



DEPARTMENT ORDER

**Sappi North America, Inc.
Somerset County
Skowhegan, Maine
A-19-70-H-A**

**Departmental
Findings of Fact and Order
Part 70 Air Emission License
Amendment #1**

FINDINGS OF FACT

After review of the Part 70 License amendment application, staff investigation reports, and other documents in the applicant's file in the Bureau of Air Quality, pursuant to 38 Maine Revised Statutes (M.R.S.) § 344 and § 590, the Maine Department of Environmental Protection (Department) finds the following facts:

I. REGISTRATION

A. Introduction

FACILITY	Sappi North America, Inc.
LICENSE TYPE	Part 70 Significant License Modification
NAICS CODES	322121
NATURE OF BUSINESS	Pulp and Paper Mill
FACILITY LOCATION	1329 Waterville Road, U.S. Route 201 Skowhegan, Maine

Sappi North America, Inc. (Sappi) is an integrated pulp and paper manufacturing facility located in Skowhegan, Maine. Established in 1976, this facility uses the kraft pulping process and produces various pulp and paper products.

New Source Review (NSR) license A-19-77-14-A (NSR #14), issued 2/4/2022, addressed operational changes to the existing steam-heated dryer cans on Paper Machine #1. This project, referred to as the Paper Machine #1 Dryer Capacity Project, involved increasing the maximum allowable working pressure rating of the existing steam-heated dryer cans, which allows Sappi to increase the machine's production rate.

NSR license A-19-77-15-A (NSR #15), issued 9/7/2023, addressed physical and operational changes to modify Paper Machine #2 to produce higher basis-weight paper products and increase the production capacity of the machine. This project is referred to as the 2023 PM#2 Rebuild Project.

NSR #15 also included the following changes:

1. Revisions to the treatment strategy for low volume high concentration (LVHC) gases, high volume low concentration (HVLC) gases, and kraft condensates to reduce emissions of sulfur dioxide (SO₂);

2. Augmentation of the emission limits for PM₁₀ for some emission units to include condensable particulate matter; and
3. Establishing emission limits for PM_{2.5} where none previously existed.

These changes were unrelated to the 2023 PM#2 Rebuild Project other than the new emission rates are reflected in the Ambient Air Quality Impact Analysis.

Sappi has requested that the provisions of these NSR licenses be incorporated into their Part 70 license.

B. Emission Equipment

The following new equipment was added as part of the 2023 PM#2 Rebuild Project (NSR #15):

Fuel Burning Equipment

Equipment	Maximum Capacity	Fuel Type	Stack ID
Paper Machine #2 Coating Air Dryers (PM2 Coating Dryers)	56.4 MMBtu/hr (combined)	natural gas	Multiple

The following existing equipment is also addressed in this Part 70 license amendment:

Process Equipment

Equipment	Description	Install Date	Stack ID
Paper Machine #1	Paper machine with aqueous on-machine coater, steam drum dryers, and natural gas-fired dryers	1981	Multiple/ Fugitive
Paper Machine #2	Paper machine with aqueous on-machine coater, steam drum dryers, and natural gas-fired dryers	1985	Multiple/ Fugitive

Fuel Burning Equipment

Equipment	Maximum Capacity	Fuel Type	Install. Date	Stack ID
Power Boiler #1	848 MMBtu/hr	residual fuel, distillate fuel, used oil, tire derived fuel, biomass, wood pellets, waste paper, sludge, LVHC gases, HVLC gases, solid oily waste, and kraft condensates	1977	Main Stack
Power Boiler #2	1,300 MMBtu/hr	residual fuel, distillate fuel, natural gas, used oil, tire derived fuel, biomass, waste paper, sludge, LVHC gases, HVLC gases, solid oily waste, and kraft condensates	1989	Power Boiler #2 Stack
Recovery Boiler	5.5 MMlbs BLS/day	black liquor, residual fuel, distillate fuel, used oil, LVHC gases, HVLC gases	1976	Main Stack
Smelt Dissolving Tanks #1 & #2	N/A	N/A	1976	Main Stack
Lime Kiln	125 MMBtu/hr	residual fuel, distillate fuel, natural gas, used oil, propane, LVHC gases, and kraft condensates	1976	Main Stack

C. Definitions

Particulate matter (PM, PM₁₀, PM_{2.5}) mean the same as they are defined in *Definitions Regulation*, 06-096 C.M.R. ch. 100.

