

IN THE MATTER OF Chapter 1 of the Acts of
Nova Scotia 1994-95, the *Environment Act*

- and -

IN THE MATTER OF an Order issued pursuant
to Section 125 of said Act to **Northern Pulp
Nova Scotia Corporation** at or near 260
Granton Abercrombie Road, Abercrombie Point,
Abercrombie, Pictou County, Nova Scotia.

MINISTERIAL ORDER

I. **WHEREAS Northern Pulp Nova Scotia Corporation**, hereafter called
“NPNSC”, owns, occupies, operates or is responsible for the operation of a plant,
structure, facility, undertaking or thing, to wit: a bleached kraft pulp mill which is located
at or near 260 Granton Abercrombie Road, Abercrombie Point, Abercrombie, Pictou
County, Nova Scotia, hereafter called the “Site”, and which is currently operated under
the terms and conditions of Approval 2011-076657-A01;

II. **AND WHEREAS** Approval #2011-076657-A01 will expire on January 30th,
2020;

III. **AND WHEREAS** the Minister of Environment believes on reasonable and
probable grounds that the persons named in this Ministerial Order have contravened or
will contravene the:

Environment Act

s. 50(2) No person shall commence or continue any activity designated by the
regulations as requiring an approval, unless that person holds the appropriate class of
approval required for that activity;

IV. **AND WHEREAS** the Minister is of the opinion that it is in the public
interest to do all things and take all steps necessary to comply with the *Environment Act*
or to repair any injury or damage, or to control, eliminate or manage an adverse effect;

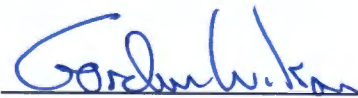
IT IS HEREBY ORDERED:

That upon service of this Ministerial Order and pursuant to subsection 125(1) of the *Environment Act*, the persons named in this Ministerial Order shall, at their own cost, comply with the terms and conditions, including compliance times, set forth in Schedule "A" attached to and forming part of this Ministerial Order.

AND TAKE NOTICE if the persons to whom the Ministerial Order is directed fail to comply with the Ministerial Order, or any part thereof, the Minister, pursuant to Section 132(2) of the *Environment Act*, may take whatever action the Minister considers necessary to carry out the terms of the Order and may recover any reasonable costs, expenses and charges incurred by the Minister pursuant to Section 132 of the *Environment Act*.

AND FURTHER TAKE NOTICE that the appeal provisions respecting the issuance of a Ministerial Order are more fully outlined in Section 138 of the *Environment Act*, including a 30-day time period from the date of the issuance of the Ministerial Order to file an appeal.

ISSUED at Halifax, in the Halifax Regional Municipality, Province of Nova Scotia,
this 29 day of January 2020



The Honourable Gordon Wilson
Minister of Environment

SCHEDULE "A"
TERMS AND CONDITIONS
Northern Pulp Nova Scotia Corporation

1. NPNSC shall operate the Facility in accordance with the Environment Act S.N.S. 1994-1995, c.1 and its Regulations, as amended from time to time.
2. Unless otherwise notified in writing by the Minister, the contact person at the Department to receive any correspondence relating to this Order is:

District Manager Marc Theriault
Nova Scotia Environment
20 Pumphouse Road
R. R. #3
Granton, Nova Scotia B2H 5C6

Definitions

3. All definitions in Approval #2011-076657-A01, whether the approval is active or expired, are applicable in this Order.
4. Bulk Storage, for the purpose of this Order, means the storage of liquids, such as petroleum products and chemicals in tanks, as distinguished from drum or packaged storage.
5. Decommissioning, for the purpose of this Order, means to make inoperative, empty, purge, decontaminate and secure to ensure no adverse impact to the environment may occur.
6. Hibernation, for the purpose of this Order, means to prepare for an extended period of inactivity or non-use.
7. Pulping Liquor, for the purpose of this Order, means black liquor, green liquor and white liquor.

Facility Production and Maintenance

8. NPNSC shall cease all production of pulp prior to January 31st, 2020.
9. On or before January 31st, 2020, NPNSC shall provide confirmation from a 3rd party professional engineer, licensed to practice in the Province of Nova Scotia, that a piece of equipment has been removed from the Mill that would render the Facility incapable of producing pulp as designed.
10. NPNSC shall maintain the infrastructure of the Facility to ensure systems which have the potential to have an impact on the environment are not compromised by the cessation of pulp production.
11. NPNSC shall provide, by the end of each calendar month, a comprehensive list of all projects that have the potential to impact the environment, that were performed during that calendar month.

Water Use

12. NPNSC shall provide daily water use data to the Department on a monthly basis within 10 days of the end of the calendar month.

Wastewater

13. NPNSC shall cease discharge of all wastewater to the Boat Harbour Effluent Treatment Facility (BHETF) by no later than April 30th, 2020.
14. The BHETF is classified as a **Class III Wastewater Treatment System**. The day to day operation of the effluent treatment system must be supervised directly by a certified operator, certified to the same level of qualification as the classification of the wastewater treatment system.
15. NPNSC is restricted to a maximum of 35,000 cubic metres per day of wastewater flow at Point C.
16. NPNSC shall submit to the Department, for review and approval, by no later than February 15, 2020, a plan for measurement of flow at Point A.
17. NPNSC shall install or confirm wastewater flow measuring is in place at Point A by no later than February 29, 2020.

