lethality test" means the test to determine the acute lethality of effluent referred to in section 1 of Schedule I; (*essai de détermination de la létalité aiguë*)

"acutely lethal", in respect of effluent, means that the effluent at 100 per cent concentration kills more than 50 per cent of the rainbow trout subjected to it during a 96-hour period, when

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tested in accordance with the acute lethality test; (*léthalité aiguë*)

"authorization" means an authorization issued under section 16 or 17; (*autorisation*)

"authorization officer", in respect of a province or part of a province set out in column I of an item of Schedule V, means the person referred to in column II of that item; (*agent d'autorisation*)

"B_o" [Repealed, SOR/2004-109, s. 1]

"BOD" means the biochemical oxygen demand that is equal to the quantity of oxygen, dissolved in water, that is consumed by BOD matter, when tested in accordance with the BOD test; (*DBO*)

"BOD matter", in effluent, means any matter that consumes oxygen dissolved in water, when tested in accordance with the BOD test; (*matières exerçant une DBO*)

"BOD test" means the test to determine the BOD of an effluent referred to in section 3 of Schedule I; (*essai de détermination de la DBO*)

"B_r" [Repealed, SOR/2004-109, s. 1]

"D" [Repealed, SOR/2004-109, s. 1]

"daily period", in respect of a mill or an off-site treatment facility, means

- (a) a period of 24 consecutive hours determined by the operator of the mill or the facility, in respect of which the operator has given notification to the authorization officer, or
- (b) if no notification has been given to the authorization officer by the operator, a calendar day; (*période de vingt-quatre heures*)

"*Daphnia magna* test" means the test in respect of *Daphnia magna* referred to in section 2 of Schedule I; (*essai sur Daphnia magna*)

"dissolving grade sulphite pulp" means any sulphite pulp that is purified by a bleaching process for use in the manufacture of regenerated cellulose products; (*pâte au bisulfite pour transformation chimique*)

"effluent" means

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- (a) waste water treated by an off-site treatment facility, or
- (b) waste water from a mill, other than waste water from the treatment of intake water, including process water, gas scrubbing water, boiler blow-down water, wash-down water, cooling water, leachate from any site at the mill where solid residues generated by any mill are treated or disposed of, and leachate from any site at the mill where wood chips or hogfuel are stored; (*effluent*)

"finished product" means pulp or a paper product that has completed the production process at a mill; (*produit fini*)

"mill" means

- (a) a factory that is designed or used to produce pulp or paper products, or
- (b) if a complex consists of factories that are owned by different owners and that are designed or used to produce pulp or paper products, all of those factories that discharge some or all of their effluent into a common treatment facility that is owned by one of those owners,

and includes any facility that is owned or operated by the owner of any of the factories referred to in paragraph (a) or (b) and that treats effluent; (*fabrique*)

"off-site treatment facility" means a facility that treats effluent from a mill if the facility is neither owned nor operated by the owner of a mill; (*installation extérieure de traitement*)

"operator" means the person who operates, has control or custody of or is in charge of a mill or an off-site treatment facility; (*exploitant*)

"outfall structure" means a conduit or other structure through which effluent is conveyed from a mill or an off-site treatment facility to a location where it is deposited in water frequented by fish, or in any place from which it may enter such water, or a conduit or other structure through which effluent is conveyed from a mill to an off-site treatment facility; (*émissaire d'effluent*)

"owner" means the owner of a mill or an off-site treatment facility; (*propriétaire*)

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"paper product" means paper, coated paper, paperboard, hardboard, boxboard, linerboard, insulating board, building board, corrugating medium, tissue, moulded cellulose product and any other product directly derived from pulp, but does not include viscose, rayon, cellophane or any other cellulose derivative, or medium density fiberboard as defined in American National Standards Institute (ANSI) Standard A208.2-2002, published on May 13, 2002; (*produit de papier*)

"Port Alberni Mill" means the mill located in Port Alberni, British Columbia, that is owned by Norske Skog Canada Limited, its successors or assigns; (*fabrique de Port Alberni*)

"pulp" means processed cellulose fibres that are derived from wood, other plant material or recycled paper products; (*pâte*)

"Q_d" [Repealed, SOR/2004-109, s. 1]

"Q_m" [Repealed, SOR/2004-109, s. 1]

"Reference Method EPS 1/RM/13 Second Edition" means *Biological Test Method: Reference Method for Determining Acute Lethality of Effluents to Rainbow Trout* (EPS 1/RM/13 Second Edition), December 2000, published by the federal Department of the Environment, as amended from time to time; (*méthode de référence SPE 1/RM/13 Deuxième édition*)

"Reference Method EPS 1/RM/14 Second Edition" means *Biological Test Method: Reference Method for Determining Acute Lethality of Effluents to Daphnia magna* (EPS 1/RM/14 Second Edition), December 2000, published by the federal Department of the Environment, as amended from time to time; (*méthode de référence SPE 1/RM/14 Deuxième édition*)

"reference production rate" means the daily production of finished product of a mill as determined under section 12; (*rythme de production de référence*)

"S_o" [Repealed, SOR/2004-109, s. 1]

"suspended solids" means any solid matter that is present in effluent; (*matières en suspension*)

"suspended solids test" means the test to determine the presence and quantity of suspended solids in effluent referred to in section 4 of Schedule I; (*essai de détermination des matières en suspension*)

"transitional authorization" [Repealed, SOR/2004-109, s. 1]

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"treat", in respect of effluent, means to subject the effluent to physical, chemical or biological action, other than dilution, in order to reduce or eliminate deleterious substances. (traiter) SOR/2003-3, s. 1; SOR/2004-109, s. 1.

PRESCRIBED DELETERIOUS SUBSTANCES

3. For the purpose of the definition "deleterious substance" in subsection 34(1) of the Act, the following classes of substances from a mill or an off-site treatment facility are prescribed as deleterious substances:

- (a) acutely lethal effluent;
- (b) BOD matter; and
- (c) suspended solids. SOR/2004-109, s. 2.

MINISTERIAL ORDERS

4. For the purpose of subsection 37(2) of the Act and in respect of mills or off-site treatment facilities, the Minister or a person designated by the Minister may issue an order under that subsection if the Minister or the person has reasonable grounds to believe that an offence under subsection 40(1) or (2) of the Act is being or is likely to be committed. SOR/2004-109, s. 2.

PART 1

MILLS AND OFF-SITE TREATMENT FACILITIES

Application

5. (1) This Part applies in respect of all mills except the Port Alberni Mill.

(2) This Part also applies in respect of an off-site treatment facility at which, during the preceding calendar year,

- (a) 20% or more of the average daily BOD of the BOD matter in the effluent that was treated originated from one or more mills; or
- (b) 5 000 kg or more of the average daily BOD of the BOD matter in the effluent that was treated originated from a single mill.

(3) If, during the calendar year referred to in subsection (2), the average daily BOD of the BOD matter in the effluent that originated from a single mill did not exceed the product of 7.5 multiplied by the mill's reference production rate, the BOD of

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that BOD matter is not to be included in the calculation of BOD under subsection (2). SOR/2004-109, s. 2.

Authority to Deposit

6. (1) For the purpose of paragraph 36(4)(b) of the Act, the owner or operator of a mill may deposit, or permit the deposit of, BOD matter and suspended solids in any water or place other than a place referred to in subsection (3) or (4) if

- (a) the BOD of the BOD matter or the quantity of suspended solids, as the case may be, does not exceed the maximum quantities authorized by section 14; or
- (b) the deposit is made in accordance with an authorization to exceed the maximum quantities authorized by section 14.

(2) For the purpose of paragraph 36(4)(b) of the Act, the owner or operator of an off-site treatment facility may deposit, or permit the deposit of, BOD matter and suspended solids in any water or place if the deposit is made in accordance with an authorization.

(3) For the purpose of paragraph 36(4)(b) of the Act, the owner or operator of a mill may deposit, or permit the deposit of, any concentration of acutely lethal effluent, any BOD matter and any quantity of suspended solids into an off-site treatment facility, whether or not the facility is subject to these Regulations.

(4) For the purpose of paragraph 36(4)(b) of the Act, the owner or operator of a factory that produces pulp or paper products may deposit, or permit the deposit of, any concentration of acutely lethal effluent, any BOD matter and any quantity of suspended solids into

- (a) a treatment facility that is owned or operated by the owner of the factory; or
- (b) if the factory is part of a complex, the common treatment facility for the factories that are part of the complex.

(5) The authority to deposit BOD matter and suspended solids conferred by subsections (1) and (2) does not confer any authority to deposit acutely lethal effluent. SOR/2004-109, s. 2.

Conditions Governing Authority to Deposit

[SOR/2004-109, s. 3]

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7. (1) The authority of the owner or operator of a mill or an off-site treatment facility under subsections 6(1) and (2) is conditional on the operator

- (a) installing, maintaining and calibrating monitoring equipment, and keeping records of that equipment, in accordance with section 8;
- (b) monitoring effluent in accordance with Schedule II and submitting to the authorization officer a monthly report of the monitoring results and production information in accordance with subsections 9(1) and (3);
- (c) notifying an inspector, without delay, of any result of a test conducted in accordance with Schedule II and of any result of any additional test that was conducted on samples collected in accordance with the procedures specified in that Schedule, other than in the case of a deposit out of the normal course of events, that indicates a failure or non-compliance with these Regulations and reporting the test results in writing to the inspector within 10 days after the notification;
- (d) submitting the identifying information to the authorization officer in accordance with subsections 10(1), (2) and (3);
- (e) preparing and updating annually a remedial plan describing the measures to be taken by the operator to eliminate all unauthorized deposits of deleterious substances in the case where effluent fails an acute lethality test conducted in accordance with Schedule II;
- (f) preparing an emergency response plan in accordance with section 11 and making it readily available on site to persons who are to implement the plan;
- (g) in the case of a mill, providing the authorization officer, in accordance with section 12, with
- (i) the reference production rate for all finished product, and
- (ii) if an authorization has been issued to the owner or operator under subsection 16(2), the reference production rate for all finished product other than dissolving grade sulphite pulp and the reference production rate for dissolving grade sulphite pulp;
- (h) in the case of a mill that treats, in addition to its own effluent, waste water from sources other than a mill, if an authorization has been issued to the owner or operator under subsection 16(1), submitting the values of B_0 and S_0 and the

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supporting data to the authorization officer in accordance with section 19;

- (i) in the case of an off-site treatment facility, submitting the value of A and the supporting data to the authorization officer in accordance with section 21;
- (j) submitting the information on outfall structures to the authorization officer in accordance with section 27, and depositing effluent only through those outfall structures;
- (k) complying with the requirements for environmental effects monitoring studies set out in sections 28 to 31; and
- (l) keeping available for inspection
 - (i) for at least five years, the information and data specified in section 8.2 of Reference Method EPS 1/RM/13 Second Edition and section 8.2 of Reference Method EPS 1/RM/14 Second Edition,
 - (ii) for at least three years, the results of all pH level and electrical conductivity tests conducted in accordance with Schedule II,
 - (iii) for at least five years, a remedial plan and every update of it,
 - (iv) for at least five years, an emergency response plan and every update of it, and
 - (v) for at least six years, all records, reports and data collected or prepared for the purposes of an environmental effects monitoring study.