Records or Logs mean either hardcopy or electronic records.

D. Application Classification

All rules, regulations, or statutes referenced in this air emission license refer to the amended version in effect as of the issued date of this license.

Sappi has requested incorporation into the Part 70 Air License the relevant terms and conditions of NSR licenses A-19-77-14-A (2/4/2022) and A-19-77-15-A (9/7/2023) issued pursuant to *Major and Minor Source Air Emission License Regulations*, 06-096 Code of Maine Rules (C.M.R.) ch. 115. Therefore, this license application was considered a Part 70 Significant License Modification and processed under *Part 70 Air Emission License Regulations*, 06-096 C.M.R. ch. 140.

E. Project Descriptions

1. Paper Machine #1 Dryer Capacity Project

Paper and board produced on Paper Machine #1 is dried through direct contact of the product with the hot surfaces of paper drying cylinders, also known as “dryer cans.” These dryer cans are heated with pressurized steam supplied by Power Boilers #1 and #2. The steam condenses inside the dryer cylinders as it transfers heat to the dryer shell. The steam inside the dryer can is saturated; therefore, the steam temperature is directly related to the steam pressure. As the steam pressure is increased, the steam temperature also increases, which leads to an increase in the dryer can surface temperature, thereby improving the drying rate of the paper machine.

Dryer cans are designed and manufactured to meet pressure vessel codes, the most common of which is the American Society of Mechanical Engineers (ASME) Boiler and Pressure Vessel Code. These codes dictate the maximum allowable working pressure of the dryer cans, which is dependent on shell thickness and material.

Production on Paper Machine #1 is limited by the drying rate of the machine. Based on the dryer can shell material and wall thickness of each dryer can, Sappi determined that the dryer cans could safely be re-rated to increase the maximum allowable working pressure from 75 pounds per square inch (psi) to 85 psi, which would allow Sappi to increase the amount of heat delivered to the paper machine steam-heated dryer cans, which would result in the ability to increase paper production from Paper Machine #1. Dryer cans that could not be re-rated were replaced with on-site spares that met the required specifications.

Following installation of the re-rated and replaced dryer cans, Sappi anticipates that paper and board production on Paper Machine #1 will increase by approximately 10 percent over previous production levels. The additional fiber needed to supply Paper Machine #1 to achieve higher levels of production will not be produced by the Sappi kraft pulp mill but will instead be purchased market pulp. Therefore, the kraft pulp mill emission units located at the Mill were not affected by this project.

This project will result in an increase in steam demand from Sappi’s existing boilers, Power Boiler #1 and Power Boiler #2. Additionally, the natural gas-fired coating and sizing dryers on Paper Machine #1 are expected to see a 10 percent increase in fuel use in proportion with the anticipated production increases.

2. 2023 PM#2 Rebuild Project

NSR #15 modified Paper Machine #2 to produce higher basis-weight paper products and increase the machine’s production capacity. Paper Machine #2’s previous

production capacity was approximately 250,000 finished tons per year (finished TPY). The changes included in this modification will allow Paper Machine #2 to double its capacity to approximately 520,000 finished TPY. The 2023 PM#2 Rebuild Project includes the following physical and operational changes:

a. Modifications to Stock Preparation and Wet End

Sappi will increase the capacity of Paper Machine #2's stock preparation and wet end areas through installation of larger pumps and save-all tanks, upgrades to cleaners and screens, reconfiguration of hardwood pulp refiners, and installation of one additional hardwood pulp refiner.