18. NPNSC shall record daily flow measurements at Point C, and Point A after February 29th, 2020, and report to the Department on a monthly basis within 10 days of the end of the calendar month.
19. NPNSC shall continue to treat the pulp and paper effluent, which was generated prior to January 31st, 2020, within the Boat Harbour Effluent Treatment Facility (BHETF) on and after January 31st, 2020, sufficiently to meet the limits outlined in Table 1 of Appendix A of this Order.
20. NPNSC shall monitor effluent at Point C at the frequencies and for the parameters listed in Table 1 of Appendix A of this Order until February 29th, 2020. Results of this monitoring shall be submitted on a monthly basis within 20 days of the end of each calendar month.
21. On March 1, 2020, effluent discharged at Point D must comply with the criteria outlined in Table 2 of Appendix A of this order.
22. NPNSC shall monitor the effluent at the locations, frequencies and for the parameters listed in Table 2 of Appendix A until May 24th, 2020, unless otherwise directed by the Department.
23. NPNSC shall submit the results of the monitoring required in Condition 22 of this Order on a monthly basis within 20 days of the end of each calendar month.
24. As of January 31st, 2020, NPNSC is strictly prohibited from discharging any domestic sewage from the office buildings or any other part of the Facility (with the exception of showers and handwashing required for Occupational Health and Safety), any process water, dangerous good or waste dangerous good to the BHETF, including but not limited to black liquor, white liquor and/or green liquor, notwithstanding Condition 32 of this Order.
25. NPNSC shall ensure COD concentrations in the wastewater discharged to the BHETF, measured at the Total Mill Effluent Building (TMEB), do not exceed 190 mg/L.
26. NPNSC shall retain the services of a professional engineer, licensed to practice in the Province of Nova Scotia, to develop a wastewater management/treatment plan. This plan shall be submitted to the Department by no later than February 29, 2020 for review and approval. This plan shall include but not be limited to a complete characterization of the wastewater (including but not limited to pH, BOD₅, COD fractionization, conductivity, general chemistry, metals, ionic balance and toxicity), that will be generated at the site after April 30, 2020, methodologies proposed to treat or dispose of the wastewater and a detail time schedule for implementation of the plan by no later than April 30, 2020 with milestones.

Effluent Pipeline and Associated Infrastructure

27. NPNSC shall retain the services of a qualified 3rd party to develop a plan to inspect the status and condition of the pipeline prior to decommissioning. The plan for this inspection shall be provided to the Department for review and approval by no later than April 1st, 2020.
28. NPNSC shall provide confirmation the pipeline has been inspected in accordance with the approved plan by no later than May 1st, 2020.
29. NPNSC shall retain the services of a qualified professional engineer to develop a decommissioning plan for the effluent pipeline as well as the open ditches, settling basins and aeration basin. This plan shall include but not be limited to all details regarding the removal and disposal of all solid wastes located within the open ditches, settling basins and aeration basin as well as removal/disposal of all effluent and/or wastewater from the pipeline, open ditch, settling basins and aeration basin and final decommissioning and sealing of the pipeline. The plan together with a detailed implementation schedule shall be submitted to the Department for review and approval by no later than August 1st, 2020.
30. NPNSC shall undertake decommissioning in accordance with the approved implementation schedule provided under Condition 29 of this Order.

Pulping Liquor

31. NPNSC is prohibited from discharging any black liquor, green liquor and/or white liquor to the BHETF, notwithstanding Condition 32 of this Order.
32. NPNSC may prepare pulping liquor storage tanks and transmission lines for hibernation after all pulping liquor has been transferred from the storage vessels for transport to an alternative facility approved for the acceptance of that material.
33. NPNSC shall retain the services of a professional engineer, licensed to practice in the Province of Nova Scotia, to develop a plan for the disposition/disposal of any liquor(s) which will not be utilized prior to January 31, 2020. This plan shall include, but not be limited to, a detailed timeline for the removal of liquor(s) from the site, the location of disposal/disposition as well as methodologies to be employed to ensure the integrity and security of the liquor storage and transfer systems and contingency planning for any potential events that could potentially cause and adverse effect. This plan shall be submitted to the Department for review and approval by no later than February 10, 2020.

Air Emissions

34. NPNSC shall generate no emissions from the Recovery Boiler, Lime Kiln, Smelt Dissolving Tank, High Level Roof Vent or any other high level roof vent at the Facility as of end of day, January 30, 2020.
35. NPNSC shall cease all operation of the Power Boiler by the end of day, April 30, 2020. Boiler ramp down activities shall begin on or before April 20th, 2020.
36. NPNSC shall ensure emissions from the Facility do not contribute to an exceedance of the maximum permissible ground level concentrations specified in Schedule A of the Air Quality Regulations.
37. For the purpose of determining compliance with Schedule A of the Air Quality Regulations, the measurement of Total reduced Sulphur (TRS) at ambient air monitoring stations shall be considered the measurement of hydrogen sulphide (H₂S).
38. NPNSC shall ensure fine particulate matter (PM_{2.5}) emissions from the Facility do not contribute to an exceedance of the maximum permissible ground level concentration outlined in Table 3 of Appendix B.
39. NPNSC shall operate ambient air monitoring stations and monitors to measure the following parameters at the following locations:

Pictou Landing (PID 65006785)

- a. 1-hour and 24-hour rolling average concentration of Total Reduced Sulphur (TRS) in parts per billion;
- b. 24 hour (calendar day) average concentration in micrograms per cubic metre (µg/m³) of total suspended particulate matter (TSP);
- c. 1-hour and 24-hour (calendar day) continuous fine particulate matter (PM_{2.5}) in micrograms per cubic metre (µg/m³); and
- d. Meteorological data: wind speed, wind direction, ambient temperature, barometric pressure and humidity.