(2) The authority of the owner or operator of a mill under subsection 6(1) is also conditional on the operator

- (a) not combining any treated effluent with water before the treated effluent is deposited; and
- (b) not combining any treated effluent with any other effluent before the treated effluent is deposited, unless neither the treated effluent nor the other effluent is acutely lethal or unless combining the effluents is authorized pursuant to an authorization under section 17.

(3) The authority of the owner or operator of a mill under subsection 6(3) is conditional on the operator

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- (a) monitoring effluent in accordance with Schedule II and submitting to the authorization officer an annual report, or a series of partial reports covering each calendar year, of the monitoring results and production information in accordance with subsections 9(2) and (3);
- (b) submitting the identifying information to the authorization officer in accordance with subsections 10(1.1) to (3); and
- (c) preparing an emergency response plan in accordance with section 11, making it readily available on site to persons who are to implement the plan and keeping the plan and every update available for inspection for at least five years.

(4) The authority of the owner of a mill or an off-site treatment facility under section 6 is, if the owner is not the same person as the operator, also conditional on the owner exercising all due diligence to ensure that the operator meets the applicable conditions specified in this section. SOR/2004-109, s. 4.

Monitoring Equipment

8. (1) The monitoring equipment referred to in paragraph 7(1)(a) is equipment that is installed, maintained and calibrated so that it is capable of monitoring effluent in accordance with Schedule II, and includes the following:

- (a) equipment that is capable of taking duplicate samples of effluent from each outfall structure, or a sufficient volume of effluent to obtain split samples, for the purpose of conducting BOD tests and suspended solids tests; and
- (b) equipment that permits the determination of the volume of effluent that is deposited through each outfall structure using a method that accords with generally accepted engineering principles, such as a method described in the standards for the measurement of fluid flow in closed conduits and for the measurement of liquid flow in open channels, published by the International Organization for Standardization under International Classification for standards numbers 17.120.10 and 17.120.20, respectively, as amended from time to time.

(2) Flow monitoring equipment shall be calibrated to be accurate to within 10 per cent.

(3) The records of the monitoring equipment shall

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- (a) contain a description of the monitoring equipment, including the manufacturer's specifications and the year and model number of the equipment;
 - (b) contain the results of the calibration tests of the monitoring equipment; and
 - (c) be kept available for inspection for a period of at least three years. SOR/2004-109, s. 5.

Reporting Monitoring Results

9. (1) Each monthly report of monitoring results and production information referred to in paragraph 7(1)(b) shall contain the following information and shall be submitted to the authorization officer no later than 30 days after the end of the month to which the report relates:

- (a) the data required by section 8.1 of Reference Method EPS 1/RM/13 Second Edition and section 8.1 of Reference Method EPS 1/RM/14 Second Edition for all tests that were conducted in accordance with Schedule II during the month, including any additional tests that were conducted on samples collected in accordance with the procedures specified in that Schedule;
- (b) the results of all BOD tests and suspended solids tests that were conducted in accordance with Schedule II during the month, including any additional tests that were conducted on samples collected in accordance with the procedures specified in that Schedule;
- (c) the average daily BOD of the BOD matter that was deposited during the month and the average daily quantity of suspended solids that was deposited during the month, calculated on the basis of the results referred to in paragraph (b);
- (d) the total BOD of the BOD matter that was deposited during the month and the total quantity of suspended solids that was deposited during the month, calculated by multiplying the number of days in the month during which effluent was deposited by the applicable daily average for that month referred to in paragraph (c);
- (e) the volume of effluent that was deposited during each daily period in the month;
- (f) in the case of a mill at which, under the authority of an authorization, treated effluent is combined with other effluent before being deposited, the volume of each effluent that is to be treated and the volume of the treated effluent before it is

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combined, for any daily period during which samples of effluent are collected in accordance with section 15 of Schedule II; and

(g) in the case of a mill, the quantity of finished product, measured in accordance with subsection 12(3), that was produced during each daily period that the mill was in operation during the month.

(2) Each annual report, or series of partial reports covering a calendar year, of monitoring results and production information referred to in paragraph 7(3)(a) shall contain the following information and shall be submitted to the authorization officer no later than January 31 following the calendar year to which the report or series of partial reports relates:

(a) the results of all BOD tests that were conducted in accordance with Schedule II during the calendar year, including any additional tests that were conducted on samples collected in accordance with the procedures specified in that Schedule;

(b) the volume of effluent that was deposited during each daily period in the calendar year that a BOD test was conducted; and

(c) the quantity of finished product, measured in accordance with subsection 12(3), that was produced during each daily period in the calendar year that the mill was in operation.

(3) Each report referred to in this section shall be submitted electronically in the format provided by the federal Department of the Environment, but the report shall be submitted in writing if

(a) no such format has been provided; or

(b) it is, owing to circumstances beyond the operator's control, impracticable to submit the report electronically in the format provided. SOR/2004-109, s. 6.

Identifying Information

[SOR/2004-109, s. 7]

10. (1) The identifying information referred to in paragraph 7(1)(d) is as follows:

(a) the name and address of both the owner and the operator of the mill or the off-site treatment facility, as the case may be;

(b) the day referred to in paragraphs 30(1)(a) to (d) after which the interpretive report is required to be submitted to the authorization officer;

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(c) in the case of a mill that treats, in addition to its own effluent, waste water from sources other than a mill, the name and address of both the owner and the operator of each of those sources; and

(d) in the case of an off-site treatment facility that treats industrial waste water from sources other than a mill, the name and address of both the owner and the operator of each of those sources.

(1.1) The identifying information referred to in paragraph 7(3) (b) is as follows:

(a) the name and address of both the owner and the operator of the mill; and

(b) the name and address of both the owner and the operator of the off-site treatment facility into which effluent is deposited.

(2) The identifying information shall be submitted no later than

(a) 30 days after the day on which this subsection comes into force; or

(b) the day on which the mill or off-site treatment facility becomes subject to these Regulations, if that day is after the period referred to in paragraph (a).

(3) Any change in the information previously submitted shall be submitted no later than 90 days after the change occurs. SOR/2004-109, s. 8.

Emergency Response Plan

11. (1) The emergency response plan referred to in paragraphs 7(1) (f) and (3) (c) shall describe the measures to be taken to prevent any deposit of a deleterious substance out of the normal course of events or to mitigate the effects of such a deposit. The plan shall include the following elements:

(a) the identification of any deposit out of the normal course of events that can reasonably be expected to occur at the mill or off-site treatment facility and that can reasonably be expected to result in damage or danger to fish habitat or fish or the use by man of fish, and the identification of the damage or danger;

(b) a description of the measures to be used to prevent, prepare for and respond to a deposit identified under paragraph (a);

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- (c) a list of the individuals who are to implement the plan in the event of a deposit out of the normal course of events, and a description of their roles and responsibilities;
 - (d) the identification of the emergency response training required for each of the individuals listed under paragraph (c);
 - (e) a list of the emergency response equipment included as part of the plan, and the equipment's location; and
 - (f) alerting and notification procedures including the measures to be taken to notify members of the public who may be adversely affected by a deposit identified under paragraph (a).

(2) The emergency response plan shall be prepared no later than

- (a) 30 days after the day on which this subsection comes into force; or
- (b) the day on which the mill or off-site treatment facility becomes subject to these Regulations, if that day is after the period referred to in paragraph (a).

(3) An updated emergency response plan shall be prepared no later than January 31 of each calendar year.

(4) If a mill or an off-site treatment facility has not been subject to the requirements of these Regulations for more than one year, a new emergency response plan shall be prepared on the day on which the mill or the facility again becomes subject to these Regulations. SOR/2004-109, s. 9.

Reference Production Rate

12. (1) The reference production rate of a mill for any year is equal to the highest value of the 90th percentiles of the daily production of finished product at the mill for any of the previous three years.

(2) The 90th percentile of the daily production of finished product at a mill for a year is the statistically derived value that is equal to the quantity of finished product, produced daily by the mill, that was exceeded on 10 per cent of the days that the mill operated in the year.

(3) The production of finished product shall be measured in tonnes, taking into account the following:

- (a) in the case of pulp,

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- (i) if its moisture content exceeds 10%, the weight of the pulp shall be adjusted so that its moisture content does not exceed 10%, or
- (ii) if its moisture content is equal to or less than 10%, the weight of the pulp shall not be adjusted; and
- (b) in the case of a paper product, the weight of the paper product shall be its weight after it has been machine dried.

(4) The reference production rates referred to in paragraph 7(1)(g) shall be submitted for each calendar year to the authorization officer no later than January 31 of the following year. SOR/2004-109, s. 10.

13. (1) Where less than three years of data are available on which to calculate the reference production rate of a mill, the operator may use a reference production rate calculated on the basis of available data or may apply to the authorization officer for an interim reference production rate.

(2) If the 90th percentile of the daily production of finished product at a mill has increased or is expected to increase by more than 25%, in respect of any period of 100 consecutive days, from the reference production rate of the mill, the operator may apply to the authorization officer for an interim reference production rate.

(3) If the 90th percentile of the daily production of finished product at a mill has decreased or is expected to decrease by more than 25%, in respect of any period of 100 consecutive days, from the reference production rate of the mill, the operator shall apply to the authorization officer for an interim reference production rate no later than 31 days after the decrease occurs or after becoming aware of the expected decrease, as the case may be.

(4) An applicant for an interim reference production rate shall submit plans, specifications and other information on the design and capability of the mill's production process to the authorization officer and such further information as the authorization officer may subsequently require to assess the application.

(5) If, in accordance with subsection (1), (2) or (3), the authorization officer assigns an interim reference production rate to a mill to be used for the purposes of section 14 instead of the reference production rate, the interim reference production rate shall be based on an estimation of what the 90th percentile of the daily production would be at that mill. The estimation shall be

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based on the information submitted in accordance with subsection (4).

(6) The use of an interim reference production rate shall commence on the day the authorization officer may specify and expires at the end of the year. SOR/2004-109, ss. 11, 36(E).

Maximum Bod and Maximum Quantity of Suspended Solids Authorized for Mills

14. Unless an authorization has been issued authorizing the deposit of BOD matter or suspended solids, as the case may be, the maximum BOD of the BOD matter that may be deposited from a mill and the maximum quantities of suspended solids that may be deposited from a mill are as follows:

(a) in respect of a daily period, the amounts determined using the formula

$$Q_d = F \times 2.5 \times RPR$$

and

(b) in respect of a month, the amounts determined using the formula

$$Q_m = F \times D \times 1.5 \times RPR$$

where

D is the number of calendar days in the month,

F is equal to a factor of 5 for BOD and 7.5 for suspended solids, expressed in kilograms per tonne of finished product,

Q_d is the maximum BOD of the BOD matter that may be deposited during a daily period or the maximum quantity of suspended solids that may be deposited during a daily period, as the case may be, expressed in kilograms,

Q_m is the maximum BOD of the BOD matter that may be deposited during a month or the maximum quantity of suspended solids that may be deposited during a month, as the case may be, expressed in kilograms, and

RPR is the reference production rate of the mill for all finished product, expressed in tonnes per day.

