

Modernization of the *Pulp and Paper Effluent Regulations*

UPDATED DETAILED PROPOSAL FOR CONSULTATION

January 2024



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1.0 INTRODUCTION

The 1992 *Pulp and Paper Effluent Regulations* (PPER) were put in place to streamline the existing 1971 regulations, improve the protection of fish and their habitat, and widen their application to all mills. The effluent limits were developed based on the performance of a group of Canadian mills that were considered good environmental performers in the late 1980s, and what was achievable through their secondary effluent treatment system at the time. Although portions of the PPER have been amended over the last 30 years, a complete review of the regulations has not been done.

In September 2017, Environment and Climate Change Canada (ECCC) shared the document entitled *Proposed Modernization of the Pulp and Paper Effluent Regulations – Consultation Document* with industry, environmental non-governmental organizations (ENGOS), Indigenous Peoples, provincial governments, and other interested parties. The document sought input on four broad themes:

1. Scope of regulations
2. Environmental Protection Measures
3. PPER Administration
4. Compliance & Administrative Requirements

In May 2019, ECCC published a second document entitled *Proposed Modernization of the Pulp and Paper Effluent Regulations – Detailed Proposal for Consultation*, which included the input received on the 2017 *Proposed Modernization of the Pulp and Paper Effluent Regulations – Consultation Document*. The Detailed Proposal for Consultation proposed the following changes to the PPER:

- widened the scope of the PPER to include facilities producing non-traditional products from wood, other plant material, pulp or a pulping process
- improved environmental protection by:
 - lowering effluent limits for currently regulated substances; and
 - adding effluent limits for additional substances, temperature and pH
- simplified administration of the PPER by:
 - Improving the efficacy and efficiency of Environmental Effects Monitoring (EEM) requirements by:
 - focusing biological monitoring requirements on the effects that are potentially of a higher risk to the environment;
 - adding quarterly effluent characterization and water quality monitoring requirements;
 - reducing the time spent by regulatees on investigation studies;
 - requiring the submission of a study design by all mills; and
 - requiring the implementation of solutions identified in EEM studies
 - clarifying the process and effluent limits for idled, closing and closed mills; and
 - revising effluent limits for off-site landfills and expanding the scope to landfills owned by a third party
- modernized methods and schedule for monitoring and reporting by:
 - including requirements for effluent characterization and water quality monitoring
 - incorporating a pH stabilization protocol to be used in conjunction with the existing test method for acute lethality;
 - updating requirements for analytical methods; and
 - updating schedule for requirements for compliance monitoring and reporting

The modernization of the PPER was initiated because:

- EEM studies submitted under the PPER have shown that the effluents from 70% of pulp and paper mills are impacting fish and/or fish habitat, and that the impacts at 55% of these mills pose a potentially higher risk to the environment;
- the Canadian industry is diversifying the products made from wood and other plant materials to include non-traditional products such as nanocrystalline cellulose, lignin and hemicellulose;
- what is achievable through process control and effluent treatment has improved since 1992 when the PPER were put in place, and best technologies and techniques are well documented.

Following the publication of the *Proposed Modernization of the Pulp and Paper Effluent Regulations – Detailed Proposal for Consultation* in 2019, ECCC held 45 consultation sessions and received feedback from interested parties. ECCC has since considered all feedback received, and is proposing the following updates to the modernization proposal outlined in this document. ECCC has analyzed the current state of the Canadian pulp and paper sector using all available regulatory data collected under the PPER from 2012 to 2022 and data provided by our provincial partners under their respective regulatory framework. This document also provides additional information to clarify certain aspects of the proposal.

It should be noted that this *Updated Detailed Proposal* only includes updates and clarifications to the *Proposed Modernization of the Pulp and Paper Effluent Regulations – Detailed Proposal for Consultation (2019)*. Any information not addressed in this *Updated Detailed Proposal* remains the same as what was proposed in the *Proposed Modernization of the Pulp and Paper Effluent Regulations – Detailed Proposal for Consultation (2019)*.

2.0 UPDATES TO SCOPE OF REGULATIONS

2.1 FINISHED PRODUCT DEFINITION

WHAT WAS PROPOSED

In 2019, ECCC proposed to change the definition of **“Finished Product”** to mean pulp, paper, cellulose-based and sugar-based products that has completed the production process at a mill.

WHAT IS BEING UPDATED

ECCC is proposing to remove the sugar-based products from the proposed definition of finished products.

“Finished product” means pulp, paper and cellulose-based product that has completed the production process at a mill.

Mills producing products not captured by the finished product definition could apply for the proposed supplementary discharge allocation described in section 3.3.

ECCC took into consideration:

- clarifying the definition of finished products; and
- ensuring that the definition of finished products covers products that have an impact on mill effluent.

3.0 UPDATES TO ENVIRONMENTAL PROTECTION MEASURES

3.1 INTENSITY FACTORS FOR BOD, SS AND COD FOR OPERATING MILLS

WHAT WAS PROPOSED

In 2019, ECCC proposed to review intensity effluent factors for biochemical oxygen demand (BOD), suspended solids (SS), and add an intensity factor for chemical oxygen demand (COD). These effluent limits aimed to further improve environmental protection, with existing secondary treatment while not requiring tertiary treatment.

WHAT IS BEING UPDATED

ECCC is proposing to update the proposed intensity factors for BOD, SS and COD to reflect what is achievable using a well operated, maintained and monitored secondary effluent treatment system. ECCC is proposing to update the limits for SS and COD for chemical mills, as well as the limits for SS and BOD for mechanical mills, shown in bold below.

Proposed Updated Intensity Factors for Operating Mills						
Mill Category	BOD (kg/t)		SS (kg/t)		COD (kg/t)	
	Daily	Monthly	Daily	Monthly	Daily	Monthly
<i>Chemical</i>	4.25	2.6	7.65	4.6	80	48
<i>Mechanical</i>	1.8	1.1	3.4	2.0	50	30
<i>Paper Recycling Papermaking</i>	1.25	0.75	2.5	1.5	12.5	7.5

ECCC took into consideration:

- the advice from expert consultants that a well operated, maintained and monitored secondary effluent treatment system should achieve an annual average concentration of 20 mg/L or below of BOD and 30 mg/L or below of SS;
- that a safety factor of 50% should be added to the proposed limits to account for shutdowns and upsets; and
- that mills have reduced their water use in recent years.