Greenhill (PID 844233)

- e. 1-hour and 24-hour rolling average concentration of Total Reduced Sulphur (TRS) in parts per billion;
 - f. 24-hour average (calendar day) concentration in micrograms per cubic metre ($\mu\text{g}/\text{m}^3$) of total suspended particulate matter (TSP); and
 - g. Meteorological data: wind speed, wind direction and ambient temperature.
40. NPNSC shall maintain the ambient air quality stations and monitors, identified in Condition 39 of this Order, in accordance with the following documents:

Total Reduced Sulphur

- a. Addendum to Model TML87 Instruction Manual (P/N 047400000 Rev.A4) for Model TML60 Total Reduced Sulfur Analyzer with Model 501 TRS Thermal Converter, prepared by Teledyne Instruments Monitor Labs, dated REV.A2, February 8, 2007; and
- b. Calibrate/Maintain TRS Analyzers, prepared by Environmental Services, Nova Scotia Power, dated Revised: January 14, 2015

Total Suspended Particulate Matter

- c. Ambient Monitoring Procedure – Total Suspended Particulate Hi-Volume Sampler Operation, prepared by Stantec, dated January 13, 2015

Fine Particulate Matter

- d. Ambient Monitoring Procedure – Beta-Attenuation Monitor (BAM) for Suspended Particulate Matter Less than 2.5 Microns, prepared by Stantec, dated January 13, 2015

Meteorological Data

- e. Instrument Manufacturers Requirements
41. NPNSC shall demonstrate compliance with Condition 38 of this Order by utilizing data from the ambient air quality stations and monitors identified in Condition 39 of this Order.

42. The Approval Holder shall ensure the Facility is operated such that stack emissions from the Power Boiler comply with the limiting criteria set out in Table 4, Appendix B of this Order.
43. NPNSC shall not operate the Power Boiler if the Power Boiler scrubber is not in operation unless NPNSC switches the fuel supply to natural gas.
44. NPNSC shall measure or estimate annual emissions for 2019 and 2020 (for the days the mill was operated) of total particulate matter and sulphur dioxide from the following main sources of emissions:
 - a. Power Boiler;
 - b. Recovery Boiler;
 - c. Smelt Dissolving Tank; and
 - d. Lime Kiln
45. NPNSC shall submit annual emissions reports for the 2019 calendar year and 2020 (for the days the mill was operated) to the Department by May 30th, 2020. This report shall include, but not be limited to, total emissions of sulfur dioxide and particulate matter from the Facility, mill production during 2019, 2020 and the methodologies used to measure or estimate emissions for each main source identified in Condition 44 of this Order.
46. The total annual Facility emissions for 2019 and 2020 (for the days the mill was operated) of sulphur dioxide and total particulate matter from main Facility sources identified in Condition 44 of this Order shall be limited to:
 - a. 2.0 kilograms of total particulate matter (TPM)/tonne of production; and
 - b. 4.0 kilograms of sulphur dioxide/tonne of production.
47. Calculations to be used in the annual emissions reports, to demonstrate compliance with Condition 46 of this Order, shall be conducted in accordance with Appendices D and E.
48. NPNSC shall operate and maintain a continuous emission monitor system(s) (CEMS), to measure the percent oxygen and temperature of the power boiler flue gas, while the power boiler is in operation.
49. The Approval Holder shall ensure that the CEMS described in Condition 48 of this Order are calibrated, maintained, operated and tested in accordance with the "Protocols and Performance Specifications for Continuous Monitoring of Gaseous Emissions From Thermal Power Generation", (Report EPS 1/PG/7), dated December 2005, published by Environment Canada.

50. The monitoring results from the CEMS shall be recorded and maintained on file for a period of not less than 2 years and made available to the Department upon request.
51. NPNSC shall undertake one source testing event between January 31st and March 31st, 2020, to demonstrate compliance with Table 4 of Appendix B. The source testing shall determine the Particulate Matter (PM) emission rate in grams per second and the concentration in milligrams per reference cubic metre released to the atmosphere from the power boiler exhaust gas stack. The source testing event shall comply with the Environment Canada EPS 1/RM/8 reference sampling method requirements.
52. Within 30 days of completion of source testing under Condition 51 of this Order, NPNSC shall complete and submit a Final Report on Source Testing to the Department.
53. NPNSC shall limit opacity of visible emissions, as measured by an observer, from any point source, to 20% except that the opacity may increase to 40 % for a period totaling not more than four minutes in any one-half hour period.
54. Notwithstanding Condition 53 of this Order, every time a fire is started in the combustion process equipment, the opacity of the visible emissions, as measured by an observer, may be greater than 40%, but not greater than 60% for a period totaling not more than 3 minutes during each quarter hour.
55. NPNSC shall submit monthly summary reports containing the following information:
 - a. a summary of any air quality related emergency and non-emergency incidents pursuant to the Environment Act, the Air Quality Regulations or this Order, including the date and time of the incident(s);
 - b. a summary of any operational problems related to the continuous air emission monitoring devices, environmental control equipment and/or the ambient air monitor(s), including the date and time of the incident(s);
 - c. a summary of the quality assured, quality controlled (QA/QC) ambient air quality data from the ambient air monitor(s) identifying the one hour averages and 24-hour rolling averages of total reduced sulphur in parts per billion, the 24-hour averages of total suspended particulate in micrograms per cubic meter, the one hour averages and 24-hour averages (calendar day) of continuous fine particulate (PM_{2.5}) data in micrograms per cubic meter, hourly average wind speed, wind direction, ambient temperature, barometric pressure and humidity including the dates used to calculate the averages;