SOR/2004-109, s. 12.

Authorizations

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15. (1) An application for an authorization may be made by one or more of

- (a) the owner or operator of a mill that treats, in addition to its own effluent, waste water from sources other than a mill and that commenced operations before November 3, 1971, who seeks an authorization to deposit, or to permit the deposit of, BOD matter or suspended solids in quantities that exceed the maximum quantities authorized by section 14;
- (b) the owner or operator of a mill that treats effluent from the production of dissolving grade sulphite pulp and that commenced operations before November 3, 1971, who seeks an authorization to deposit, or to permit the deposit of, BOD matter or suspended solids in quantities that exceed the maximum quantities authorized by section 14;
- (c) the owner or operator of an off-site treatment facility who seeks an authorization to deposit, or to permit the deposit of, BOD matter or suspended solids; or
- (d) the owner or operator of a mill who seeks an authorization to combine treated effluent with other effluent before the treated effluent is deposited.

(2) An application for an authorization shall contain the information specified in Schedule III and shall be submitted to the authorization officer. SOR/2004-109, s. 12.

16. (1) The authorization officer may issue to the owner or operator of a mill referred to in paragraph 15(1)(a) an authorization to deposit, or to permit the deposit of, BOD matter and suspended solids in quantities that exceed the maximum quantities authorized by section 14, if the quantities so authorized are the lowest that can be achieved and do not exceed the maximum quantities that may be authorized under section 19.

(2) The authorization officer may issue to the owner or operator of a mill referred to in paragraph 15(1)(b) an authorization to deposit, or to permit the deposit of, BOD matter and suspended solids in quantities that exceed the maximum quantities authorized by section 14, if the quantities so authorized are the lowest that can be achieved and do not exceed the maximum quantities that may be authorized under section 20.

(3) An authorization may not be issued under subsection (1) or (2) unless the owner or operator of the mill has taken all applicable preventative measures at the production stage to reduce

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the BOD of all BOD matter and the quantity of suspended solids in the effluent.

(4) The authorization officer may issue to the owner or operator of an off-site treatment facility referred to in paragraph 15(1)(c) an authorization to deposit, or to permit the deposit of, BOD matter and suspended solids, if the quantities so authorized are the lowest that can be achieved and do not exceed the maximum quantities that may be authorized under section 21. SOR/2004-109, s. 12.

17. (1) The authorization officer may issue to the owner or operator of a mill referred to in paragraph 15(1)(d) an authorization to combine treated effluent with other effluent before the treated effluent is deposited if

(a) the operator has taken all reasonable steps, before the effluent is treated, to reduce the BOD of the BOD matter, the quantity of suspended solids and the lethality in respect of the effluent to be treated;

(b) the operator has instituted or intends to institute a water conservation program at the mill that would so reduce the volume of the effluent requiring treatment that it would still be acutely lethal despite treatment;

(c) the treatment process removes at least 90 per cent of the BOD of all BOD matter in the effluent that is treated; and

(d) the other effluent is not acutely lethal before being combined with the treated effluent.

(2) Treated effluent may not be combined with other effluent in accordance with an authorization under subsection (1) unless the operator institutes the water conservation program referred to in that subsection. SOR/2004-109, s. 13.

18. (1) No authorization shall be issued under section 16 or 17 if the authorization officer has data indicating that the quantity of the deleterious substances to be authorized has had or will have a significant effect on fish, fish habitat or the use by man of fish that is more adverse than if the quantities were the maximum quantities authorized under section 14.

(2) An authorization shall be issued in the form set out in Schedule IV.

(3) The authorization officer may amend or withdraw any authorization if

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- (a) new data indicate that the quantity of the substances, authorized by the authorization officer, has had or will have a significant effect on fish, fish habitat or the use by man of fish that is more adverse than if the quantities were the maximum quantities authorized under section 14;
- (b) any of the grounds on which the authorization was issued ceases to be true;
- (c) an owner or operator has not taken all applicable preventative measures at the production stage to reduce the BOD of the BOD matter, the quantity of suspended solids or the lethality in respect of the effluent to be treated; or
- (d) there is a change in any information provided under section 3, 4 or 5 of Schedule III.

(4) Before issuing, amending or withdrawing an authorization, the authorization officer shall consult with officials in the Department of Fisheries and Oceans and, if the authorization officer is a provincial official, with officials in the federal Department of the Environment. The authorization officer may also consult with any other person, body or group that has an interest in the authorization. SOR/2004-109, ss. 14, 36(E).

Maximum BOD and Maximum Quantity of Suspended Solids Authorized Under an Authorization

19. (1) The maximum BOD of the BOD matter and the maximum quantities of suspended solids that the owner or operator of a mill referred to in paragraph 15(1)(a) may be authorized to deposit, or to permit the deposit of, under an authorization are as follows:

- (a) in respect of a daily period, the amounts determined using the formula

$$Q_d = (F \times 2.5 \times RPR) + [0.375 \times (B_o \text{ or } S_o)]$$

and

- (b) in respect of a month, the amounts determined using the formula

$$Q_m = (F \times D \times 1.5 \times RPR) + [0.225 \times (B_o \text{ or } S_o) \times D]$$

where

B_o is the average daily BOD of the BOD matter in the waste water from sources other than a mill before it is treated by the

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mill, calculated for the preceding calendar year and expressed in kilograms,

D is the number of calendar days in the month,

F is equal to a factor of 5 for BOD and 7.5 for suspended solids, expressed in kilograms per tonne of finished product,

Q_d is the maximum BOD of the BOD matter that may be deposited during a daily period or the maximum quantity of suspended solids that may be deposited during a daily period, as the case may be, expressed in kilograms,

Q_m is the maximum BOD of the BOD matter that may be deposited during a month or the maximum quantity of suspended solids that may be deposited during a month, as the case may be, expressed in kilograms,

RPR is the reference production rate of the mill for all finished product, expressed in tonnes per day, and

S_o is the average daily quantity of suspended solids in the waste water from sources other than a mill before it is treated by the mill, calculated for the preceding calendar year and expressed in kilograms.

(2) The values of B_o and S_o and the supporting data referred to in paragraph 7(1)(h) for each calendar year shall be submitted to the authorization officer no later than January 31 of the following calendar year.

(3) If there are insufficient data on which to calculate the values of B_o and S_o , an estimate of those values may be made based on the data that are available. SOR/2004-109, s. 15.

20. The maximum BOD of the BOD matter and the maximum quantities of suspended solids that the owner or operator of a mill referred to in paragraph 15(1)(b) may be authorized to deposit, or to permit the deposit of, under an authorization are as follows:

(a) in respect of a daily period, the amounts determined using the formula

$$Q_d = (F_1 \times 2.5 \times RPR_1) + (F_2 \times 2.5 \times RPR_2)$$

and

(b) in respect of a month, the amounts determined using the formula

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$$Q_m = (F_1 \times D \times 1.5 \times RPR_1) + (F_2 \times D \times 1.5 \times RPR_2)$$

where

D is the number of calendar days in the month,

F₁ is equal to a factor of 5 for BOD and 7.5 for suspended solids, expressed in kilograms per tonne of finished product other than dissolving grade sulphite pulp,

F₂ is equal to a factor of 18 for BOD and 25 for suspended solids, expressed in kilograms per tonne of dissolving grade sulphite pulp,

Q_d is the maximum BOD of the BOD matter that may be deposited during a daily period or the maximum quantity of suspended solids that may be deposited during a daily period, as the case may be, expressed in kilograms,

Q_m is the maximum BOD of the BOD matter that may be deposited during a month or the maximum quantity of suspended solids that may be deposited during a month, as the case may be, expressed in kilograms,

RPR₁ is the reference production rate of the mill for all finished product other than dissolving grade sulphite pulp, expressed in tonnes per day, and

RPR₂ is the reference production rate of the mill for dissolving grade sulphite pulp, expressed in tonnes per day.

SOR/2004-109, s. 15.

21. (1) The maximum BOD of the BOD matter that the owner or operator of an off-site treatment facility referred to in paragraph 15(1)(c) may be authorized to deposit, or to permit the deposit of, under an authorization is as follows:

(a) in respect of a daily period, the amount determined using the formula

$$Q_d = 0.375 \times A$$

and

(b) in respect of a month, the amount determined using the formula

$$Q_m = 0.225 \times A \times D$$

where

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A is the average daily BOD of the BOD matter in the effluent before it is treated by the off-site treatment facility, calculated for the preceding calendar year and expressed in kilograms,

D is the number of calendar days in the month,

Q_d is the maximum BOD of the BOD matter that may be deposited during a daily period, expressed in kilograms, and

Q_m is the maximum BOD of the BOD matter that may be deposited during a month, expressed in kilograms.

(2) The maximum quantities of suspended solids that the owner or operator of an off-site treatment facility referred to in paragraph 15(1)(c) may be authorized to deposit under an authorization are as follows:

(a) in respect of a daily period, the amount determined using the formula

$$Q_d = 0.563 \times A$$

and

(b) in respect of a month, the amount determined using the formula

$$Q_m = 0.338 \times A \times D$$

where

A is the average daily BOD of the BOD matter in the effluent before it is treated by the off-site treatment facility, calculated for the preceding calendar year and expressed in kilograms,

D is the number of calendar days in the month,

Q_d is the maximum quantity of suspended solids that may be deposited during a daily period, expressed in kilograms, and

Q_m is the maximum quantity of suspended solids that may be deposited during a month, expressed in kilograms.

(3) The value of A and the supporting data referred to in paragraph 7(1)(i) for each calendar year shall be submitted to the authorization officer no later than January 31 of the following calendar year.

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(4) If there are insufficient data on which to calculate the value of A, an estimate of that value may be made based on the data that are available. SOR/2004-109, s. 15.

22. to 26. [Repealed, SOR/2004-109, s. 15]

Information on Outfall Structures

[SOR/2004-109, s. 16(E)]

27. (1) The information on outfall structures required by paragraph 7(1)(j) is as follows:

- (a) a general description of each outfall structure, together with its plans and specifications; and
- (b) a description of the portion of each outfall structure situated at the point at which effluent is deposited, as it pertains to the dispersion of deleterious substances, and more particularly a description of the design, location and maintenance of that portion.

(2) The information on each outfall structure shall be submitted no later than

- (a) 30 days after the day on which this subsection comes into force; or
 - (b) the day on which the mill or off-site treatment facility becomes subject to these Regulations, if that day is after the period referred to in paragraph (a).
- (3) The information on any proposed change to an outfall structure shall be submitted at least 90 days before the change is made. SOR/2004-109, s. 17.

Environmental Effects Monitoring Studies

28. (1) The owner or operator of a mill or an off-site treatment facility shall conduct environmental effects monitoring studies of the potential effects of effluent on the fish population, on fish tissue and on the benthic invertebrate community.