3.2 AUTHORIZATION FOR HIGH-BRIGHTNESS MECHANICAL MILLS

WHAT WAS PROPOSED

In 2019, ECCC proposed the introduction of three mill process categories: chemical, mechanical and paper recycling. High-brightness mechanical mills were included under the mechanical mill category.

WHAT IS BEING UPDATED

ECCC is proposing a new authorization for mechanical mills producing high-brightness pulp (>65 % ISO) that meet certain criteria to have higher BOD and SS effluent limits.

Criteria to be eligible for this authorization include:

- not being able to meet the effluent limits for mechanical mills;
- demonstrate with data that all measures to reduce effluent BOD and SS have been implemented; and
- demonstrate that the treatment system achieves a minimal reduction rate of 90% for BOD and SS and 60% for COD.

The authorization would allow the lowest effluent standard that can be achieved by the mill, not exceeding the following intensity factors:

- Daily SS: 6.1 kg/t
- Monthly SS: 3.6 kg/t
- Daily BOD: 5.4 kg/t
- Monthly BOD: 3.3 kg/t
- Daily COD: 50 kg/t
- Monthly COD: 30 kg/t

The authorization would be valid for five years and mills could reapply as necessary.

ECCC took into consideration that:

- the production of high-brightness mechanical pulp results in a larger quantity of BOD than the typical mechanical mill; and
- requiring mills producing high-brightness mechanical pulp to meet the effluent limits for typical mechanical mills could require tertiary treatment.

3.3 ADJUSTMENT TO RPR FOR BIOTRANSFORMING MILLS

WHAT WAS PROPOSED

In 2019, ECCC proposed allowing mills producing bioproducts to apply for an interim reference production rate (RPR) when the production of bioproducts accounted for more than 25% of the total RPR and increased the organic loading to the effluent treatment system by more than 25%.

WHAT IS BEING UPDATED

ECCC is proposing to allow mills producing bioproduct(s) to apply for a supplementary discharge allocation.

- The supplementary discharge allocation would be based on the BOD, COD and SS loading to the effluent treatment system resulting from the production of the bioproduct(s).
- To qualify:
 - mills would be required to meet applicable limits prior to application; and
 - the bioproduct(s) would have to result in a minimum 10% increase in BOD, COD and SS loading to the effluent treatment system above the loading from conventional finished products.
- Mills would apply for the allocation once, and the allocation limit would be re-calculated annually based on the previous year’s daily loading data.
- The calculation for the supplementary discharge allocation would be:

Substance	BOD (daily)	BOD (monthly)	SS (daily)	SS (monthly)	COD (daily)	COD (monthly)
Proposed (kg)	$0.250 \times B_o$	$0.150 \times B_o \times D$	$0.250 \times S_o$	$0.150 \times S_o \times D$	$0.8 \times C_o$	$0.6 \times C_o \times D$

- B_o is the average* daily BOD loading resulting from biotransformation production
- S_o is the average* daily SS loading resulting from biotransformation production
- C_o is the average* daily COD loading resulting from biotransformation production
- D is the number of days in the month

* based on the previous year’s daily loading data or for new mills or mills undergoing production changes, based on estimates of loading to initially establish discharge allocations

- For mills producing only bioproducts, they would have to submit:
 - plans outlining the production process;
 - a description of steps taken to reduce BOD, SS and COD at the production stage; and
 - a description of the effluent treatment system and its capacity to meet the required limits.

- For effluent containing one or more substances from Schedule 1 of the *Canadian Environmental Protection Act* as a result of biotransformation, the effluent would not be able to exceed the predicted no effect concentrations (PNECs) of those substances.

ECCC took into consideration:

- comments indicating that the use of an interim RPR to accommodate biotransformation would present implementation challenges when regulating biotransformation processes, given the unknown nature of the deleterious substance loadings from these processes; and
- what is achievable using a well operated, maintained and monitored effluent treatment system.

3.4 CONCENTRATION-BASED LIMITS FOR PHOSPHORUS AND NITROGEN

WHAT WAS PROPOSED

In 2019, ECCC proposed to implement weekly maximum average, and monthly maximum average concentration-based limits for nitrogen and phosphorus.

WHAT IS BEING UPDATED

ECCC is proposing to update the concentration-based limits for phosphorus to reflect what is achievable using a well operated, maintained and monitored secondary effluent treatment system, shown in bold below.

Proposed Concentration-Based Limits for Operating Mills				
Mill Category	Total Phosphorus (mg/L)		Total Nitrogen (mg/L)	
	Weekly Maximum Average	Monthly Maximum Average	Weekly Maximum Average	Monthly Maximum Average
<i>All Processes</i>	2.5	2.0	20	15

ECCC took into consideration that:

- proposed concentration-based limits should align with what is technically achievable, and account for treatment system variability.

3.5 TEMPERATURE LIMIT

WHAT WAS PROPOSED

In 2019, ECCC proposed to limit effluent temperature for all final effluents for all mills to a maximum daily temperature of 40°C and a maximum monthly average temperature of 35°C.

WHAT IS BEING UPDATED

ECCC is proposing to limit effluent temperature for all final effluents to a maximum daily temperature of 45°C, with no requirement for a monthly temperature limit.

ECCC took into consideration:

- optimal biological treatment temperature for a well operated, maintained and monitored secondary effluent treatment system;
- effluent temperature fluctuations; and
- the water quality temperature guidelines for various Canadian fish species.

3.6 pH LIMIT

WHAT WAS PROPOSED

In 2019, ECCC proposed to limit final effluent pH to within a range of 6.0 – 9.5 for freshwater receiving environments, and 6.5 – 9.2 for marine receiving environments.

WHAT IS BEING UPDATED

ECCC is proposing to limit final effluent pH for all mill effluents in all receiving environments to the range of 6.0 to 9.5.

ECCC took into consideration:

- comments received during consultation that the marine range may not be achievable; and
- aligning with other modern Fisheries Act regulations such as the *Metal and Diamond Mining Effluents Regulations*.