- d. the electronic spreadsheets of the quality assured, quality controlled (QA/QC) air quality data; and
 - e. a summary of any complaints received from the public and how they were responded to by NPNSC, including the date and time of the complaint and any correlation to an incident that occurred;
56. NPNSC shall submit monthly reports for December 2019 and January 2020 by February 28th, 2020. All other monthly reports thereafter shall be submitted within 15 days of the end of each calendar month.
57. In addition to Conditions 55 (a), (b), (c), (d) and (e), the January 2020 monthly report shall submit the average annual geometric mean ground level concentration of total suspended particulate for 2019
58. In addition to Conditions 55 (a), (b), (c), (d), and (e), the December 2019 and January 2020 monthly reports shall also include:
- a. a table showing the 4-hour rolling average of total reduced sulphur emissions from the recovery boiler stack and lime kiln stack, including the date and time covered by the average. The table shall also include the percentage of time during the month that the recovery boiler and lime kiln were compliant with Table 5 of Appendix B of this Order; and
 - b. the number of incidents of direct venting to atmosphere of untreated Concentrated Non-Condensable Gases (CNCGs), Dilute Non-Condensable gases (DNCGs), and Stripper Off Gases (SOGs), including the date, time and duration of each discharge, the total amount of time that CNCG, DNCG and SOG has been emitted for the month, the percentage of operating time the gases are released, and the suspected reason for each discharge.
59. The 2019 annual report of continuous emission monitoring data for total reduced sulphur emissions, shall be submitted to the Department by March 31st, 2020, containing as a minimum:
- a. the annual average of 4 hour rolling averages expressed in ppm_{dv};
 - b. the maximum 4 hour rolling average of emissions expressed in ppm_{dv};
 - c. the annual percentage of time emissions exceeded the limit of Approval Table 5 of Appendix B;

- d. summaries of gas cylinder audits, Relative Accuracy Test Audit (RATA) results, system recommendations; and
- e. Any corrective actions implemented to the continuous emission monitor(s) from the previous year of operations.

Primary Fuels

- 60. NPNSC shall limit the fuel sources for the power boiler to biomass, #2 fuel oil and natural gas.
- 61. NPNSC shall submit fuel consumption records on a monthly basis during the period of this Order.
- 62. NPNSC shall not burn or otherwise utilize any alternative fuels not covered under Condition 60 of this Order without prior authorization from the Department.

Power Boiler

- 63. NPNSC shall post all Power Boiler particulate matter emission source testing results on the NPNSC website and/or other forums for public access. Results shall be posted within 15 days of NPNSC's receipt of the 3rd party Source Testing Report outlining the results.
- 64. NPNSC shall ensure all staff involved in the operation of the Power Boiler have been trained in accordance with NPNSC July 14, 2017 letter outlining the power boiler operations training schedule.

Hydrology and Hydrogeology

- 65. During the 2020 calendar year, NPNSC shall sample and analyze the groundwater and surface water monitoring network at the NPNSC Mill Site for the same parameters, at the same frequency and at the same locations as those identified in the Dillon Consulting Limited Report (File 18-7281-1000) dated March 2019 titled 2018 Annual Monitoring Report.
 - a. All surface water samples referenced in Dillon Consulting Limited Report (File 18-7281-1000) dated March 2019 titled 2018 Annual Monitoring Report shall also be sampled analyzed for dissolved zinc and dissolved organic carbon.

- b. Results of all quarterly testing for surface water at the mill site shall be submitted to the Department within 30 days of receipt from the laboratory.
- 66. During the 2020 calendar year, NPNSC shall sample and analyze the groundwater and surface water monitoring network at the Boat Harbour Effluent Treatment Facility as outlined in Table 6 of Appendix C.
 - 67. NPNSC shall ensure all surface and ground water samples are collected in a consistent manner in accordance with established industry standards and best practices.
 - 68. NPNSC shall not modify, (addition, deletion or replacement), the Monitoring well network unless the Department provides authorization, in writing, to do so. A request to modify the monitoring well network shall be made the Department accompanied by justification for the change, prepared by a qualified professional, licensed to practice in the Province of Nova Scotia by APGNS or APENS before the Department will consider any request for a modification.
 - 69. NPNSC shall submit any request for modification to the monitoring well network a minimum of thirty (30) days prior to the proposed implementation of the modification.
 - 70. NPNSC shall review the groundwater and surface water quality monitoring data as it is collected in order to identify potential changes in water chemistry associated with mill activities. Any change in groundwater quality or quantity shall be reported immediately to the Department.
 - 71. NPNSC shall submit an Annual Report for 2019 groundwater and surface water monitoring at the site and report to the Department by April 1st, 2020. The Annual Report shall include, but are not limited to:
 - a. a review of field methodologies, including sampling techniques; a description of the groundwater monitoring network;
 - b. a review of the current groundwater monitoring program and recommendations for modifications, as applicable;
 - c. current and historical static water level data in tabular format; current and historical groundwater quality data in tabular format;
 - d. a review of the current surface water monitoring program and recommendations for modifications, as applicable;