(2) Environmental effects monitoring studies consist of the sublethal toxicity testing referred to in section 29 and the biological monitoring studies referred to in section 30.

(3) The studies shall be performed and their results recorded, interpreted and reported in accordance with generally accepted

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standards of good scientific practice at the time that the studies are performed.

(4) The owner or operator shall submit to the authorization officer reports of the results of the studies in writing and the supporting data in the electronic format provided by the federal Department of the Environment. SOR/2004-109, s. 18.

29. (1) Sublethal toxicity testing shall be conducted in accordance with section 2 of Schedule IV.1, twice in each calendar year, on the aliquots of effluent samples collected in accordance with section 3 of Schedule II from the outfall structure that has potentially the most adverse environmental impact.

(2) A report on the sublethal toxicity tests shall be prepared twice in each calendar year and submitted to the authorization officer within three months after the completion of the tests.

(3) Despite subsections (1) and (2), the owner or operator of a mill or an off-site treatment facility that deposits effluent from the outfall structure referred to in subsection (1) on fewer than 120 days in any calendar year is required to conduct and submit the report on the sublethal toxicity tests only once in respect of that calendar year. SOR/2004-109, s. 18.

30. (1) Biological monitoring studies shall be conducted and an interpretive report shall be submitted to the authorization officer, in accordance with sections 3 to 12 of Schedule IV.1, within three years, after

- (a) the day on which a mill or an off-site treatment facility first becomes subject to these Regulations, which day shall not precede the coming into force of this section;
- (b) the day on which a mill or an off-site treatment facility again becomes subject to these Regulations, after having not been subject to them for at least three consecutive years, which day shall not precede the coming into force of this section;
- (c) April 1, 2004, if, on the coming into force of this section, the owner or operator of a mill or an off-site treatment facility was subject to the requirements of sections 28 to 32, 34 and 35 of these Regulations, as they read before that day and the owner or operator was required to submit an interpretive report no later than April 1, 2004; or
- (d) the day on which the owner or operator of a mill or an off-site treatment facility is required to submit an interpretive report in accordance with section 31.

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(2) Subject to subsection (3), subsequent biological monitoring studies shall be conducted and interpretive reports shall be submitted to the authorization officer within three years after the day on which the most recent interpretive report was required to be submitted.

(3) The time limit for conducting subsequent biological monitoring studies and submitting an interpretive report is six years after the day on which the most recent report was required to be submitted, if the two most recent interpretive reports showed no effect on the fish population, on fish tissue and on the benthic invertebrate community as those expressions are defined in section 1 of Schedule IV.1. SOR/2004-109, s. 18.

Transitional

31. The owner or operator of a mill or an off-site treatment facility who on the coming into force of this section was subject to the requirements of sections 28 to 32, 34 and 35 of these Regulations, as they read before that day, shall complete any studies and submit an interpretive report and supporting data in accordance with the requirements and within the periods set out in those sections, unless the interpretative report was to be submitted no later than April 1, 2004. SOR/2004-109, s. 18.

Reports of Deposits out of the Normal Course of Events

32. (1) For the purpose of subsection 38(4) of the Act, the following authorities are prescribed:

- (a) the persons providing 24-hour emergency telephone service provided by the Branch or Regional Office set out in column II of Schedule VI for the province, set out in column I, where the mill or the off-site treatment facility is located; and
- (b) the person occupying the position set out in column III of that Schedule, for the province, set out in column I, where the mill or the off-site treatment facility is located.

(2) Any person required by subsection 38(4) of the Act to report the occurrence of a deposit of a deleterious substance out of the normal course of events, or a serious and imminent danger of that occurrence, shall immediately notify an inspector or an authority referred to in paragraph (1)(a) of the occurrence or danger and shall, if a deposit has occurred, submit a written report to an inspector or the authority referred to in paragraph (1)(b) as soon as possible in the circumstances and, in any event, no later than 30 days after the deposit occurred.

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(3) For the purpose of evaluating the effect of a deposit out of the normal course of events that has occurred from an outfall structure, the operator shall, in accordance with subsections 2(1) and (2) of Schedule II and as soon as possible in the circumstances,

- (a) collect a grab sample from the outfall structure through which the deposit occurred and subject the sample to
 - (i) a test conducted in accordance with section 6 of Reference Method EPS 1/RM/13 Second Edition, and
 - (ii) a test conducted in accordance with section 6 of Reference Method EPS 1/RM/14 Second Edition; and
- (b) subject another sample, collected from the outfall structure through which the deposit occurred in accordance with section 6 of Schedule II, to a BOD test.

(4) The collecting and testing of a sample under subsection (3) are not required if, for the purpose of monitoring effluent under paragraph 7(1)(b), the same sample has already been collected and the same test has been conducted whose result permits the determination of the effect of the deposit out of the normal course of events.

(5) The written report shall contain the following information:

- (a) the BOD of the BOD matter that was deposited, and the quantity of suspended solids that was deposited, that exceeded the maximum respective quantities authorized by section 14 or under an authorization or, if either of them cannot be determined, an estimate of that BOD or of that quantity of suspended solids, or both, along with information and supporting data on how the estimate was derived;
- (b) an estimate of the BOD of the BOD matter that was deposited during any period in which the monitoring equipment was malfunctioning, and of the quantity of suspended solids that was deposited during that period, along with information and supporting data on how the estimate was derived;
- (c) the volume or, if the volume cannot be determined, an estimate of the volume of acutely lethal effluent that was deposited and the results of the test that was conducted pursuant to subparagraph (3)(a)(i) or any test that meets the criteria of subsection (4);

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- (d) the results of the test that was conducted pursuant to subparagraph (3) (a) (ii) or any test that meets the criteria of subsection (4);
- (e) the quantity of any deleterious substance that was deposited in any way other than through an outfall structure in respect of which a plan had been provided in accordance with paragraph 27(1) (a) or, if the quantity cannot be determined, an estimate of the quantity along with information and supporting data on how the estimate was derived;
- (f) the quantity of any deleterious substance that was deposited through an outfall structure through which untreated effluent is deposited or, if the quantity cannot be determined, an estimate of the quantity along with information and supporting data on how the estimate was derived; and
- (g) the circumstances of the deposit, the measures that were taken to mitigate the effects of the deposit and, if the emergency response plan prepared in accordance with section 11 was implemented, details concerning its implementation. SOR/99-166, s. 1; SOR/2004-109, s. 18.

PART 2

PORT ALBERNI MILL

Application

33. This Part applies in respect of the Port Alberni Mill. SOR/2004-109, s. 18.

Authority to Deposit

34. (1) For the purpose of paragraph 36(4) (b) of the Act, the owner or operator of the mill may deposit, or permit the deposit of, BOD matter in Alberni Inlet if the BOD of the BOD matter does not exceed

- (a) during any daily period, 5 641 kg; and
- (b) during any month, an average of 3 385 kg per daily period.

(2) For the purpose of paragraph 36(4) (b) of the Act, the owner or operator of the mill may deposit, or permit the deposit of, suspended solids in Alberni Inlet if the quantity of suspended solids does not exceed

- (a) during any daily period, 10 154 kg; and

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(b) during any month, an average of 6 092 kg per daily period.

(3) The authority to deposit BOD matter and suspended solids conferred by subsections (1) and (2) does not confer any authority to deposit acutely lethal effluent.

(4) For the purpose of paragraph 36(4)(b) of the Act, the owner or operator of the mill may deposit, or permit the deposit of, any concentration of acutely lethal effluent, any BOD matter and any quantity of suspended solids into

(a) a treatment facility that is owned or operated by the owner of the factory; or

(b) if the factory is part of a complex, the common treatment facility for the factories that are part of the complex.
SOR/2004-109, s. 18.

Conditions Governing Authority to Deposit

35. (1) The authority of the owner or operator of the mill under section 34 is conditional on the operator

(a) installing, maintaining and calibrating monitoring equipment, and keeping records of that equipment, in accordance with section 8;

(b) monitoring effluent in accordance with Schedule II and submitting to the authorization officer a monthly report of the monitoring results and production information in accordance with subsections 9(1) and (3), other than paragraphs (1)(d) and (f);

(c) notifying an inspector, without delay, of any result of a test conducted in accordance with Schedule II and of any result of any additional test that was conducted on samples collected in accordance with the procedures specified in that Schedule, other than in the case of a deposit out of the normal course of events, that indicates a failure or non-compliance with these Regulations, and reporting the test results in writing to the inspector within 10 days after the notification;

(d) submitting the identifying information to the authorization officer in accordance with paragraph 10(1)(a) and subsections 10(2) and (3);

(e) preparing and updating annually a remedial plan describing the measures to be taken by the operator to eliminate all unauthorized deposits of deleterious substances in the case

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where effluent fails an acute lethality test conducted in accordance with Schedule II;

- (f) conducting a dissolved oxygen monitoring program in accordance with Schedule VII and submitting to the authorization officer data obtained from the program and reports in accordance with section 36;
- (g) preparing an emergency response plan in accordance with section 11 and making it readily available on site to persons who are to implement the plan;
- (h) submitting the information on outfall structures to the authorization officer in accordance with section 37, and depositing effluent only through those outfall structures;
- (i) complying with the requirements for environmental effects monitoring studies set out in sections 28 and 29 and conducting biological monitoring studies and submitting an interpretive report to the authorization officer, in accordance with sections 3 to 12 of Schedule IV.1, no later than April 1, 2007, and, with respect to subsequent biological monitoring studies and reports, complying with the requirements of subsections 30(2) and (3); and
- (j) keeping available for inspection
 - (i) for at least five years, the information and data specified in section 8.2 of Reference Method EPS 1/RM/13 Second Edition and section 8.2 of Reference Method EPS 1/RM/14 Second Edition,
 - (ii) for at least three years, the results of all pH levels and electrical conductivity tests conducted in accordance with Schedule II,
 - (iii) for at least five years, a remedial plan and every update of it,
 - (iv) for at least five years, an emergency response plan and every update of it, and
 - (v) for at least six years, all records, reports and data collected or prepared for the purposes of an environmental effects monitoring study.

(2) The authority of the owner or operator of the mill under section 34 is also conditional on the operator

- (a) not combining any treated effluent with water before the treated effluent is deposited; and

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(b) not combining any treated effluent with any other effluent before the treated effluent is deposited, unless

(i) neither the treated effluent nor the other effluent is acutely lethal, and

(ii) the treated effluent and the other effluent are monitored in accordance with sections 17 to 19 of Schedule II before they are combined.

(3) The authority of the owner of the mill under section 34 is, if the owner is not the same person as the operator, also conditional on the owner exercising all due diligence to ensure that the operator meets the applicable conditions specified in this section. SOR/2004-109, s. 18.

Submission of Data and Reports in Respect of the Dissolved Oxygen Monitoring Program

36. (1) The data obtained from the dissolved oxygen monitoring program referred to in paragraph 35(1)(f) shall be submitted to the authorization officer no later than 30 days after the end of the month in which the data are collected.