4.0 UPDATES TO PPER ADMINISTRATION

4.1 NEW PROVISIONS FOR CLOSED AND CLOSING MILLS

WHAT WAS PROPOSED

In 2019, ECCC proposed to require a two-phase procedure for mills planning to close:

- Phase 1: Preparation for closure
- Phase 2: Closure of mill

WHAT IS BEING UPDATED

Phase 1 Clarifications:

- Following the public announcement of closure, a mill will be given a period of time (e.g. 30 days) to notify ECCC, and an additional period of time (e.g. 45 days) to prepare and submit a closure plan that would be required before the process of closing the mill began.
- ECCC will provide a list of eligible 'key pieces of equipment' for removal to inform the mill closure plan.

ECCC took into consideration:

- comments that mills are often not able to disclose their intent to close until this information is first released to the public.

4.2 NEW PROVISIONS FOR IDLED MILLS

WHAT WAS PROPOSED

In 2019, ECCC proposed to require the owner or operator of a mill to notify ECCC when the mill has stopped or is expected to stop production for 100 consecutive days or more. The mill would then enter idled mill status.

WHAT IS BEING UPDATED

ECCC is proposing to extend the requirement for a mill to notify when it has stopped or is expected to stop production from 100 consecutive days to 6 consecutive months.

ECCC took into consideration:

- comments that some major mill upgrades or investments may take longer than 100 consecutive days to complete, and during an extended maintenance shutdown, a mill should not be considered idled as it would intend to restart production once the maintenance is complete.

4.3 STUDY DESIGNS FOR ENVIRONMENTAL EFFECTS MONITORING (EEM)

WHAT WAS PROPOSED

In 2019, ECCC proposed that all mills submit study designs for biological monitoring and investigation studies.

WHAT IS BEING UPDATED

ECCC is proposing that mills consider and include information and data provided by Indigenous people when developing the design of required studies. The intent of this update is to provide a mechanism to seek Indigenous communities' perspective on the site-specific elements of EEM study design to help inform how and where these studies should be conducted to best assess potential effects of mills' effluent on fish, fish habitat, and use of fish by humans.

Each mill would:

- inform and invite Indigenous peoples that use the waters in which the mill discharges effluents, to share any information or data they feel is relevant;
- describe how the information provided was taken into account in the design of any required studies;
- continue to take into account the information and data shared by Indigenous peoples in the design of any subsequent studies.

ECCC took into consideration:

- comments indicating that some Indigenous groups would like to be directly involved in local EEM studies.

4.4 WATER QUALITY MONITORING & EFFLUENT CHARACTERIZATION

WHAT WAS PROPOSED

In 2019, ECCC proposed that mills characterize their final effluent and conduct water quality monitoring studies. The list of substances to be measured as part of these two requirements was not specified.

WHAT IS BEING UPDATED

ECCC is proposing to require the following list of substances be measured through effluent characterization and water quality monitoring.

ECCC took into consideration:

- substances that are important to assess performance of pulp and paper effluent treatment; and
- substances used or generated by mills known to potentially impact fish and fish habitat.

SUBSTANCES FOR EFFLUENT CHARACTERIZATION AND WATER QUALITY MONITORING		
Substance/Parameter	Effluent Characterization	Water Quality
Deleterious Substances		Yes, TSS, COD, P, N
Conductivity	Yes	Yes, freshwater/estuarine
Dissolved Oxygen (DO)		Yes
Hardness	Yes	Yes, freshwater/estuarine
Alkalinity	Yes	Yes, freshwater/estuarine
Temperature	Yes	Yes
Water depth		Yes
pH	Yes	Yes, freshwater/estuarine
Salinity		Yes, estuarine/marine
Turbidity		Yes
Total Organic Carbon (TOC)	Yes	Yes
Total Dissolved Solids (TDS)	Yes	Yes
Adsorbable Organic Halides ¹ (AOX)	Yes	Yes
Hydrocarbons C10-C50	Yes	Yes
Total Phenols	Yes	Yes
Triarylmethane ²	Yes	Yes
Aluminum	Yes	Yes
Arsenic	Yes	Yes
Boron	Yes	Yes
Cadmium	Yes	Yes
Chromium	Yes	Yes
Cobalt	Yes	Yes
Copper	Yes	Yes
Iron	Yes	Yes
Lead	Yes	Yes
Manganese	Yes	Yes
Mercury ³	Yes	Yes
Nickel	Yes	Yes
Selenium	Yes	Yes
Silver	Yes	Yes
Thallium	Yes	Yes
Vanadium	Yes	Yes
Zinc	Yes	Yes

1. mills using chlorine or chlorine dioxide in their bleaching process
2. mills de-inking and/or dyeing paper – reduction to annual monitoring if 12 samples under threshold, return to regular monitoring if annual sample above threshold
3. all mills – cessation if 12 samples under threshold, return to monitoring if mill undergoes major change in process type

4.5 INVESTIGATION STUDIES AND IMPLEMENTATION OF SOLUTIONS

WHAT WAS PROPOSED

In 2019, ECCC proposed one study period of 3 years to determine the cause of environmental effects of effluent and, when applicable, to identify solutions for those effects.

In addition, ECCC proposed that mills be required to implement the solutions they identified to mitigate the environmental effect(s) of their effluent, within a 3-year timeframe. After 3 years, studies to re-assess effects would be required.

WHAT IS BEING CLARIFIED

ECCC is providing more details to clarify the proposed investigation studies and implementation of solutions requirements.

Timelines

At the registration of the modernized PPER, biological monitoring study requirements would be paused for all mills. All other EEM requirements would come into force at the registration of the regulations. The following requirements would restart when the new limits come into force:

1. 3 years after registration or;
2. Up to 5 years after registration for mills with a transitional authorization¹.

After the new limits are in force, the first biological monitoring study report would be due in 3 years.

Results of two consecutive biological monitoring studies would determine the overall mill effect designation, which set the type and timing of subsequent studies. The first biological monitoring study results after the registration of the modernized PPER would be used in conjunction with the previous biological monitoring study results to reassess the overall mill effect designation.

The following table indicates the type and timing of the subsequent studies.