b. Modifications to Headbox, Former, and Press

Sappi will complete an extensive maintenance overhaul of the existing Paper Machine #2 headbox, installation of a new and larger forming section with higher drainage capacity to allow for increased production capacity, and installation of a new press section.

c. Modifications to the Steam-Heated Dryer Section

The capacity of the main dryer section will double from 32 steam-heated dryer cans, each rated at 75 psi, to 64 dryer cans each rated at 150 psi. The dryer hood will be extended and additional heat recovery systems constructed. This change will result in an increase in steam demand from Sappi's existing boilers, Power Boiler #1 and Power Boiler #2.

d. Removal of Existing Turbine

The existing Paper Machine #2 line-shaft drive turbine will be removed. This turbine currently exhausts to the 60-lb steam header that supplies the existing dryers on Paper Machines #1 and #2. With this steam source removed, additional steam will be required from the steam turbine generators increasing the demand on Sappi's existing boilers, Power Boiler #1 and Power Boiler #2.

e. New Blade Coating Air Dryers

Sappi will install two new blade coaters on Paper Machine #2 that use five new natural gas-fired dryers (PM2 Coating Dryers).

f. Modifications to Dry End

Sappi will install new starch sizers, calendaring activities, reel winder, roll wrapping, and core cutting areas to support the 2023 PM#2 Rebuild Project.

g. Warehouse Expansion

Sappi intends to expand the existing storage warehouse and will utilize steam from the power boilers to heat the additional space. This will result in an increase in steam demand from Sappi's existing boilers, Power Boiler #1 and Power Boiler #2.

II. BEST PRACTICAL TREATMENT (BPT) AND EMISSION STANDARDS

A. Introduction

In order to receive a license, the applicant must control emissions from each unit to a level considered by the Department to represent Best Practical Treatment (BPT), as defined in *Definitions Regulation*, 06-096 C.M.R. ch. 100. Separate control requirement categories exist for new and existing equipment as well as for those sources located in designated non-attainment areas.

BPT for new sources and modifications is based on the demonstration contained in the underlying NSR license that emissions are receiving Best Available Control Technology (BACT), as defined in *Definitions Regulation*, 06-096 C.M.R. ch. 100. BACT is a top-down approach to selecting air emission controls considering economic, environmental, and energy impacts. BACT for the Paper Machine #1 Dryer Capacity Project was addressed in NSR #14, and BACT for the 2023 PM#2 Rebuild Project was addressed in NSR #15. Each BACT analysis is explained in further detail below.

B. Paper Machine #1

The Paper Machine #1 Dryer Capacity Project involved operational changes to Paper Machine #1 as described earlier.

Paper Machine #1 has the potential to emit quantifiable emissions of PM, PM₁₀, PM_{2.5}, and VOC.

1. BACT

BACT for Paper Machine #1 was addressed in NSR #14.

a. Particulate Matter (PM, PM₁₀, PM_{2.5})

Particulate matter emissions are generated by the paper making process itself as dust particles are freed from the paper web as it passes through the machine. The paper machine room has multiple venting points to the atmosphere along the form and press sections and drying, coating, and winding sections. Paper Machine #1 is

not a permanently enclosed structure, so particulate dust is considered to be emitted fugitively within the building and in very low concentrations from building vents.

The Department found using good operating and housekeeping practices to be BACT for PM, PM₁₀, and PM_{2.5} emissions from Paper Machine #1.

b. Volatile Organic Compounds (VOC)

VOC emissions from Paper Machine #1 are attributable to many different sources. Small amounts of VOC are present in the water carrying the pulp to the paper machines. The most often detected compound from this source is methanol, a byproduct of the chemical and mechanical pulping and bleaching processes. VOC are also present in papermaking additives (defoamers, slimicides, retention aids, wet strength agents, wire and felt cleaners, etc.) and may be released in the papermaking process.