(2) An interpretive report that describes and evaluates the data obtained from the dissolved oxygen monitoring program in any calendar year shall be submitted to the authorization officer no later than March 31 following that calendar year.

(3) The data and the report shall be submitted electronically in the format provided by the federal Department of the Environment, but they shall be submitted in writing if

(a) no such format has been provided; or

(b) it is, owing to circumstances beyond the operator's control, impracticable to submit them electronically in the format provided. SOR/2004-109, s. 18.

Information on Outfall Structures

37. (1) The information on outfall structures required by paragraph 35(1)(h) is as follows:

(a) a general description of each outfall structure, together with its plans and specifications; and

(b) a description of the portion of each outfall structure situated at the point at which effluent is deposited, as it

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pertains to the dispersion of deleterious substances, and more particularly a description of the design, location and maintenance of that portion.

(2) Information on any proposed change to an outfall structure shall be submitted at least 90 days before the change is made. SOR/2004-109, s. 18.

Reports of Deposits out of the Normal Course of Events

38. (1) For the purpose of subsection 38(4) of the Act, the following authorities are prescribed:

- (a) the persons providing 24-hour emergency telephone service provided by the Branch set out in column II of item 6 of Schedule VI; and
- (b) the person occupying the position set out in column III of item 6 of that Schedule.

(2) Any person required by subsection 38(4) of the Act to report the occurrence of a deposit of a deleterious substance out of the normal course of events, or a serious and imminent danger of that occurrence, shall immediately notify an inspector or an authority referred to in paragraph (1)(a) of the occurrence or danger and shall, if a deposit has occurred, submit a written report to an inspector or the authority referred to in paragraph (1)(b) as soon as possible in the circumstances and, in any event, no later than 30 days after the deposit occurred.

(3) For the purpose of evaluating the effect of a deposit out of the normal course of events that has occurred from an outfall structure, the operator shall, in accordance with subsection 2(1) of Schedule II and as soon as possible in the circumstances,

- (a) collect a grab sample from the outfall structure through which the deposit occurred and subject the sample to
 - (i) a test conducted in accordance with section 6 of Reference Method EPS 1/RM/13 Second Edition, and
 - (ii) a test conducted in accordance with section 6 of Reference Method EPS 1/RM/14 Second Edition; and
- (b) subject another sample, collected from the outfall structure through which the deposit occurred in accordance with section 6 of Schedule II, to a BOD test.

(4) The collecting and testing of a sample under subsection (3) are not required if, for the purpose of monitoring effluent under

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paragraph 35(1)(b), the same sample has already been collected and the same test has been conducted whose result permits the determination of the effect of the deposit out of the normal course of events.

(5) The written report shall contain the following information:

- (a) the BOD of the BOD matter that was deposited, and the quantity of suspended solids that was deposited, that exceeded the maximum respective quantities authorized by section 34 or, if either of them cannot be determined, an estimate of that BOD or of that quantity of suspended solids, or both, along with information and supporting data on how the estimate was derived;
- (b) an estimate of the BOD of the BOD matter that was deposited during any period in which the monitoring equipment was malfunctioning, and of the quantity of suspended solids that was deposited during that period along with information and supporting data on how the estimate was derived;
- (c) the volume or, if the volume cannot be determined, an estimate of the volume of acutely lethal effluent that was deposited and the results of the test that was conducted pursuant to subparagraph (3)(a)(i) or any test that meets the criteria of subsection (4);
- (d) the results of the test that was conducted pursuant to subparagraph (3)(a)(ii) or any test that meets the criteria of subsection (4);
- (e) whether any sample of effluent failed an acute lethality test or a *Daphnia magna* test conducted in accordance with sections 17 and 18 of Schedule II;
- (f) the quantity of any deleterious substance that was deposited in any way other than through an outfall structure in respect of which a plan had been provided in accordance with paragraph 37(1)(a) or, if the quantity cannot be determined, an estimate of the quantity along with information and supporting data on how the estimate was derived;
- (g) the quantity of any deleterious substance that was deposited through an outfall structure through which untreated effluent is deposited or, if the quantity cannot be determined, an estimate of the quantity along with information and supporting data on how the estimate was derived; and
- (h) the circumstances of the deposit, the measures that were taken to mitigate the effects of the deposit and, if the emergency response plan prepared in accordance with section 11 was

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implemented, details concerning its implementation. SOR/2004-109, s. 18.

39. [Repealed, SOR/2004-109, s. 18]

SCHEDULE I

(Section 2)

TEST METHODS

1. The test to determine the acute lethality of effluent is a test conducted in accordance with section 5 or 6 of Reference Method EPS 1/RM/13 Second Edition.

2. (1) The test in respect of *Daphnia magna* is a test conducted in accordance with section 5 or 6 of Reference Method EPS 1/RM/14 Second Edition.

(2) Effluent fails the *Daphnia magna* test when, at 100 per cent concentration, it kills more than 50 per cent of the *Daphnia magna* subjected to it during a 48-hour period.

3. (1) The test to determine the BOD of an effluent is a test conducted in accordance with one of the following standard five-day BOD test methods (BOD₅):

(a) the method described in subsections 5210A and 5210B of *Standard Methods for the Examination of Water and Wastewater*, 20th Edition, 1998, published jointly by the American Public Health Association, the American Water Works Association and the Water Environment Federation, as amended from time to time;

(b) the method described in Method H.2, *Determination of Biochemical Oxygen Demand*, December 1991, published by the Technical Section of the Canadian Pulp and Paper Association (now the Pulp and Paper Technical Association of Canada), as amended from time to time; or

(c) a test method equivalent to a method referred to in paragraph (a) or (b) that is required by or authorized under the law of the province where the mill or the off-site treatment facility is located.

(2) The quantity of BOD is measured in terms of an unfiltered sample.

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(3) Despite subsection (1), the test to determine the BOD of an effluent shall

- (a) commence within 48 hours of the sampling; and
- (b) be conducted on a sample that is of such concentration that the depletion of oxygen is equal to or greater than 30% but does not exceed 60%.

4. (1) The test to determine the presence and quantity of suspended solids in effluent is a test conducted in accordance with one of the following standard test methods for total suspended solids:

- (a) the applicable method described in subsections 2540A to 2540E of *Standard Methods for the Examination of Water and Wastewater*, 20th Edition, 1998, published jointly by the American Public Health Association, the American Water Works Association and the Water Environment Federation, as amended from time to time;
- (b) the method described in Method H.1, *Determination of Solids Content of Pulp and Paper Mill Effluents*, August 1993, published by the Technical Section of the Canadian Pulp and Paper Association (now the Pulp and Paper Technical Association of Canada), as amended from time to time; or
- (c) a test method equivalent to a method referred to in paragraph (a) or (b) that is required by or authorized under the law of the province where the mill or the off-site treatment facility is located.

(2) For the purposes of the suspended solids test, where a sample is difficult to filter, the bulk of the solids should be allowed to settle before the sample is filtered so that the upper portion of the sample can be filtered first.

SOR/2004-109, ss. 19 to 23.

SCHEDULE II

(Subsections 7(1) and (3), 8(1), 9(1) and (2), 29(1), 32(3), 35(1) and (2) and 38(3) and paragraph 38(5)(e))

EFFLUENT MONITORING

Required Monitoring

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1. (1) Effluent from a mill other than the effluent from a mill that is deposited into an off-site treatment facility, and effluent from an off-site treatment facility, shall be monitored in accordance with this Schedule for

- (a) the presence of acutely lethal effluent and the effect on *Daphnia magna*;
- (b) the BOD of BOD matter;
- (c) the quantity of suspended solids;
- (d) volume; and
- (e) pH levels and electrical conductivity.

(2) Effluent from a mill that deposits into an off-site treatment facility shall be monitored in accordance with this Schedule for

- (a) the BOD of BOD matter; and
- (b) volume.

Location of Sampling

2. (1) The sampling of effluent from a mill, other than the effluent from a mill that is deposited into an off-site treatment facility, that is required by this Schedule – except for sampling conducted in accordance with sections 14 and 15 or sections 18 and 19 – shall be conducted at any point of an outfall structure that is located upstream of the deposit point of the effluent and downstream of

- (a) the treatment if the mill treats the effluent; and
- (b) the combination point if the mill combines effluents before their deposit.

(2) The sampling of effluent from an off-site treatment facility that is required by this Schedule shall be conducted at any point of an outfall structure that is located downstream of the treatment and upstream of the deposit point of the effluent.

(3) The sampling of effluent from a mill that deposits effluent into an off-site treatment facility that is required by this Schedule shall be conducted at any point of an outfall structure that is located upstream of the deposit point of the effluent in the off-site treatment facility and

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- (a) downstream of the treatment if the mill treats the effluent;
 - (b) downstream of the combination point if the mill combines effluents before their deposit; and
 - (c) upstream of the combination point if the mill combines effluent with waste water or effluent from other sources.

Acute Lethality and Effect on Daphnia magna

3. For the purpose of monitoring for the presence of acutely lethal effluent and the effect on *Daphnia magna*, a grab sample of effluent shall be collected from each outfall structure once a week when the mill or the off-site treatment facility is depositing effluent.

4. (1) Subject to section 5, the samples of effluent collected in accordance with section 3 shall be tested as follows:

- (a) each month, one of the samples collected during that month from each outfall structure in accordance with section 3 shall be subjected to an acute lethality test; and
- (b) each of the samples collected in accordance with section 3 shall be subjected to a *Daphnia magna* test.

(2) The following procedures apply in respect of an acute lethality test referred to in paragraph (1) (a):

- (a) the day on which a sample is to be collected for testing shall be selected by the operator, and notice of that day shall be given to the authorization officer, at least 30 days in advance;
- (b) the operator shall collect the sample on the selected day except if, owing to unforeseen circumstances, the operator cannot sample on that day, and in that case, shall do so as soon as possible after that day; and
- (c) a period of at least 21 days shall intervene between the collection of any two samples for testing.

5. (1) If a sample of effluent from an outfall structure fails a test conducted in accordance with paragraph 4(1)(a) of this Schedule or subparagraph 32(3)(a)(i) or 38(3)(a)(i) of these Regulations, each of the subsequent weekly samples collected from that outfall structure in accordance with section 3 shall be subjected to a test conducted in accordance with section 6 of Reference Method EPS 1/RM/13 Second Edition.

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(2) If a sample of effluent from an outfall structure fails a test conducted in accordance with paragraph 4(1)(b), a grab sample of effluent shall be collected from that outfall structure without delay and subjected to a test conducted in accordance with section 6 of Reference Method EPS 1/RM/13 Second Edition.

(3) Subsection (2) does not apply if, at the time the sample that failed the test conducted in accordance with paragraph 4(1)(b) was collected, a sample of effluent was also collected from that outfall structure under subsection (1) or paragraph 4(1)(a) and subjected to a test in accordance with section 6 of Reference Method EPS 1/RM/13 Second Edition.