TYPE OF STUDY AND TIMELINES FOR STUDY REPORT SUBMISSION		
Overall Mill Effect Designation	Next Study	Timelines for study report submission
Confirmed no effect	Biological Monitoring Study	6 years after previous report was due
Unconfirmed ² effect	Biological Monitoring Study	3 years after previous report was due
Confirmed effect less than CES	Biological Monitoring Study	3 years after previous report was due
Confirmed effect equal or greater than CES, or without CES	Investigation Study	3 years after previous report was due

1. See the Coming into force section for more details.
2. If two subsequent study cycles show different effect results, it receives the designation of having an 'unconfirmed effect'. For more information see: [Designation a Mills Overall Effect](#).

Investigation Studies

Investigation studies would include a study to identify the causes of the effects and, where applicable, an identification of possible solutions to mitigate the effects. If there are multiple effects, mills would be required to identify causes for each effect and, where applicable, solutions for each effect.

Implementation of Solutions

Starting when the investigation study reports are due, mills would be subject to the implementation of solution(s) requirements:

1. Three months after investigation study reports are due, the *Declaration of Solution Implementation Plan* submission, a short document with a proposed ECCC template, would be required. It would include:
 - A description of the proposed solutions
 - The timeframe for implementing the solutions
 - What effects are being addressed by the solutions
 - How the solutions would help mitigate the effects
2. The *Declaration That Solutions Have Been Implemented* would be submitted once the solution is fully implemented. It would include:
 - A description of the implemented solutions
 - The date when the solution was fully implemented

If the solution(s) has not been fully implemented within 3 years, an annual interim progress report would be required until the solution is fully implemented and the final declaration has been submitted. It would include:

- An update on the timeframe for implementing the solutions
- If applicable, any change to the description of the proposed solutions
- If applicable, any change on how the solutions would help mitigate the causes of the effects

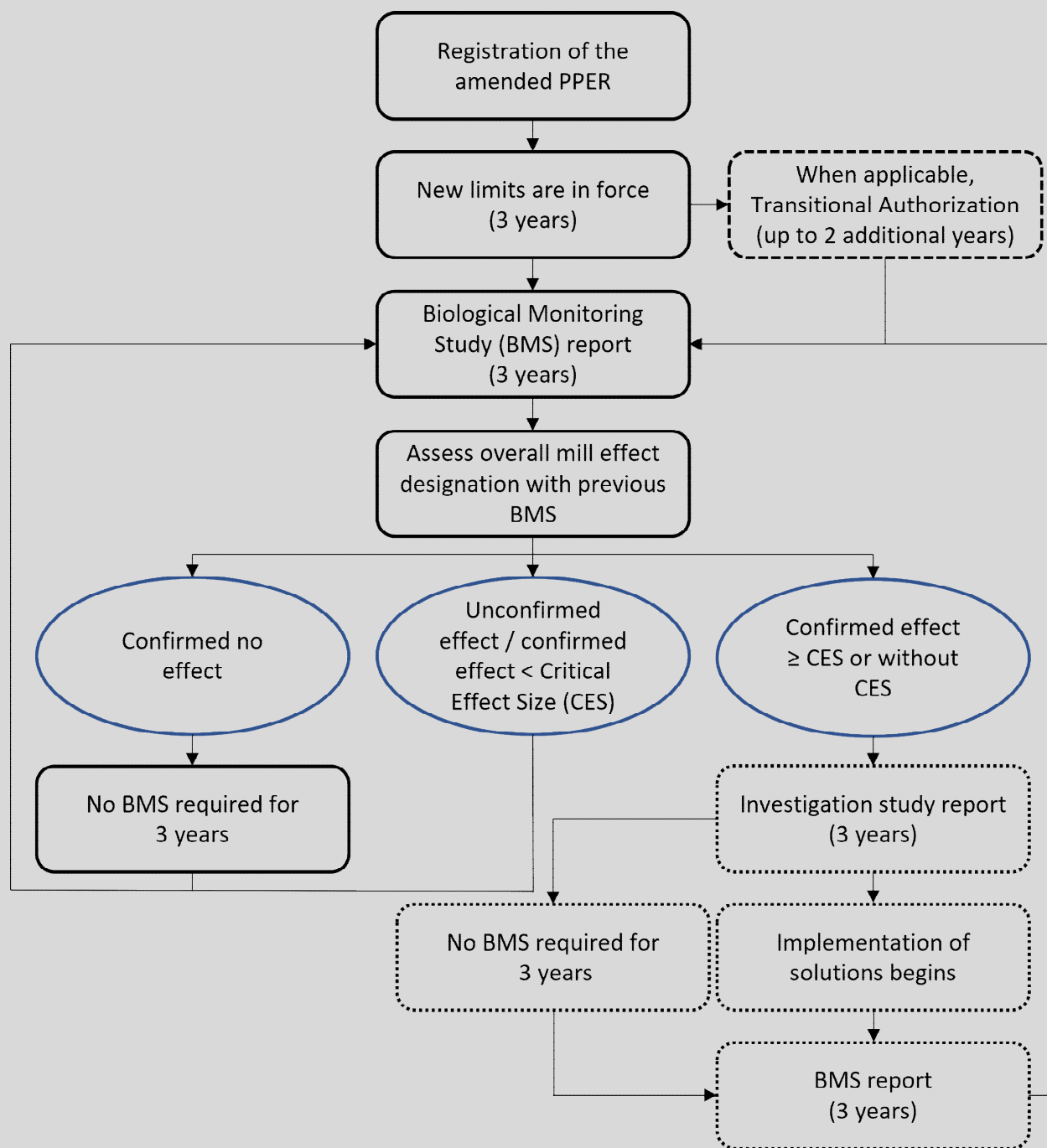
Reassessment of Effects

The biological monitoring studies assessing effects would resume 3 years after the investigation study reports are due, regardless of the completion of the implementation of solutions. The new biological monitoring study results would be used in conjunction with the previous biological monitoring study results to reassess the overall mill effect designation.

ECCC took into consideration:

- Comments received requesting more clarification on proposed investigation studies and implementation of solutions.

Type of required studies and associated timelines for report submission



4.6 REQUIREMENTS FOR OFF-SITE LANDFILLS

WHAT WAS PROPOSED

In 2019, ECCC proposed to include specific concentration-based limits for BOD, SS and COD in effluents (leachate) generated by all off-site landfills. ECCC also proposed to expand the scope of the PPER to regulate off-site landfills containing mill residues owned or operated by a third party whose purpose is to collect mill residues.