The Department found an annual emission limit of 65.6 tons per year (tpy) (calendar year total basis) to represent BACT for emissions of VOC from Paper Machine #1. Compliance shall be demonstrated by calculations of emissions based on actual chemical use assuming that 100% of the VOC is volatilized and emitted. This calculation method is considered conservative since many paper machine additives will react with the web substrate limiting VOC emissions to the unreacted portion only.

2. Future Project Emissions Reporting

Pursuant to 40 C.F.R. § 52.21(r)(6), Sappi shall monitor, calculate, and maintain a record of the annual emissions (in tons per year on a calendar year basis) of NO_x and VOC for all emission units that are part of the Paper Machine #1 dryer can upgrade (modified or affected) including emissions from Paper Machine #1, Paper Machine #1 Natural Gas Dryers, Power Boiler #1 and Power Boiler #2. Sappi shall monitor, calculate, and maintain a record of the annual emissions for a period of 10 years following the resumption of regular operations after the change.

If the annual emissions, in tons per year, from the project exceed the baseline actual emissions, excluding any emission increase unrelated to the project and due to demand growth, for any of these pollutants by an amount equal to or greater than the significant emissions increase level for that pollutant as identified above, Sappi shall submit a report to the Department and EPA within 60 days after the end of the calendar year which contains the following:

- a. The facility name, address, and phone number;
- b. The annual emissions for the project; and

- c. Any other information that the facility wishes to include in the report (e.g., an explanation as to why the emissions differ from the preconstruction projection).
3. 40 C.F.R. Part 63, Subpart JJJJ

Federal regulation 40 C.F.R. Part 63, Subpart JJJJ, *National Emission Standards for Hazardous Air Pollutants: Paper and Other Web Coating*, applies to facilities that perform paper and other web coating operations. Paper Machine #1 makes only paper. Sappi performs coating operations on Paper Machine #1. However, the coating is part of the sheet formation and on-machine operations and does not involve the application of coatings to any substrate other than the paper being produced. This is not expected to change with implementation of the Paper Machine #1 Dryer Capacity Project. Pursuant to a letter dated November 19, 2003, from the U.S. EPA to Timothy Hunt of the American Forest and Paper Association, both size presses and on-machine coaters that function as part of the in-line papermaking system used to form the paper substrate are not subject to 40 C.F.R. Part 63, Subpart JJJJ requirements. Therefore, Subpart JJJJ does not apply to Paper Machine #1.

C. Paper Machine #2

The 2023 PM#2 Rebuild Project includes physical and operational changes to Paper Machine #2 as described earlier including modifications to the stock preparation and wet end areas, headbox, former, press, steam-heated dryer section, and dry end, removal of the existing steam turbine, and installation of two new blade coaters with associated natural gas-fired dryers (discussed later).

Paper Machine #2 has the potential to emit quantifiable emissions of PM, PM₁₀, PM_{2.5}, and VOC.

1. BACT

BACT for Paper Machine #2 was addressed in NSR #15.

a. Particulate Matter (PM, PM₁₀, PM_{2.5})

The proposed capacity upgrades to Paper Machine #2 will result in an increase in process-related PM, PM₁₀, and PM_{2.5} emissions from the paper web as it is formed and dried.

Particulate matter emissions are generated by the paper making process itself as dust particles are freed from the paper web as it passes through the machine. The paper machine room has multiple venting points to the atmosphere along the form and press sections and drying, coating, and winding sections. Paper Machine #2 is

not a permanently enclosed structure, so particulate dust is considered to be emitted fugitively within the building and in very low concentrations from building vents.

The Department found the following emission limits to represent BACT for PM, PM₁₀, and PM_{2.5} emissions from Paper Machine #2.

Unit	PM (lb/ADT)	PM ₁₀ (lb/ADT)	PM _{2.5} (lb/ADT)
Paper Machine #2	0.02	0.07	0.06

BACT also included a visible emission limit from paper machine building vents of 10% opacity on a six-minute block average basis.