- e. current and historical surface water and leachate quality data in tabular format;
 - f. laboratory certificates of analysis;
 - g. a detailed interpretation of the groundwater, surface water and leachate quality data including an analysis of spatial and temporal trends;
 - h. the identification of any adverse impacts to groundwater and/or surface water as a result of mill activities and associated recommendations, as applicable; and
72. The annual report in Condition 71 shall be prepared by or under the direction of a Professional Hydrogeologist licensed to practice in Nova Scotia by the Association of Professional Geoscientists of Nova Scotia (APGNS) or the Association of Professional Engineers of Nova Scotia (APENS).
73. NPNSC shall maintain records for all ground and surface water monitoring wells and production wells at the Facility, including but not limited to borehole logs and construction details, and maintenance records for a minimum of 15 years beyond the life of the Facility.
74. NPNSC shall ensure that the following discharge limits for suspended solids are met for any water which is discharged from the Site to a watercourse or wetland at the Site:

Clear Flows (Normal Background Conditions):*

- a. Maximum increase of 25 milligrams/litre from background levels for any short-term exposure (24 hours or less)
- b. Maximum average increase of 5 milligrams/litre from background levels for longer term exposure (inputs lasting between 24 and 30 days)

High Flow (Spring Freshets and Storm Events):*

- c. Maximum increase of 25 milligrams/litre from background levels at any time when background levels are between 25 milligrams/litre and 250 milligrams/litre
- d. Shall not increase more than 10% over background levels when background is > 250 milligrams/litre

CCME Environmental Quality Guideline for Aquatic Life, 2002.

75. NPNSC shall ensure that all surface water discharged from the site meet the limits in Table 7 in Appendix C

Registered Public Drinking Water Supply

76. NPNSC shall maintain registration as a Public Drinking Water Supply, in accordance with the Guidelines for Monitoring Public Drinking Water Supplies until at least April 30, 2020.
77. NPNSC shall determine if the Facility will be required to be registered as a Public Drinking Water Supply following April 30, 2020 by no later than March 31, 2020. If required, NPNSC shall complete all necessary steps to de-register as of April 30, 2020.

Dangerous Goods

78. NPNSC is prohibited from depositing Dangerous Goods or Waste Dangerous Goods into the BHETF.
79. NPNSC shall provide a detailed list of all bulk dangerous goods and bulk waste dangerous goods which will be on site as of January 30, 2020. This list shall include exact quantities of each substance. This list shall be provided to the Department by no later than February 3, 2020.
80. NPNSC shall retain the services of a qualified Professional, licensed to practice in the Province of Nova Scotia, to develop a dangerous goods management/ disposition plan. This plan shall include but not be limited to a detailed schedule to empty and prepare for hibernation the dangerous goods storage vessels, identification of the destination of deposition/ management/ treatment, details of the decommissioning of the storage vessels, transmission lines, dangerous goods storage areas, containers, tanks, totes, drums, pails, railcars and/or trucks that will protect them from damage/degradation during the period from January 31, 2020 to April 30, 2020 and beyond as well as disposal plans for sludges and solid wastes, including tank bottoms. Please note discharge of any solid wastes or sludges to the BHETF is strictly prohibited. The plan for dangerous goods in bulk storage shall be provided to the Department for review and approval by no later than February 10, 2020, the plan for all other dangerous goods shall be submitted by April 30, 2020.

81. NPNSC shall ensure all transfers of bulk Dangerous Goods shall be conducted using containment pads or drip pans to capture spills or drips during transfer operations to the approved transport containers.
82. NPNSC shall ensure all dangerous goods storage that is required after January 30th, 2020 is maintained as it was prior to January 30, 2020 until such time as the deposition/ hibernation plan can be executed. This may require auxiliary heating, in addition to the Power Boiler operation, to ensure materials do not pose a threat to the integrity of storage vessels.
83. NPNSC shall ensure all emergency shut-off valves and/or emergency shut-offs on transfer pumps are operational.

Petroleum Management

84. NPNSC shall provide the Department with an inventory of petroleum products and volumes which will be on site after January 30, 2020. This inventory shall be provided no later than February 3, 2020.
85. NPNSC shall retain the services of a qualified professional to prepare a deposition/ hibernation plan for all petroleum and petroleum storage vessels at the Facility as of January 30, 2020. This plan, together with a detailed schedule for implementation of the plan, shall be provided to the Department for review and approval by no later than February 10, 2020.