WHAT IS BEING UPDATED

ECCC is proposing the following:

- mill residue would be defined as: bark, wood residue, pulp, paper and paperboard discards, ash from a combustion facility, sludge from process water treatment, de-inking sludge, lime sludge, green liquor dregs, residues from lime slaking and any other residue from the pulp or paper product manufacturing process that is not a hazardous material;
- off-site landfills would be subject to the PPER for one year after the landfill stops accepting mill residue and then would be subject to the *Fisheries Act*;
- the monitoring frequency for off-site landfills is presented in section 5.1 below;
- the proposed off-site landfill requirements would apply to all off-site landfills discharging directly to the environment that treat only pulp and paper mill residue (not landfills accepting waste from multiple sources);
- remove the proposed requirements for a daily and weekly limit; and
- remove the proposed limits for temperature, total phosphorus, and total nitrogen.

The proposed effluent limits for off-site landfills are now to include only the following:

PROPOSED EFFLUENT LIMITS FOR OFF-SITE LANDFILLS (*monthly maximum average)				
BOD* (mg/L)	SS* (mg/L)	COD* (mg/L)	pH Range	Acute lethality
30	30	180	6.0 to 9.5	non-acutely lethal

ECCC took into consideration:

- comments questioning the need for nutrient limits in off-site landfills;
- comments on the relevance of a temperature limit, since leachate temperature is a function of the ambient temperature;
- comments to clarify what constitutes ‘mill residue’;
- the intermittent nature of the discharge of leachate from pulp and paper mill off-site landfills; and
- the need for information on leachate characteristics to assess potential environmental risks.

4.7 CLARIFICATION FOR UNAUTHORIZED DEPOSITS

WHAT WAS PROPOSED

In 2019, ECCC proposed to use the term “unauthorized deposits of deleterious substances” instead of “deposits out of the normal course of events”.

ECCC also proposed to clarify sampling requirements for evaluating the effect of an unauthorized deposit, requiring that the sampling be done at the place where the unauthorized deposit occurred.

WHAT IS BEING UPDATED

ECCC is proposing to:

- clarify that the sampling occurs at the same place as the unauthorized deposit, regardless of whether it consists of an outfall structure or any other place where the deposit can reach water frequented by fish; and
- add a requirement to subject the sample to a chemical oxygen demand (COD) test.

ECCC took into consideration:

- comments requesting clarity on the requirements proposed in 2019.

4.8 SITE-SPECIFIC REQUIREMENTS FOR PORT ALBERNI MILL

WHAT WAS PROPOSED

In 2019, ECCC proposed to lower and align the site-specific effluent loading limits for the Port Alberni mill with the limits proposed for all operating mills, and to repeal the specific requirement to measure dissolved oxygen.

WHAT IS BEING UPDATED

ECCC proposes to remove all site-specific requirements for the Port Alberni mill. The mill would be subject to the general limits.

ECCC took into consideration:

- comments requesting the removal of site-specific requirements for the Port Alberni mill;
- the current site-specific limits for the mill would align with what is proposed for mechanical mills, making the current site-specific limits obsolete; and
- the current dissolved oxygen program would be repealed and replaced with water quality monitoring requirements that would apply to all mills.

4.9 AUTHORIZATION TO TREAT OTHER SOURCES

WHAT WAS PROPOSED

In 2019, ECCC proposed to remove the authorization for a mill to exceed the maximum quantities of deleterious substances when it treats wastewater from other sources in addition to its own effluent.

WHAT IS BEING UPDATED

ECCC proposes to keep this authorization with the following conditions:

- remove the requirement that a mill must be opened before 1971, allowing all mills to apply;
- the authorization would only apply for treating municipal wastewater sources;
- an allocation for COD would be added; and
- mills would no longer be required to take all applicable preventative measures at the production stage to reduce BOD, SS and lethality.

PROPOSED SUPPLEMENTARY ALLOCATIONS FOR TREATING OTHER MUNICIPAL WASTEWATER SOURCES		
Substance	Current (kg)	Proposed (kg)
BOD (daily)	$0.375 \times B_o$	$0.250 \times B_o$
BOD (monthly)	$0.225 \times B_o \times D$	$0.150 \times B_o \times D$
SS (daily)	$0.375 \times S_o$	$0.250 \times S_o$
SS (monthly)	$0.225 \times S_o \times D$	$0.150 \times S_o \times D$
COD (daily)	-	$0.8 \times C_o$
COD (monthly)	-	$0.6 \times C_o \times D$

- B_o the average daily BOD in the other sources wastewater before it is treated by the mill
- S_o the average daily SS in the other sources wastewater before it is treated by the mill
- C_o the average daily COD in the other sources wastewater before it is treated by the mill
- D is the number of days in the month
- B_o , S_o and C_o are calculated using loading data from the previous calendar year and expressed in kilograms

ECCC took into consideration:

- comments that some mills treat other sources such as municipal wastewater; and
- considering the newly proposed maximum effluent loading limits, this additional allocation may now be necessary to accommodate facilities treating municipal wastewater.

5.0 UPDATES TO COMPLIANCE & ADMINISTRATIVE REQUIREMENTS

5.1 EFFLUENT MONITORING & TESTING SCHEDULE

WHAT WAS PROPOSED

In 2019, ECCC proposed a schedule for monitoring existing and new parameters, and tests for mill effluent.

WHAT IS BEING UPDATED

ECCC proposes the following updates to the effluent monitoring and testing schedule:

- Increase the threshold for reducing COD monitoring from 20 mg/L to 100 mg/L.
- Increase the threshold for reducing *Daphnia magna* testing from 20 mg/L of COD to 100 mg/L and add that, in the previous quarter, the effluent did not fail the *Daphnia magna* test.
- The monitoring frequency for off-site landfills would be as follows:

PROPOSED MONITORING REQUIREMENTS FOR OFF-SITE LANDFILLS	
Parameter/test	Frequency
BOD	Weekly
SS	Weekly
COD	Weekly
pH	Weekly
Effluent Volume	Weekly
Total Nitrogen	Weekly
Total Phosphorus	Weekly
Acute Lethality of Rainbow Trout	Quarterly

ECCC took into consideration:

- comments that the proposed COD criteria for reduced monitoring was not achievable for the average facility;
- alignment of the COD reduced monitoring frequency to the monitoring frequency of BOD and SS;
- clarifying the monitoring requirements for off-site landfills; and
- ensuring continued protection of Canadian fish and fish habitat from acutely lethal pulp & paper effluent.