(4) If a sample of effluent from an outfall structure fails a test conducted in accordance with subsection (2), each of the subsequent weekly samples collected from that outfall structure in accordance with section 3 shall be subjected to a test conducted in accordance with section 6 of Reference Method EPS 1/RM/13 Second Edition.

(5) The testing of samples of effluent shall continue as required by subsection (1) or (4), as applicable, until three consecutive tests are passed, after which testing may resume as required by section 4.

BOD and Suspended Solids

6. (1) For the purpose of monitoring the BOD of BOD matter and the quantity of suspended solids in the case of a mill whose effluent is described in subsection 1(1) or of an off-site treatment facility, there shall be collected, from each outfall structure during each daily period that the mill or the facility is depositing effluent,

(a) a continuous sample of the effluent;

(b) equal samples of the effluent, collected at least every 15 minutes, for the preparation of a composite sample; or

(c) samples of the effluent in a quantity proportional to the effluent's volume, collected at least every 15 minutes, for the preparation of a composite sample.

(2) If effluent is deposited through an outfall structure for only a portion of a daily period, a sample of effluent shall be collected from that outfall structure during the period when that effluent is being deposited.

7. The samples of effluent collected in accordance with section 6 shall be tested as follows:

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- (a) at least three of the samples collected from each outfall structure during each week shall be subjected to a BOD test; and
- (b) each of the samples collected shall be subjected to a suspended solids test.

8. (1) For the purpose of monitoring the BOD of BOD matter in the case of a mill whose effluent is described in subsection 1(2), there shall be collected, from each outfall structure once during each month,

- (a) a sample of the effluent during any daily period in accordance with section 6 using equipment that is installed, maintained and calibrated so that it is capable of taking duplicate samples of effluent from each outfall structure, or a sufficient volume of effluent from each outfall structure to obtain split samples; or
- (b) at least four grab samples of the effluent, at intervals evenly spaced throughout a daily period and combining them as a composite sample.

(2) If a mill is in operation and is depositing effluent for a daily period or a portion of a daily period during a month, the samples shall be collected during that daily period or portion of a daily period.

(3) If sampling is conducted using the equipment referred to in paragraph (1)(a), the requirements of subsections 8(2) and (3) of these Regulations apply in respect of that equipment.

9. Each of the samples of effluent collected in accordance with section 8 shall be subjected to a BOD test.

Volume of Effluent

10. (1) For the purpose of monitoring the volume of effluent in the case of a mill whose effluent is described in subsection 1(1) or of an off-site treatment facility, the volume of effluent that is deposited through each outfall structure during each daily period shall be determined using the monitoring equipment referred to in paragraph 8(1)(b) of these Regulations.

(2) If the actual volume of effluent that is deposited cannot be determined because the monitoring equipment is malfunctioning, the volume shall be calculated based on flow rates that are estimated using generally accepted engineering principles.

11. (1) For the purpose of monitoring the volume of effluent in the case of a mill referred to in subsection 1(2), the volume of

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effluent that is deposited through each outfall structure during each daily period that a sample is collected in accordance with section 8 shall be

- (a) determined using equipment that is installed, maintained and calibrated so as to permit the determination of the volume of effluent that is deposited through each outfall structure using a method that accords with generally accepted engineering principles, such as a method referred to in paragraph 8(1)(b) of these Regulations; or
- (b) calculated based on flow rates that are estimated using generally accepted engineering principles.

(2) If the volume of effluent is determined using equipment referred to in paragraph (1)(a), the requirements of subsections 8(2) and (3) of these Regulations apply in respect of that equipment.

pH Levels and Electrical Conductivity

12. For the purpose of monitoring the pH levels and electrical conductivity of effluent, the effluent that is deposited through each outfall structure shall be tested continuously for pH levels and for electrical conductivity.

Combination of Effluents

Authorization to Combine

13. If, under the authority of an authorization, treated effluent is combined with other effluent at a mill before being deposited, the effluent at the mill shall, in addition to being monitored in accordance with the other requirements of this Schedule, be monitored for the presence of acutely lethal effluent, for the BOD of BOD matter and for volume in accordance with sections 14 to 16.

14. For the purpose of monitoring for the presence of acutely lethal effluent, a grab sample of the treated effluent and a grab sample of the other effluent shall be collected once a month upstream of the combination point, and each of the samples collected shall be subjected to an acute lethality test.

15. (1) For the purpose of monitoring the BOD of BOD matter, the following samples of effluent shall be collected once every three months and subjected to a BOD test:

- (a) a sample of each effluent that is to be treated; and

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(b) a sample of the treated effluent upstream of the point where it is combined with the other effluent.

(2) The samples shall be collected in accordance with section 6 using equipment that is installed, maintained and calibrated so that it is capable of taking duplicate samples of effluent or a sufficient volume of effluent to obtain split samples, or

(a) in the case of effluent that is to be treated,

(i) if there is only one effluent to be treated, by collecting grab samples of the effluent not more than six hours apart during a daily period and combining them as a composite sample, or

(ii) if there is more than one effluent to be treated, by collecting grab samples of each effluent not more than six hours apart during a daily period and combining them, in proportion to the estimated flow rate of each of the effluents, as a composite sample; and

(b) in the case of the treated effluent, by collecting grab samples of the effluent not more than six hours apart during a daily period and combining them as a composite sample.

(3) If sampling is conducted using the equipment referred to in subsection (2), the requirements of subsections 8(2) and (3) of these Regulations apply in respect of that equipment.

16. (1) For the purpose of monitoring the volume of effluent, the volume of each of the effluents referred to in section 15 shall, during each daily period that a sample is collected in accordance with that section, be determined as follows:

(a) if samples are collected in accordance with section 6 using equipment referred to in subsection 15(2), by using equipment that is installed, maintained and calibrated so that it permits the determination of the volume of the effluent using a method that accords with generally accepted engineering principles, such as a method referred to in paragraph 8(1)(b) of these Regulations; and

(b) if samples are collected in accordance with paragraph 15(2)(a) or (b), by using equipment referred to in paragraph (a) or by means of a calculation based on flow rates that are estimated using generally accepted engineering principles.

(2) If the volume of effluent is determined using equipment referred to in subsection (1), the requirements of subsections

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8(2) and (3) of these Regulations apply in respect of that equipment.

Combination at Port Alberni Mill

17. If treated effluent is combined with other effluent at the Port Alberni Mill before being deposited, the effluent at that mill shall, in addition to being monitored in accordance with the other requirements of this Schedule, be monitored for the presence of acutely lethal effluent and the effect on *Daphnia magna*, and for pH levels and electrical conductivity, in accordance with sections 18 and 19.

18. (1) For the purpose of monitoring for the presence of acutely lethal effluent and the effect on *Daphnia magna*, a grab sample of the treated effluent and a grab sample of the other effluent shall be collected once a week upstream of the combination point, and the samples collected shall be tested as follows:

- (a) the samples collected during one week of each month shall be subjected to an acute lethality test; and
- (b) each of the samples collected shall be subjected to a *Daphnia magna* test.

(2) If a sample of effluent fails a test conducted in accordance with paragraph (1)(b), a grab sample of that effluent shall be collected without delay and subjected to a test conducted in accordance with section 6 of Reference Method EPS 1/RM/13 Second Edition.

(3) Subsection (2) does not apply if, at the time the sample that failed the test conducted in accordance with paragraph (1)(b) was collected, a sample of effluent was also collected from that outfall under paragraph (1)(a) and subjected to a test in accordance with section 6 of Reference Method EPS 1/RM/13 Second Edition.

19. For the purpose of monitoring the pH levels and electrical conductivity of effluent, the treated effluent and the other effluent shall be tested continuously for pH levels and for electrical conductivity upstream of the combination point.

Reduced Monitoring

20. (1) The sampling and testing, other than testing for pH levels and electrical conductivity, of the effluent that is deposited through each outfall structure may be conducted at a reduced frequency of once a month, and the volume of effluent that

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is deposited through that outfall structure may be calculated based on flow rates that are estimated using generally accepted engineering principles, if either of the following conditions is met:

- (a) each sample of effluent from that outfall structure that was tested during the preceding month
 - (i) was not acutely lethal,
 - (ii) contained BOD matter having a BOD of less than 10 mg per litre of effluent,
 - (iii) contained less than 10 mg of suspended solids per litre of effluent, and
 - (iv) contained no other deleterious substance; or
- (b) the effluent from that outfall structure contains only water that has been used exclusively for non-contact cooling purposes.

(2) For the purpose of subsection (1), the sampling of effluent from an outfall structure may be done by collecting a grab sample.

(3) If monitoring of the effluent that is deposited through an outfall structure is being conducted in accordance with subsections (1) and (2) on the basis that the effluent met the conditions specified in paragraph (1)(a), monitoring may no longer be conducted in accordance with those subsections if the effluent

- (a) is acutely lethal;
- (b) contains BOD matter having a BOD of 10 mg or more per litre;
- (c) contains 10 mg or more of suspended solids per litre; or
- (d) contains any other deleterious substance.

SOR/2004-109, s. 24.

SCHEDULE III

(Subsection 15(2) and paragraph 18(3)(d))

INFORMATION TO BE INCLUDED IN APPLICATION FOR AN AUTHORIZATION

1. (1) The name, address and telephone number of the applicant.

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(2) The name, position title, telephone number and facsimile number, if any, of a contact person.

2. The name and address of the mill or off-site treatment facility.

3. (1) In the case of an owner or operator of a mill referred to in paragraph 15(1)(a) of these Regulations who seeks an authorization,

- (a) the average daily BOD of the BOD matter and the average daily quantity of suspended solids, in the waste water from sources other than a mill before the waste water is treated by the mill, expressed in kilograms, and an identification of those sources;
- (b) the reference production rate for all finished product, expressed in tonnes per day;
- (c) a description of the preventative measures that are taken at the mill at the production stage to reduce the BOD of the BOD matter and the quantity of suspended solids in the effluent; and
- (d) an estimate of the percentage of the BOD of the BOD matter, and of the percentage of the quantity of suspended solids that will be removed from the waste water during treatment.

(2) In the case of an owner or operator of a mill referred to in paragraph 15(1)(b) of these Regulations who seeks an authorization,

- (a) the average daily BOD of the BOD matter and the average daily quantity of suspended solids in the effluent before it is treated by the mill, expressed in kilograms;
- (b) the reference production rate of the mill for all finished product other than dissolving grade sulphite pulp and the reference production rate of the mill for dissolving grade sulphite pulp, expressed in tonnes per day;
- (c) a description of the preventative measures that are taken at the mill at the production stage to reduce the BOD of the BOD matter and the quantity of suspended solids in the effluent; and
- (d) the percentage of the BOD of the BOD matter and the quantity of suspended solids that are removed from the effluent during treatment.

(2.1) In the case of an owner or operator of an off-site treatment facility referred to in paragraph 15(1)(c) of these Regulations who seeks an authorization,

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(a) the average daily BOD of the BOD matter in the effluent before it is treated by the off-site treatment facility, expressed in kilograms; and

(b) an estimate of the percentage of the BOD of the BOD matter and of the quantity of suspended solids that will be removed from the effluent during treatment.