Industrial Landfill

86. NPNSC is strictly prohibited from disposing of domestic solid waste in the industrial landfill(s). All domestic solid waste shall be disposed of at a facility licensed or approved for the recycling, composting or disposal of such solid waste.
87. NPNSC shall submit an assessment of the effluent treatment system sludges (both settling basin and aeration basin sludges), using the Nova Scotia Guidelines for Disposal of Contaminated Solids in Landfills, dated May 10, 2016. In addition to the parameters outlined in the Guidelines, the assessment shall include but not limited to analysis for dioxins and furans. This information will inform the wastewater treatment and disposal plan required under Condition 26 of this Order. This assessment must meet the satisfaction of the Department, prior to disposal at the industrial landfill. Any request to dispose of effluent treatment system sludges at an alternate location requires written authorization from the Department.

88. NPNSC may dispose of combustion residues and solid waste originating from pollution control equipment such as, electrostatic precipitators, scrubbers and demisters at the industrial landfill, unless authorization has been obtained from the Department for alternative disposal. Unless otherwise approved, solid waste from the multiclone must be disposed at the industrial landfill.
89. NPNSC is strictly prohibited from disposing of petroleum impacted soil at the industrial landfill. All petroleum impacted soils must be disposed of at a licensed or approved for the treatment or disposal for such waste.
90. NPNSC is restricted to dispose of only the industrial waste types for which the industrial landfill was designed, as identified in the Landfill Operations Manual, dated December 1989 and Solid Waste Management Strategy Background Report, dated November 1989, at the industrial landfill.
91. NPNSC shall retain the services of a professional engineer, licensed to practice in the Province of Nova Scotia, to assess all of the industrial landfills and develop a closure plan for each of on-site industrial landfills. This closure plan shall include but not be limited to, a detailed engineering plan to cap the industrial landfills, develop a comprehensive long-term monitoring plan as well as an implementation schedule for the proposed closure activities. This assessment and plan shall be submitted to the Department no later than August 31, 2020.

Asbestos Disposal

92. NPNSC shall file a copy of a current, up-to-date surveyed site plan indicating the exact location of the asbestos waste disposal area with the Registry of Deeds as well as provide a copy to the Department by no later than May 29, 2020. If there have been any changes, to the plan entitled Industrial Solid Waste Landfill Engineering Drawing Rev. 1 dated August 1990, Sheet 5 and Sheet 6, prepared by Porter Dillon Consulting Ltd., this plan must be updated to reflect any changes.
93. Abandonment or discontinuance of use of the designated asbestos waste disposal area requires a final capping material having a depth of not less than one hundred twenty-five (125) centimetres with a permeability of not greater than 10^{-6} .
94. NPNSC shall designate the asbestos disposal area, based on an up-to-date survey plan with clear permanent signage by May 29, 2020.
95. NPNSC shall secure the area of designated asbestos waste disposal from unauthorized access by no later than May 29, 2020.

Ash Pond Management

96. NPNSC shall operate and maintain the ash pond to prevent a release to the environment.
97. NPNSC shall retain the services of a qualified professional engineer, licensed to practice in the Province of Nova Scotia, to develop a comprehensive Ash Pond Cleaning and Decommissioning plan. This plan shall be submitted to the Department by no later than March 15th, 2020 and shall include but not be limited to a detailed schedule for hibernation activities.

Communication Plan

98. NPNSC shall maintain the Mi'kmaq Communication Plan for the purposes of sharing information with the Pictou Landing First Nation on environmental or any other issues as directed by the Department.

Insurance

99. NPNSC, at its own expense, must purchase and maintain in full force during the period of operation, insurances to protect itself, its contractors and sub-contractors, the Department, the Corporation, their successors and assigns and their respective directors, officers, council members, employees, agents and servants involved in the operation and reclamation of a Bleached Kraft Pulp Mill.

Such insurance shall provide coverage for all environmental risks associated with the operation of the Facility and shall protect the Department, the Corporation, their successors and assigns, and their respective officers, directors, council members and employees from all claims arising out of liability for environmental impairment.

All policies shall be issued by financially sound insurers licensed to carry on business in Canada and shall be subject to review by the Department. All policies shall be non-cancellable, except for violation of statutory law which places the Insurer in violation of the laws of its place of domicile or threatens its solvency.

Certified copies of all operation, reclamation period insurance policies, or other forms of documentation acceptable in form and content to the Department, shall be delivered to the Department by no later than January 31st, 2020.

100. This insurance will include the following provisions:
 - a. a policy limit of liability of not less than \$10 million per occurrence;

- b. "Her Majesty the Queen in the Right of the Province of Nova Scotia as represented by the Minister of Environment" named as "Additional Insured";
 - c. this approved Facility shall be included on the policy in its description of operations;
 - d. waiver of Insurer's rights of subrogation against Nova Scotia;
 - e. breach of any terms or conditions of the policy, or negligence or willful act or omission or false representation by an Insured or any other person, shall not invalidate the insurance with respect to Nova Scotia;
 - f. 90 days prior written notice of cancellation or material change from Insurer to the Department;
 - g. Gradual and sudden pollution coverage for all insured perils;
 - h. Government- ordered clean up expenses coverage;
 - i. Waste materials coverage; and
 - j. Products Hazard & Completed Operations, Pollution Coverage.
101. Following a review by the Department, the Department may require NPNSC to make a change in the coverage required.
102. NPNSC shall notify the Department in advance of any change that is not addressed in this Order, as an Approval may be required.