5.2 COMING INTO FORCE

WHAT WAS PROPOSED

In 2019, ECCC had not proposed any schedule for when the amendments would come into force for facilities.

WHAT IS BEING UPDATED

ECCC proposes that all amendments come into force on the day of registration of the revised PPER, except for the following items:

Amended Limits

- The new amended limits would come into force three years following the registration of the revised PPER.
- Eligible mills that cannot meet the new limits for one or more regulated parameters would have the option to apply for a transitional authorization within 12 months of registration of the revised PPER.
- Mills would be eligible if the average loading of the previous three years before the registration of the revised PPER exceed the new limits and if they justify that more than three years is required to complete the necessary changes.
- The application for a transitional authorization would require the following information:
 - Data of the previous three years to demonstrate eligibility for each parameter.
 - Detailed project plans that would be used to meet the new limits, including specific timelines.
- The transitional authorization would give an additional two years to meet the new limits for one or more regulated parameters. Mills would have to submit annual progress reports to demonstrate their progress to meet the new limits.

Environmental Effects Monitoring (EEM)

- The first EEM biological monitoring study report would be due three years after the new limits come into force (i.e. by the sixth year after registration of the revised PPER).
- For mills with a transitional authorization, the first EEM biological monitoring study report would be due three years after the expiry of their transitional authorization.

ECCC took into consideration:

- flexibility necessary for the planning and costing that may be required by facilities to come into compliance with newly proposed regulatory requirements;
- the level of improvements required to come into compliance with the proposed regulation can vary between facilities; and
- minimizing the delay for the implementation of new proposals to improve environmental protection.

5.3 DATA REPORTING FREQUENCY

WHAT WAS PROPOSED

In 2019, ECCC proposed that reporting of monitoring results and production information be submitted to the Minister of the Environment on a quarterly basis within 45 days after the end of the quarter.

WHAT IS BEING UPDATED

ECCC is proposing to maintain the current reporting frequency of monitoring results and production information, with monthly submissions required to the Minister of the Environment.

ECCC took into consideration:

- comments that monthly reporting would result in less administrative burden for mills, and align with provincial regulations.

6.0 NEXT STEPS

WHAT WAS PROPOSED

In 2019, ECCC proposed the following key target dates for regulatory development:

Interested parties are welcome to provide feedback on the Proposed Approach for Regulating Pulp and Paper Mills Effluent (refer to the additional information below about providing feedback).	
Target 2020	Proposed pulp and paper effluent regulations under the <i>Fisheries Act</i> published in <i>Canada Gazette</i> Part I for a 60-day comment period
Target 2021	Publication of the final version of the PPER in the <i>Canada Gazette</i> Part II

WHAT IS BEING UPDATED

ECCC proposes the following update for key target dates regarding this proposal:

Interested parties are welcome to provide feedback on the Proposed Approach for Regulating Pulp and Paper Mills Effluent (refer to the additional information below about providing feedback).	
Target 2024	Proposed pulp and paper effluent regulations under the <i>Fisheries Act</i> published in <i>Canada Gazette</i> Part I for a 60-day comment period
Target 2026	Publication of the final version of the PPER in the <i>Canada Gazette</i> Part II

7.0 PROVIDING FEEDBACK

We would like to invite all interested parties to provide comments and feedback on the modernization of the *Pulp and Paper Effluent Regulations*. Please send your feedback in writing to:

Bernard Lupien, Manager, EEM and Forest Products
Forest Products and Fisheries Act Division – PPER Modernization
351, Boulevard Saint-Joseph - 19th Floor,
Gatineau, Quebec K1A 0H3
e-mail: refpppper@ec.gc.ca

ANNEX A – SUMMARY OF PROPOSALS

SUMMARY OF PROPOSALS		
Subject	2019 Proposal	2024 Proposal
“Mill” definition	<p>“Mill” means a facility that is used or designed to produce:</p> <ul style="list-style-type: none"> (a) pulp from wood or from other plant material or paper products; or (b) any product made directly from pulp or a pulping process <p><i>(section 2.0 of 2019 document)</i></p>	No change from 2019 proposal
“Finished product” definition	<p>“Finished Product” means pulp, paper, cellulose-based and sugar-based products that has completed the production process at a mill</p> <p><i>(section 2.0 of 2019 document)</i></p>	<p>Removal of sugar-based products from the definition: “Finished product” means pulp, paper and cellulose-based product that has completed the production process at a mill</p> <p><i>(section 2.1 of this document)</i></p>
Mill categories	<p>Introduction of 3 process categories:</p> <ul style="list-style-type: none"> • Chemical mills • Mechanical mills • Paper recycling and papermaking mills <p><i>(section 3.0 of 2019 document)</i></p>	No change from 2019 proposal
Intensity factors for BOD, SS and COD for chemical mills	<ul style="list-style-type: none"> • Daily BOD: 4.25 kg/t • Monthly BOD: 2.6 kg/t • Daily SS: 6.25 kg/t • Monthly SS: 3.75 kg/t • Daily COD: 75 kg/t • Monthly COD: 45 kg/t <p><i>(section 3.0 of 2019 document)</i></p>	<ul style="list-style-type: none"> • Daily BOD: 4.25 kg/t • Monthly BOD: 2.6 kg/t • Daily SS: 7.65 kg/t • Monthly SS: 4.6 kg/t • Daily COD: 80 kg/t • Monthly COD: 48 kg/t <p><i>(section 3.1 of this document)</i></p>