(3) The information required by this section must be based on the data that exists for the three-year period before the filing of the application.

(4) Despite subsections (1) to (2.1), an owner or operator who seeks an authorization shall provide, in addition to the information that they are able to provide under those subsections, the projections for the 12 months following the application for the authorization of the information that they were not able to provide under paragraphs (1)(a) and (b), (2)(a), (b) and (d) or (2.1)(a), the plans, specifications, design and a detailed description of the production process and, if applicable, the treatment process if

(a) the owner or operator has not provided all of the information required by subsection (1), (2) or (2.1) but they have provided the information required by paragraphs (1)(c) or (2)(c), as applicable; or

(b) the owner or operator has not provided all of the information required by subsection (1), (2) or (2.1) for the full three-year period referred to in subsection (3) but they have provided the information required by paragraphs (1)(c) or (2)(c), as applicable.

4. (1) In respect of a mill, if the owner or operator seeks authority to combine treated effluent with other effluent before the combined effluent is deposited, the following information is required:

(a) a detailed description of all steps taken and planned to reduce the BOD of the BOD matter, the quantity of suspended solids and the lethality in respect of the effluent to be treated;

(b) a detailed description of the water conservation program referred to in paragraph 17(1)(b) of these Regulations, including information on the facilities constructed and procedures implemented and planned for the purpose;

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- (c) the percentage of the BOD of the BOD matter removed from the effluent to be treated;
- (d) the volume of the treated effluent and of the other effluent;
- (e) the extent of the lethality of the treated effluent and of the other effluent;
- (f) the BOD of the BOD matter and the quantity of suspended solids in the other effluent; and
- (g) the sources of the other effluent.

(2) The information required by paragraphs (1)(c) to (f) shall be given on the basis of

- (a) the average of the results of tests conducted on at least one day for each of the 12 months before the application; and
- (b) an estimate of the average of the results of tests that would be conducted in accordance with these Regulations for the 12 months after the water conservation program is instituted.

5. The details of any adverse effect of the effluent on fish, fish habitat or the use by man of fish that is known to the operator.

6. Such further information as is required to properly assess the application.

SOR/2004-109, ss. 25 to 28.

SCHEDULE IV

(Subsection 18(2))

AUTHORIZATION

[Name and address of owner and operator]

Owner:

Operator:

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in respect of *[name and address of mill or off-site treatment facility]*

is/are hereby authorized, as of *[date]* _____, until *[date]* _____

[Check items that apply.]

To combine treated effluent with other effluent before the treated effluent is deposited.

To deposit BOD of the BOD matter and suspended solids in the quantities and during the periods indicated as follows:

MAXIMUM QUANTITIES PER DAILY PERIOD	
BOD OF THE BOD MATTER (kg)	SUSPENDED SOLIDS (kg)

NUMBER OF DAYS IN THE MONTH	MAXIMUM QUANTITIES PER MONTH	
	BOD OF THE BOD MATTER (kg)	SUSPENDED SOLIDS (kg)
<input type="checkbox"/> 28 days <input type="checkbox"/> 29 days		
<input type="checkbox"/> 30 days		
<input type="checkbox"/> 31 days		

RPR: _____ **t/d B:** _____ **kg/d** **S:** _____ **kg/d**

RPR₁: _____ **t/d** **RPR₂:** _____ **t/d** **A:** _____ **kg/d**

NOTE: These parameters are defined in sections 19 to 21 of the *Pulp and Paper Effluent Regulations*.

IMPORTANT:

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(b) sampling areas within an exposure area where there are gradually decreasing effluent concentrations. (*effet sur la population de poissons*)

"exposure area" means all fish habitat and waters frequented by fish that are exposed to effluent. (*zone exposée*)

"fish" means fish as defined in section 2 of the *Fisheries Act*, but does not include parts of fish, parts of shellfish, parts of crustaceans or parts of marine animals. (*poisson*)

"reference area" means water frequented by fish that is not exposed to effluent and that has fish habitat that, as far as practicable, is most similar to that of the exposure area. (*zone de référence*)

"sampling area" means the area within a reference or exposure area where representative samples are collected. (*zone d'échantillonnage*)

Sublethal Toxicity Testing

2. (1) Sublethal toxicity testing shall be conducted by following the applicable methods referred to in subsections (2) and (3) and by recording the results for a fish species, an invertebrate species and an algal species.

(2) In the case of effluent that is deposited into fresh waters, sublethal toxicity tests shall be conducted by using the following test methodologies, as amended from time to time, as applicable to each species:

(a) in the case of a fish species,

(i) *Biological Test Method: Test of Larval Growth and Survival Using Fathead Minnows* (Report EPS 1/RM/22), February 1992, published by the federal Department of the Environment, or

(ii) *Biological Test Method: Toxicity Tests Using Early Life Stages of Salmonid Fish (Rainbow Trout)* (Reference Method EPS 1/RM/28), July 1998, published by the federal Department of the Environment;

(b) in the case of an invertebrate species, *Biological Test Method: Test of Reproduction and Survival Using the Cladoceran Ceriodaphnia dubia* (Report EPS 1/RM/21), February 1992, published by the federal Department of the Environment; and

(c) in the case of an algal species,

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- (i) *Biological Test Method: Growth Inhibition Test Using Freshwater Alga Selenastrum capricornutum* (Report EPS 1/RM/25), November 1992, published by the federal Department of the Environment, or
 - (ii) *Détermination de l'inhibition de la croissance chez l'algue Selenastrum capricornutum* (Reference Method MA 500-S. cap.2.0), September 1997, published by the Centre d'expertise en analyse environnementale du Québec.

(3) In the case of effluent that is deposited into marine or estuarine waters, sublethal toxicity tests shall be conducted by using the following test methodologies, as amended from time to time, as applicable to each species:

- (a) in the case of an invertebrate species, *Biological Test Method: Fertilization Assay Using Echinoids (Sea Urchins and Sand Dollars)* (Report EPS 1/RM/27), December 1992, published by the federal Department of the Environment; and
- (b) in the case of a fish or algal species, one of the following test methodologies, as applicable,
 - (i) *Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Marine and Estuarine Organisms* (Third Edition) (Reference Method EPA/600/4-91/003), August 1994, published by the U.S. Environmental Protection Agency, or
 - (ii) *Short-term Methods for Estimating the Chronic Toxicity of Effluent and Receiving Waters to West Coast Marine and Estuarine Organisms* (First Edition) (Reference Method EPA/600/R-95-136), August 1995, published by the U.S. Environmental Protection Agency.

Biological Monitoring Studies

3. Biological monitoring studies consist of

- (a) a study respecting the fish population, if the concentration of effluent in the exposure area is greater than 1% in the area located within 250 m of a point of deposit of the effluent in water;
- (b) a study respecting fish tissue if
 - (i) since the submission of the most recent interpretive report, the effluent contained a measurable concentration of 2,3,7,8-TCDD or of 2,3,7,8-TCDF, within the meaning of the *Pulp and*

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Paper Mill Effluent Chlorinated Dioxins and Furans Regulations, or

- (ii) an effect on fish tissue was reported in the most recent interpretive report; and
- (c) a study respecting the benthic invertebrate community.

Study Design

4. (1) At least six months before the commencement of sampling for biological monitoring studies, a study design shall be submitted to the authorization officer that, subject to subsection (2), consists of

- (a) the site characterization referred to in section 5;
- (b) if a study respecting fish population is required under paragraph 3(a), a description of how the study will be conducted, that includes
 - (i) the information referred to in paragraphs 6(a) to (d), and
 - (ii) how the study will determine whether the effluent has an effect on the fish population;
- (c) if a study respecting fish tissue is required under paragraph 3(b), a description of how the study will be conducted that includes
 - (i) the information referred to in paragraphs 6(a) to (d), and
 - (ii) how the study will determine whether the effluent has an effect on fish tissue;
- (d) a description of how the study respecting the benthic invertebrate community will be conducted that includes
 - (i) the information referred to in paragraphs 7(a) to (d), and
 - (ii) how the study will determine whether the effluent has an effect on the benthic invertebrate community;
- (e) the dates and times when any samples will be collected;
- (f) a description of the quality assurance and quality control measures that will be implemented to ensure the validity of the data that is collected;

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(g) a summary of the results of any previous biological monitoring studies that were conducted respecting the fish population, fish tissue or the benthic invertebrate community; and

(h) if the two most recent interpretive reports indicate the same effect on the fish population, on fish tissue or on the benthic invertebrate community, a description of one or more additional sampling areas within the exposure area that are required in order to assess the magnitude and geographical extent of the effect.

(2) If the most recent interpretive report indicates the magnitude and geographic extent of an effect on the fish population, on fish tissue or on the benthic invertebrate community, or that the cause of the effect has not been identified, the study design shall consist of only the summary referred to in paragraph (1)(g) and a detailed description of field and laboratory studies that will be used to determine the cause of the effect.

5. (1) The site characterization consists of

(a) a description of the manner in which the effluent mixes within the exposure area, including an estimate of the concentration of effluent in water at 250 m from each point of deposit of the effluent in water;

(b) a description of the reference and exposure areas where the biological monitoring studies will be conducted that includes a mapped description of the sampling areas and information on the geological, hydrological, oceanographical, limnological, chemical and biological features of those areas;

(c) a description of any anthropogenic, natural or other factors that are not related to the effluent under study and that may reasonably be expected to contribute to any observed effect;

(d) the type of production process and treatment system used by the mill or off-site treatment facility; and

(e) any additional information relevant to the site characterization.

(2) If the information described in subsection (1) was submitted in a previous study design, it may be submitted in summary format, but it shall include a detailed description of any changes to that information since the submission of the most recent study design.

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6. The information respecting the fish population and fish tissue studies shall include a description of and the scientific rationale for

- (a) the fish species selected, taking into account the abundance of the species most exposed to effluent;
- (b) the sampling areas selected;
- (c) the sample size selected; and
- (d) the field and laboratory methodologies selected.

7. The information respecting the benthic invertebrate community studies shall include a description of and the scientific rationale for

- (a) the sampling areas selected, taking into account the benthic invertebrate diversity and the area most exposed to effluent;
- (b) the sample size selected;
- (c) the sampling period selected; and
- (d) the field and laboratory methodologies selected.

Conducting Biological Monitoring Studies

8. (1) Subject to subsection (2), the biological monitoring studies shall be conducted in accordance with the study design submitted under section 4.

(2) If it is impossible to follow the study design because of unusual circumstances, the owner or operator may deviate from the study design but shall inform the authorization officer without delay of those circumstances and of how the study was or will be conducted.

9. When studies respecting fish population or the benthic invertebrate community are conducted, water samples shall be collected from the sampling areas selected under paragraphs 6(b) and 7(a), and the following information shall be recorded:

- (a) water temperature;
- (b) depth;
- (c) concentration of dissolved oxygen;

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(d) in the case of effluent that is deposited into fresh water, pH levels, electrical conductivity, hardness, total phosphorus, total nitrogen and total organic carbon; and

(e) in the case of effluent that is deposited into marine or estuarine waters, salinity.