Due to the difficulty in conducting performance testing for fugitive sources, compliance with the PM, PM₁₀ and PM_{2.5} emission limits shall be demonstrated by compliance with the visible emission limit. Compliance with the visible emission limit shall be demonstrated through performance testing in accordance with 40 C.F.R. Part 60, Appendix A, Method 9 upon request by the Department.

b. Volatile Organic Compounds (VOC)

VOC emissions from Paper Machine #2 are attributable to many different sources. Small amounts of VOC are present in the water carrying the pulp to the paper machines. The most often detected compound from this source is methanol, a byproduct of the chemical and mechanical pulping and bleaching processes. VOC are also present in papermaking additives (defoamers, slimicides, retention aids, wet strength agents, wire and felt cleaners, etc.) and may be released in the papermaking process.

The Department found an annual emission limit of 130.0 tpy (calendar year total basis) of VOC from Paper Machine #2 to represent BACT for emissions of VOC from Paper Machine #2.

Compliance shall be demonstrated by calculations of emissions based on actual chemical use assuming that 100% of the VOC is volatilized and emitted. This calculation method is considered conservative since many paper machine additives will react with the web substrate limiting VOC emissions to the unreacted portion only.

2. 40 C.F.R. Part 63, Subpart JJJJ

Federal regulation 40 C.F.R. Part 63, Subpart JJJJ, *National Emission Standards for Hazardous Air Pollutants: Paper and Other Web Coating*, applies to facilities that perform paper and other web coating operations. Paper Machine #2 makes only paper.

Sappi performs coating operations on Paper Machine #2. However, the coating is part of the sheet formation and on-machine operations and does not involve the application of coatings to any substrate other than the paper being produced. This is not expected to change with implementation of the 2023 PM#2 Rebuild Project. Pursuant to a letter dated November 19, 2003, from the U.S. EPA to Timothy Hunt of the American Forest and Paper Association, both size presses and on-machine coaters that function as part of the in-line papermaking system used to form the paper substrate are not subject to 40 C.F.R. Part 63, Subpart JJJJ requirements. Therefore, Subpart JJJJ does not apply to Paper Machine #2.

D. PM2 Coating Dryers

As part of the 2023 PM#2 Rebuild Project, Sappi will install two new blade coaters that use five natural gas-fired burners as part of the coating air dryers (PM2 Coating Dryers). The dryers consist of one OptiDry double-sided air dryer with one (1) 16.8 MMBtu/hr burner, one OptiDry high-intensity air dryer with two (2) 10.5 MMBtu/hr burners, and one OptiDry coating air dryer with two (2) 9.3 MMBtu/hr burners. The PM#2 Coating Dryers therefore have a combined maximum design heat input of 56.4 MMBtu/hr.

1. BACT

BACT for PM2 Coating Dryers was addressed in NSR #15.

a. Particulate Matter (PM, PM₁₀, PM_{2.5})

Sappi proposed to burn only a low-ash content fuel (natural gas) in the PM2 Coating Dryers. Additional add-on pollution controls are not economically feasible.

The Department found the use of natural gas as a fuel and the emission limits listed in the table below to represent BACT for PM, PM₁₀, and PM_{2.5} for the PM2 Coating Dryers.

b. Sulfur Dioxide (SO₂)

Sappi proposed to fire only natural gas, an inherently low-sulfur fuel. The use of this fuel results in minimal emissions of SO₂, and additional add-on pollution controls are not economically feasible.

The Department found the use of natural gas as a fuel and the emission limits listed in the table below to represent BACT for SO₂ for the PM2 Coating Dryers.

c. Nitrogen Oxides (NO_x)

The PM2 Coating Dryers will be equipped with ultra-low-NO_x burners (ULNBs) which minimize the formation of NO_x by improving fuel/air mixing. The use of additional add-on control technologies for natural gas-fired units of such a small size is not economically feasible.