SUMMARY OF PROPOSALS		
Subject	2019 Proposal	2024 Proposal
Intensity factors for BOD, SS and COD for mechanical mills	<ul style="list-style-type: none"> • Daily BOD: 1.25 kg/t • Monthly BOD: 0.75 kg/t • Daily SS: 2.5 kg/t • Monthly SS: 1.5 kg/t • Daily COD: 50 kg/t • Monthly COD: 30 kg/t <p><i>(section 3.0 of 2019 document)</i></p>	<ul style="list-style-type: none"> • Daily BOD: 1.8 kg/t • Monthly BOD: 1.1 kg/t • Daily SS: 3.4 kg/t • Monthly SS: 2.0 kg/t • Daily COD: 50 kg/t • Monthly COD: 30 kg/t <p><i>(section 3.1 of this document)</i></p>
Intensity factors for BOD, SS and COD for paper recycling / papermaking mills	<ul style="list-style-type: none"> • Daily BOD: 1.25 kg/t • Monthly BOD: 0.75 kg/t • Daily SS: 2.5 kg/t • Monthly SS: 1.5 kg/t • Daily COD: 12.5 kg/t • Monthly COD: 7.5 kg/t <p><i>(section 3.0 of 2019 document)</i></p>	<p>No change from 2019 proposal</p> <p><i>(section 3.1 of this document)</i></p>
Multiple facilities discharging into one wastewater treatment system	<p>Formulas were provided to calculate the maximum loadings in the case of multiple facilities of different process categories discharging into one wastewater treatment system</p> <p><i>(section 3.0 of 2019 document)</i></p>	<p>No change from 2019 proposal</p>
Authorization for high-brightness mechanical mills	<p>Not included in 2019 proposal</p>	<p>Authorization for mechanical mills producing high-brightness pulp (>65 % ISO) meeting certain criteria for higher intensity factors up to:</p> <ul style="list-style-type: none"> • Daily SS: 6.1 kg/t • Monthly SS: 3.6 kg/t • Daily BOD: 5.4 kg/t • Monthly BOD: 3.3 kg/t <p><i>(section 3.2 of this document)</i></p>

SUMMARY OF PROPOSALS		
Subject	2019 Proposal	2024 Proposal
Biotransforming mills	Introduction of an adjustment to the RPR available for mills producing bioproducts not defined as a “finished product” <i>(section 3.0 of 2019 document)</i>	Instead of the interim RPR, biotransforming mills could apply for a supplementary discharge allocation for BOD, SS and COD under certain conditions <i>(section 3.3 of this document)</i>
Concentration-based limits for phosphorus	<ul style="list-style-type: none"> Weekly max. average: 2.0 mg/L Monthly max. average: 1.5 mg/L <i>(section 3.0 of 2019 document)</i>	<ul style="list-style-type: none"> Weekly max. average: 2.5 mg/L Monthly max. average: 2.0 mg/L <i>(section 3.4 of this document)</i>
Concentration-based limits for nitrogen	<ul style="list-style-type: none"> Weekly max. average: 20 mg/L Monthly max. average: 15 mg/L <i>(section 3.0 of 2019 document)</i>	No change from 2019 proposal <i>(section 3.4 of this document)</i>
Temperature limit	<ul style="list-style-type: none"> Monthly max. average: 35 °C Max. daily: 40 °C <i>(section 3.0 of 2019 document)</i>	<ul style="list-style-type: none"> Monthly max. average: no limit Max. daily: 45 °C <i>(section 3.5 of this document)</i>
pH limit	<ul style="list-style-type: none"> Freshwater: 6.0 to 9.5 Marine/estuary: 6.5 to 9.2 <i>(section 3.0 of 2019 document)</i>	6.0 to 9.5 for all receiving environments <i>(section 3.6 of this document)</i>
New provisions for closing and closed mills	<p>Two phases for closing a mill and associated requirements:</p> <ul style="list-style-type: none"> Phase 1: Preparation for closure, which includes requirements for the mill to notify ECCC when it intends to close, and provide a closure plan Phase 2: Closure of a mill, during which the conditions would remain the same as an operating mill, except for the limits, and after one year, the mill would no longer be subject to the PPER <i>(section 4.0 of 2019 document)</i>	<p>Clarifications are provided on Phase 1:</p> <ul style="list-style-type: none"> Following the public announcement of closure, a mill would be given a period of time to notify ECCC and to prepare and submit a closure plan ECCC would provide a list of eligible 'key pieces of equipment' for removal to inform the mill closure plan <i>(section 4.1 of this document)</i>

SUMMARY OF PROPOSALS		
Subject	2019 Proposal	2024 Proposal
New provisions for idled mills	<ul style="list-style-type: none"> To enter idled mill status, a mill would notify ECCC when it has stopped or is expected to stop production for 100 consecutive days or more All conditions would remain the same as an operating mill, except for certain limits <p><i>(section 4.0 of 2019 document)</i></p>	<p>To enter idled mill status, a mill would notify ECCC when it has stopped or is expected to stop production for 6 months or more</p> <p><i>(section 4.2 of this document)</i></p>
Effluent limits for idled and closed mills	<ul style="list-style-type: none"> Daily max. BOD: 50 mg/L Monthly max. average BOD: 30 mg/L Daily max. SS: 50 mg/L Monthly max. average SS: 30 mg/L Daily max. COD: 300 mg/L Monthly max. average COD: 180 mg/L Other limits are the same as operating mills <p><i>(section 4.0 of 2019 document)</i></p>	No change from 2019 proposal
Incorporation of critical effect size (CES) in EEM requirements	<ul style="list-style-type: none"> Introduction of CES for all effect indicators except one An investigation of cause and solution study would be required only if an effect indicator \geq CES, or if there is no CES <p><i>(section 4.0 of 2019 document)</i></p>	No change from 2019 proposal
Study designs for EEM	<ul style="list-style-type: none"> All mills would be required to submit study designs for biological monitoring and investigation studies Reduced requirements for mills with rapid effluent dilution <p><i>(section 4.0 of 2019 document)</i></p>	<p>New requirement for mills to consider Indigenous perspectives in EEM study designs</p> <p><i>(section 4.3 of this document)</i></p>