10. When studies respecting the benthic invertebrate community are conducted, sediment samples shall be collected from the sampling areas selected under paragraph 7(a), and the following information shall be recorded:

(a) particle size distribution and total organic carbon; and

(b) in the case of effluent that is deposited into marine or estuarine waters, the ratio of carbon to nitrogen, redox potential (Eh) and total sulphides.

Assessment of Data Collected From Studies

11. The data collected during the biological monitoring studies shall be used

(a) to calculate the mean, the standard deviation, the standard error and the minimum and maximum values in the sampling areas for

(i) in the case of a study respecting the fish population, and if it is possible to obtain data to establish the following indicators - indicators of growth, reproduction, condition and survival that include the length, total body weight and age of the fish, the weight of its liver or hepatopancreas and, if the fish are sexually mature, the egg weight, fecundity and gonad weight of the fish, and

(ii) in the case of a study respecting the benthic invertebrate community - the total benthic invertebrate density, the evenness index, the taxa richness and the similarity index;

(b) to identify the sex of the fish sampled and the presence of any lesions, tumours, parasites or other abnormalities;

(c) to conduct an analysis of the results of the calculations under paragraph (a) and information identified under paragraph (b) to determine if there is a statistical difference between the sampling areas;

(d) to conduct a statistical analysis of the results of the calculations under paragraph (a) to determine the probability of

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correctly detecting an effect of a pre-defined size and the degree of confidence that can be placed in the calculations; and

- (e) to calculate the concentration of chlorinated dioxins and furans in fish tissue taken from the exposure area, which concentration is expressed as toxic equivalents of 2,3,7,8-tetrachlorodibenzo-para-dioxin.

Interpretive Report

12. (1) After biological monitoring studies are conducted in accordance with sections 8 to 10, an interpretive report shall be prepared that, subject to subsection (2), contains the following information:

- (a) a description of any deviation from the study design that occurred while the biological monitoring studies were being conducted and any impact that the deviation had on the studies;
- (b) the latitude and longitude of sampling areas in degrees, minutes and seconds and a description of the sampling areas sufficient to identify their location;
- (c) the dates and times when samples were collected;
- (d) the sample sizes;
- (e) the results of the data assessment made under section 11 and any supporting raw data;
- (f) based on the results referred to in paragraph (e), the identification of any effect on
- (i) the fish population,
- (ii) fish tissue, and
- (iii) the benthic invertebrate community;
- (g) if the study design contains the information described in paragraph 4(1)(h), the magnitude and geographical extent of the effect on fish population, fish tissue or the benthic invertebrate community;
- (h) the information referred to in sections 9 and 10;
- (i) a description of any complaint within the three preceding years to the owner or operator of a mill about fish flavour or odour;

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(j) the conclusions of the biological monitoring studies, based on the results of the statistical analysis conducted under paragraph 11(c), taking into account any of the following factors that may have affected those results:

- (i) the results of any previous biological monitoring studies,
 - (ii) the presence of anthropogenic, natural or other factors that are not related to the effluent under study and that may reasonably be expected to contribute to any observed effect,
 - (iii) any quality assurance or quality control results that may interfere with the reliability of the conclusions, and
 - (iv) the exposure to effluent of the fish that were sampled;
- (k) a description of the impact of the results on the study design for subsequent biological monitoring studies; and
- (l) the date of the next biological monitoring studies.

(2) If a study design is submitted under subsection 4(2), the interpretive report shall consist of only the cause of the effect on fish population, fish tissue or the benthic invertebrate community, and any supporting raw data and, if the cause was not determined, an explanation of why and a description of any steps that need to be taken in the next study to determine that cause.

(3) For the purposes of paragraph (1)(f), if a study on the fish population or on fish tissue is not required to be conducted under paragraph 3(a) or (b), the effluent is considered to have no effect on the fish population or on fish tissue, respectively.

SOR/2004-109, s. 30.

SCHEDULE V

(Section 2)

AUTHORIZATION OFFICERS

Column I	Column II
Province or part Item of a province	Authorization Officer

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1. Ontario Director, Environmental Protection Branch
Federal Department of the Environment
Ontario Region
 2. Quebec (a) if there is a written agreement in effect between the Government of Canada and the Government of Quebec in respect of information required to be submitted under these Regulations, and the Minister has notified all operators in the province of the agreement,
(i) for the purposes of giving the notification mentioned in paragraph (a) of the definition "daily period" in section 2, and for the purposes of paragraphs 7(1)(h) and (i) and 10(1)(b) and sections 13, 15 to 18 and 28 to 31, of subsection 4(2) of Schedule II and for the purposes of Schedule IV.1, Director, Environmental Protection Branch, Federal Department of the Environment, Quebec Region, and
(ii) for the purposes of all other provisions, le sous-ministre adjoint de la Direction générale des opérations régionales, ministère de l'Environnement du Québec; and
(b) if there is no such agreement in effect, Director, Environmental Protection Branch, Federal Department of the Environment, Quebec Region.
 3. Nova Scotia Director, Environmental Protection Branch
Federal Department of the Environment
Atlantic Region
 4. New Brunswick Director, Environmental Protection Branch
Federal Department of the Environment
Atlantic Region
 5. Manitoba Director, Environmental Protection Branch,
Federal Department of the Environment,
Prairie and Northern Region
 6. British Columbia Director, Environmental Protection Branch
Federal Department of the Environment
Pacific and Yukon Region
 7. Saskatchewan (a) if there is a written agreement in effect between the Government of Canada and the Government of Saskatchewan in respect of these Regulations, and the Minister has notified all operators in the province of the agreement, Manager of Environment, East Boreal EcoRegion,

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- Saskatchewan Environment; and
 (b) if there is no such agreement in effect, Director, Environmental Protection Branch, Federal Department of the Environment, Prairie and Northern Region.
8. Alberta (a) if there is a written agreement in effect between the Government of Canada and the Government of Alberta in respect of these Regulations, and the Minister has notified all operators in the province of the agreement, Director, Northern Region, Regional Services, Alberta Environment; and
 (b) if there is no such agreement in effect, Director, Environmental Protection Branch, Federal Department of the Environment, Prairie and Northern Region.
9. Newfoundland Director, Environmental Protection Branch Federal Department of the Environment Atlantic Region
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SOR/96-293, s. 1; SOR/2003-3, ss. 2 to 5, 6(F); SOR/2004-109, ss. 31 to 33, 35.

SCHEDULE VI

(Subsections 32(1) and 38(1))

NOTIFICATION AND REPORTING OF DEPOSITS OUT OF THE NORMAL COURSE OF EVENTS

	Column I	Column II	Column III
Item	Province	Notification	Written Report
1.	Ontario	Environmental Protection Branch Ontario Region Environment Canada	Director Environmental Protection Branch Ontario Region Environment Canada
2.	Quebec	Environmental Protection Branch Quebec Region Environment Canada	Director Environmental Protection Branch Quebec Region

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			Environment Canada
3.	Nova Scotia	Maritimes Regional Office Canadian Coast Guard Fisheries and Oceans Canada	Director Environmental Protection Branch Atlantic Region Environment Canada
4.	New Brunswick	Maritimes Regional Office Canadian Coast Guard Fisheries and Oceans Canada	Director Environmental Protection Branch Atlantic Region Environment Canada
5.	Manitoba	Manitoba Division Office Environmental Protection Branch Prairie and Northern Region Environment Canada	Director Environmental Protection Branch Prairie and Northern Region Environment Canada
6.	British Columbia	Environmental Protection Branch Pacific and Yukon Region Environment Canada	Director Environmental Protection Branch Pacific and Yukon Region Environment Canada
7.	Saskatchewan	Enforcement and Compliance Branch Saskatchewan Environment	Director Enforcement and Compliance Branch Saskatchewan Environment
8.	Alberta	Enforcement and Monitoring Branch Alberta Environment	Director Enforcement and Monitoring Branch Alberta Environment
9.	Newfoundland and Labrador	Newfoundland and Labrador Regional Office Canadian Coast Guard Fisheries and Oceans Canada	Director Environmental Protection Branch Atlantic Region Environment Canada

SOR/2004-109, s. 34.

SCHEDULE VII

(Paragraph 35(1)(f))

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DISSOLVED OXYGEN MONITORING PROGRAM

Monitoring Stations

1. For the purposes of the dissolved oxygen monitoring program, the monitoring stations are

- (a) the outfall station, located at latitude 49°14.35'N, and longitude 124°49.10'W;
- (b) the HI-2 station, located at latitude 49°13.92'N, and longitude 124°49.17'W;
- (c) the PP-2 station, located at latitude 49°12.98'N, and longitude 124°49.30'W; and
- (d) the 5 km station, located at latitude 49°11.80'N, and longitude 124°49.00'W.

Parameters

2. Readings of the parameters set out in section 3 shall be taken at each monitoring station

- (a) once per week during the period beginning on June 1 and ending on October 31 in each year; and
- (b) three times per month during the period beginning on November 1 and ending on May 31 in each year, and a period of at least seven days shall intervene between the sampling.

3. The following parameters shall be recorded at each monitoring station in vertical profiles, from the surface to the bottom, using a CTD (conductivity, temperature, depth) probe:

- (a) the depth in metres;
- (b) the temperature in degrees Celsius;
- (c) the salinity in parts per thousand; and
- (d) the quantity of dissolved oxygen in milligrams per litre and in per cent air saturation.

Calibration

4. (1) For the purpose of checking the calibration of the CTD probe in respect of the recording of dissolved oxygen, a grab

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sample shall be taken once during each sampling day in accordance with section 2 at the station set out in paragraph 1(c), at depths of 1, 10 and 20 m, and shall be analysed using the Winkler dissolved oxygen analysis method.

(2) For the purpose of checking the calibration of the CTD probe in respect of the recording of salinity, instrument specifications should be followed.

Data to Be Submitted

5. (1) The data to be submitted under subsection 36(1) of the Regulations are the following:

- (a) the parameters set out in paragraphs 3(b), (c) and (d), measured at the surface, at the bottom and at depths of 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 12, 15, 20, 25, 30, 35, 40 and 50 m, where these depths exist, for each monitoring station;
- (b) the Somass River flow, in cubic metres per second, at sampling location 08HB017, for the appropriate day in the year in question as recorded on the Hydat database of the federal Department of the Environment;
- (c) the tide height, in metres, for the appropriate day in the year in question, as set out in the *Canadian Tide and Current Tables*, published by the Department of Fisheries and Oceans; and
- (d) the results of the analyses conducted in accordance with subsection 4(1).

(2) Each of the data referred to in subsection (1) shall include a statement of the hour in the 24-hour format and the date in month, day, year format.

SOR/2004-109, s. 34.

[RELATED PROVISION:

SOR/2004-109:

37. Every authorization that was issued under section 16 or 17 of the *Pulp and Paper Effluent Regulations* before the coming into force of these Regulations and that is not withdrawn before these Regulations come into force remains in effect until it is amended or withdrawn under section 18 of those Regulations, as amended by section 14 of these Regulations.]

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