Appendix A

TABLE 1: Effluent Monitoring Parameters and Discharge Limits

Parameter	Sample Type	Monitoring Frequency	Location	Discharge Limit
Biochemical Oxygen Demand (BOD₅)	Continuous	3 days per week	Effluent Monitoring Station Point C	85 mg/L daily maximum
Suspended Solids	Continuous	Daily	Effluent Monitoring Station Point C	85 mg/L daily maximum
pH	Continuous	Daily	TMEB and Effluent Monitoring Station Point C	6-9
Flow rate	Continuous	Daily	Effluent Monitoring Station Point C	35000 cubic meters/day maximum
Acute Toxicity-rainbow trout*	Grab	once per month	Effluent Monitoring Station Point C	Pass LC50
Acute Toxicity-Daphnia magna**	Grab	once per week	Effluent Monitoring Station Point C	Pass LC50
Dioxins and Furans	24-hour composite sample	1 sample before March 1, 2020	Effluent Monitoring Station Point C	as required by the PPE Chlorinated Dioxins and Furans Regulations***

* **Biological Test Method:Reference Method for Determining Acute Lethality of Effluents to Daphnia magna, 2nd Edition, December 200, Amended Feb 2016, EPS1/RM/13.**

** **Biological Test Method Reference Method for Determining Acute Lethality of Effluents to Rainbow Trout, 2nd Edition, Dec 2000 amended May 2007 and Feb 2026, EPS1/RM/14.**

TABLE 2: Wastewater Monitoring Parameters and Discharge Limits

Parameter	Sample Type	Monitoring Frequency	Location	Compliance Limit
Biochemical Oxygen Demand (BOD ₅)	Continuous	5 days per week	Effluent Monitoring Station Point D	25 mg/L daily maximum*
Suspended Solids	Continuous	Daily	Effluent Monitoring Station Point D	25 mg/L daily maximum*
pH	Continuous	Daily	Effluent Monitoring Station Point D	6-9
Temperature		Daily	Effluent Monitoring Station Point D	35 °C maximum
Flow rate	Continuous	Daily	Effluent Monitoring Station Point C	35000 cubic meters/day maximum
Acute Toxicity-rainbow trout**	Grab	once per month	Effluent Monitoring Station Point D	Pass LC50
Acute Toxicity-Daphnia magna***	Grab	once per week	Effluent Monitoring Station Point D	Pass LC50
Dioxins and Furans	24-hour composite sample	1 sample before April 10, 2020	Effluent Monitoring Station Point C	

* Concentration shall be calculated- $[TSS_{measured}] \times 0.667 = [TSS_{for\ comp}]$; $[BOD_5\ measured] \times 0.667 = [BOD_5\ for\ comp]$ Comp= compliance

** Biological Test Method: Reference Method for Determining Acute Lethality of Effluents to Daphnia magna, 2nd Edition, December 200, Amended Feb 2016, EPS1/RM/13.

*** **Biological Test Method Reference Method for Determining Acute Lethality of Effluents to Rainbow Trout, 2nd Edition, Dec 2000 amended May 2007 and Feb 2026, EPS1/RM/14.**

Appendix B

Table 3

Maximum Permissible Ground Level Concentration of Fine Particulate (PM_{2.5})

Pollutant	Averaging Time	Maximum Permissible Ground Level Concentration
PM _{2.5}	24 hours (calendar day)	30 µg/m ³

µg/m³ – micrograms per cubic metre

Table 4

In-Stack Particulate Matter Emissions Limit

Exhaust Gas Stack	Particulate Matter Concentration Limit
Power Boiler	150 mg/Rm ³

mg - milligrams

Rm³ - reference cubic meter (i.e. the volume of gas at 25°C and 101.3 kpa corrected to 11% Oxygen)

Table 5

In-Stack Total Reduced Sulphur Emissions Limit

Exhaust Gas Stack	Total Reduced Sulphur Concentration Limit
Recovery Boiler	15 ppm dv (any 4-hour rolling average) ¹
Lime Kiln	20 ppm dv (any 4-hour rolling average) ²

ppm dv – parts per million dry volume

¹ The limit is uncorrected for oxygen. To allow for start-up, shutdown and malfunction conditions, the Approval Holder may exceed this limit up to 5% of the time, on an annual basis, with no 4-hour rolling average exceeding 60 ppm dv.

² The limit is uncorrected for oxygen. To allow for start-up, shutdown and malfunction conditions, the Approval Holder may exceed this limit up to 1% of the time, on an annual basis, with no 4-hour rolling average exceeding 30 ppm dv.