SUMMARY OF PROPOSALS		
Subject	2019 Proposal	2024 Proposal
Water quality monitoring and effluent characterization	<ul style="list-style-type: none"> New EEM requirement to characterize mill effluent by analyzing a list of substances and parameters (list under development) New EEM requirement to conduct water quality monitoring studies in the exposure area of each effluent deposit and related reference areas by analyzing a list of substances and parameters (list under development) <p><i>(section 4.0 of 2019 document)</i></p>	<p>List of substances/parameters to be analyzed is provided</p> <p><i>(section 4.4 of this document)</i></p>
Investigation studies and implementation of solutions	<ul style="list-style-type: none"> Mills would have one study period of 3 years to determine the cause of effects of effluent and to identify solutions for those effects Mills would be required to implement identified solutions within a 3-year timeframe <p><i>(section 4.0 of 2019 document)</i></p>	<p>New clarifications are provided, including:</p> <ul style="list-style-type: none"> Mills could take more than 3 years to implement solutions, and in that case, annual interim progress reports would be required Biological monitoring studies would resume 3 years after investigation study reports, regardless of the completion of the implementation of solutions <p>Additional details on the steps and timelines for investigation studies and solution requirements are provided</p> <p><i>(section 4.5 of this document)</i></p>

SUMMARY OF PROPOSALS		
Subject	2019 Proposal	2024 Proposal
Requirements for off-site landfills	<ul style="list-style-type: none"> • PPER would apply to off-site landfills owned or operated by a third-party whose purpose is to collect mill residue • Daily max. BOD: 50 mg/L • Monthly max. average BOD: 30 mg/L • Daily max. SS: 50 mg/L • Monthly max. average SS: 30 mg/L • Daily max. COD: 300 mg/L • Monthly max. average COD: 180 mg/L • pH range for freshwater: 6.0 to 9.5 • pH range for marine/estuary: 6.5 to 9.2 • Weekly max. average phosphorus: 2 mg/L • Monthly max. average phosphorus: 1.5 mg/L • Weekly max. average nitrogen: 20 mg/L • Monthly max. average nitrogen: 15 mg/L • Daily max. temperature: 40°C • Monthly max. average temperature: 35°C <p>(section 4.0 of 2019 document)</p>	<ul style="list-style-type: none"> • New definition for mill residue and clarification that requirements apply to off-site landfills that treat only pulp and paper mill residue • No daily limit for BOD • Monthly max. average BOD: 30 mg/L • No daily limit for SS • Monthly max. average SS: 30 mg/L • No daily limit for COD • Monthly max. average COD: 180 mg/L • pH range of 6.0 to 9.5 for all receiving environments • No limits for phosphorus • No limits for nitrogen • No limits for temperature <p>(section 4.6 of this document)</p>
Clarification for unauthorized deposits	<p>The sampling occurs at the same place as the unauthorized deposit</p> <p>(section 4.0 of 2019 document)</p>	<ul style="list-style-type: none"> • The sampling occurs at the same place as the unauthorized deposit, regardless of whether it consists of an outfall structure or any other place where the deposit can reach water frequented by fish • Sample subjected to a COD test <p>(section 4.7 of this document)</p>
Site-specific requirements for Port Alberni mill	<ul style="list-style-type: none"> • Limits lowered and aligned with general limits • Dissolved oxygen program repealed <p>(section 4.0 of 2019 document)</p>	<ul style="list-style-type: none"> • All site-specific requirements repealed • Mill subject to general limits <p>(section 4.8 of this document)</p>

SUMMARY OF PROPOSALS		
Subject	2019 Proposal	2024 Proposal
Authorization to treat other sources	Removal of the authorization for a mill to exceed the maximum quantities of deleterious substances when it treats other sources of effluent in addition to its own <i>(section 4.0 of 2019 document)</i>	The authorization to treat other sources will be maintained with new conditions <i>(section 4.9 of this document)</i>
Authorization for dissolving grade sulphite pulp	Removal of the authorization for dissolving grade sulphite pulp <i>(section 4.0 of 2019 document)</i>	No change from 2019 proposal
Authorization to combine effluents	<ul style="list-style-type: none"> • New requirement to re-apply for authorization every 5 years • Mills to reduce COD before the effluent is treated and demonstrate that treatment removes at least 60 % of COD <i>(section 4.0 of 2019 document)</i>	No change from 2019 proposal
Non-acute lethality requirements	New acceptable method for pH stabilization (RM 59) to be used in conjunction with the existing test method for acute lethality (RM 13) <i>(section 5.0 of 2019 document)</i>	No change from 2019 proposal

SUMMARY OF PROPOSALS		
Subject	2019 Proposal	2024 Proposal
Effluent monitoring and testing schedule	<p>New schedule for monitoring existing and new parameters, as well as thresholds for reduced and increased testing frequency, including:</p> <ul style="list-style-type: none"> • Threshold to reduce COD monitoring included that COD was less than 20 mg/L in the previous quarter • Threshold to reduce <i>Daphnia magna</i> testing included that COD was less than 20 mg/L in the previous quarter <p>(section 5.0 of 2019 document)</p>	<p>Proposed effluent monitoring and testing schedule is maintained, with the following updates:</p> <ul style="list-style-type: none"> • Increase of the threshold for reducing COD monitoring from 20 mg/L to 100 mg/L in the previous quarter • Increase of the threshold for reducing <i>Daphnia magna</i> testing from 20 mg/L of COD to 100 mg/L in the previous quarter • New requirement that effluent did not fail the <i>Daphnia magna</i> test in the previous quarter for reduced <i>Daphnia magna</i> monitoring • New monitoring frequency for off-site landfills <p>(section 5.1 of this document)</p>
Coming into force	Not included in 2019 proposal	<p>Following publication of the revised PPER:</p> <ul style="list-style-type: none"> • Amended limits would come into force in 3 years • Mills could obtain a transitional authorization for an additional 2 years to meet the limits • EEM biological monitoring studies would be due 3 years after the limits, or after the end of a transitional authorization <p>(section 5.2 of this document)</p>
Data reporting frequency	<p>Reporting of monitoring results and production information would be submitted on a quarterly basis</p> <p>(section 5.0 of 2019 document)</p>	<p>The current reporting frequency of monitoring results and production on a monthly basis would be maintained</p> <p>(section 5.3 of this document)</p>
Public availability of information	<p>Information related to deposit of deleterious substances and EEM study results would be made publicly available and accessible</p> <p>(section 5.0 of 2019 document)</p>	No change from 2019 proposal