Appendix C

Table 6

Boat Harbour Effluent Treatment Facility - Groundwater and Surface Water Monitoring Requirements

Groundwater		
Location*	Parameters	Frequency
MW15-1S	General Inorganic Chemistry (including fluoride)	Quarterly
MW15-1D	Dissolved Metals (including Mercury)	
MW15-2S	DOC	
MW15-2D	COD	
MW15-3S	TKN	
MW15-3D	Total phosphorus	
MW15-4S	Chlorate and chlorite	
MW15-5S	Absorbable Organic Halogens (AOX)	
Surface Water		
Location*	Parameters	Frequency
Point 1	General Inorganic Chemistry (including fluoride)	Quarterly
Point 2	Total Metals (including Mercury)	
Pond 2	Dissolved Zinc	
	Trivalent chromium	
	Hexavalent chromium	
	DOC	
	TSS	
	BOD	
	COD	
	TKN	
	Total phosphorus	
	Chlorate and chlorite	
	Absorbable Organic Halogens (AOX)	
	Total petroleum hydrocarbons (TPH/BTEX)	
	Polycyclic Aromatic Hydrocarbons (PAHs)	
	Volatile organic compounds (VOCs)	

*As depicted in Figure 3-1 of the following report: Dillon Consulting Limited (File 18-7281-2000).
 March 2019. Boat Harbour Effluent Treatment System – 2018 Monitoring Program.

Table 7

Surface Water Discharge Limits

PARAMETER	DISCHARGE LIMIT
pH	6.5 - 9.0
Total Petroleum Hydrocarbons	3.5 milligrams per litre or Atlantic RBCA*
Chromium (trivalent)	8.9 micrograms per litre
Chromium (Hexavalent)	1.0 micrograms per litre
Copper	2-4 micrograms per litre
Iron	300 micrograms per litre
Nickel	25-150 micrograms per litre
Vanadium	2 milligrams per litre
Zinc	30 micrograms per litre

*** lowest value after finalization of Atlantic RBCA standard for surface water**

Appendix D

Quantification of Sulphur Dioxide and Total Particulate Matter Air Emissions for Facility Emissions Cap

Characterization of the emissions shall take into account the following emission sources:

- Power Boiler
- Smelt Dissolving Tank
- Lime Kiln
- Recovery Boiler
- Any other stationary combustion sources with a nominal heat capacity greater than 1 gigajoule per hour (GJ/h).

1. The following formula shall be used to calculate the total annual sulphur dioxide (SO₂) and total particulate matter (TPM) emissions:

$$Q_{poll} = \sum_i^n Q_{xi}$$

where:

Q_{poll} is the annual quantity of pollutants emitted by the mill, expressed in kilograms.

Q_{xi} is the annual quantity of pollutants emitted by each emission source in the mill, expressed in kilograms.

X_i represents each emission source in the mill.

n is the total number of each type of emission source in the mill.

2. The following formula shall be used to calculate the annual SO₂ and TPM emissions from each emission source:

$$Q_{xi} = \sum_i^n \frac{Ex_i \times Fx_i}{fx_i} \times \frac{1}{1000}$$

where:

Q_{xi} is the annual quantity of pollutants emitted by each emission source, expressed in kilograms.

Ex_i is the result of the characterization of an emission source "i", expressed in grams per hour (g/h) and corrected to 7% oxygen.

x represents each emission source.

Fx_i is the quantity used by one emission source "i" during the 12-month period covered by this quantification.

- For the recovery boiler, it is the quantity of black liquor, expressed in metric tonnes of black liquor dry solids.
- For the power boiler, it is the quantity of fuel consumed, expressed in gigajoules (GJ).
- For the smelt dissolving tank, it is the quantity of black liquor sent to the recovery boiler, expressed in metric tonnes of black liquor dry solids.
- For the lime kiln, it is the quantity of lime produced, expressed in metric tonnes of calcium oxide (CaO).
- For any other combustion sources, it is the quantity of fuel consumed, expressed in GJ, metric tonnes or cubic metres (m³).

$f x_i$ is the average input of fuel consumed by each emission source "i" during the characterization.

- For the recovery boiler, it is the black liquor input rate, expressed in metric tonnes of black liquor dry solids per hour.
- For the power boiler, it is the fuel input rate, expressed in GJ/h.
- For the smelt dissolving tank, it is the input rate of black liquor sent to the recovery boiler, expressed in metric tonnes of black liquor dry solids per hour.
- For the lime kiln, it is the lime production rate, expressed in metric tonnes of calcium oxide per hour.
- For any other combustion sources, it is the fuel consumption rate, expressed in GJ/h, metric tonnes per hour or cubic metres per hour.

1/1000 is the gram to kilogram conversion factor.

n = the total number of each emission source in the mill.

3. All emissions shall be sampled downstream of any emission control devices. Each source test shall be done on three separate samples. The average of the three samples is the result.

The sampling shall be done during the mill's regular hours of operation (in other words, no sampling is to be done during an interruption or when there is a problem with the equipment that could impact atmospheric emissions from the source). The tests for each source shall be performed under normal operating conditions, including normal fuel composition and a normal combustion rate.

4. Measurement of emissions from sources and the parameters required to calculate emissions shall comply with one of the following methods:
 - Environment Canada, Reference Method for Source Testing: Measurement of Releases of Particulate from Stationary Sources, EPS 1/RM/8.

Appendix E

Determining Annual Production for Air Emissions Calculations of the Facility Emissions Cap

1. The annual quantity of finished product shall be aggregated by using the total daily production from January 1 to December 31.
2. The finished product must be measured using devices that comply with the federal Weights and Measures Regulations. The production of a finished product must be measured in air-dried metric tonnes.
3. If the water content of the pulp is greater than 10%, the weight of the finished product is to be adjusted such that this content does not exceed 10%; if the water content is equal to or less than 10%, the weight does not need to be adjusted;