The Department found the use of natural gas as a fuel, ULNBs, and the emission limits listed in the table below to represent BACT for NO_x for the PM2 Coating Dryers.

d. Carbon Monoxide (CO) and Volatile Organic Compounds (VOC)

Emissions of CO and VOC can be reduced by using oxidation catalysts or thermal oxidizers. Oxidation catalysts and thermal oxidizers both have high capital, maintenance, and operational costs considering the size of the emission unit in question. These controls were determined not to be economically feasible.

The Department found the use of natural gas as a fuel and the emission limits listed in the table below to represent BACT for CO and VOC for the PM2 Coating Dryers.

e. Greenhouse Gases (GHGs)

Sappi proposed to fire only natural gas in PM2 Coating Dryers and to follow good operating practices. Good operating practices include maintaining burners according to manufacturer recommendations, including conducting routine tune-ups, maintaining proper use of the burner management system, and conducting routine inspection and repair/replacement of key components. These practices will facilitate optimal performance of the burners and thereby minimize GHG emissions.

The Department found the use of natural gas as a fuel and employing good operating and maintenance practices to represent BACT for GHGs for the PM2 Coating Dryers.

f. Emission Limits

The BACT emission limits for the PM2 Coating Dryers were based on the following:

- PM – 1.9 lb/MMscf based on AP-42 Table 1.4-2 dated 7/98
- PM₁₀ / PM_{2.5} – 7.6 lb/MMscf (filterable + condensable) based on AP-42 Table 1.4-2 dated 7/98
- SO₂ – 0.6 lb/MMscf based on AP-42 Table 1.4-2 dated 7/98
- NO_x – 0.048 lb/MMBtu based on 06-096 C.M.R. ch. 115, BACT and manufacturer’s specifications for ULNBs
- CO – 0.074 lb/MMBtu based on manufacturer’s guaranteed emissions
- VOC – 5.5 lb/MMscf based on AP-42 Table 1.4-2 dated 7/98
- Visible Emissions – 06-096 C.M.R. ch. 115, BACT

The BACT emission limits for the PM2 Coating Dryers (all burners combined) are the following:

Unit	Pollutant	lb/MMBtu
PM2 Coating Dryers	PM	0.002

Unit	PM (lb/hr)	PM ₁₀ (lb/hr)	PM _{2.5} (lb/hr)	SO ₂ (lb/hr)	NO _x (lb/hr)	CO (lb/hr)	VOC (lb/hr)
PM2 Coating Dryers	0.11	0.42	0.42	0.03	2.71	4.17	0.30

Sappi shall demonstrate compliance with the emission limits above through performance testing upon request of the Department.

2. 40 C.F.R. Part 60, Subpart Dc

Due to not being “steam generating units,” the PM2 Coating Dryers are not subject to *Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units* 40 C.F.R. Part 60, Subpart Dc for units greater than 10 MMBtu/hr manufactured after June 9, 1989. [40 C.F.R. § 60.40c]

3. 40 C.F.R. Part 63, Subpart DDDDD

The PM2 Coating Dryers do not meet the definition of either *boiler* or *process heater* in 40 C.F.R. § 63.7575 since they are direct-fired heating sources where the combustion gases come into direct contact with the process materials. Therefore, the PM2 Coating Dryers are not subject to *National Emission Standards for Hazardous Air Pollutants*

for Major Sources: Industrial, Commercial, and Institutional Boilers and Process Heaters, 40 C.F.R. Part 63, Subpart DDDDD.

E. Changes to SO₂ Emission Limits

As part of NSR #15, Sappi was required to prepare and submit an Ambient Air Quality Impact Analysis. Based on preliminary results, Sappi determined that several changes to existing emission limits for SO₂ would be required. SO₂ emissions from the Lime Kiln, Recovery Boiler, and Power Boilers #1 and #2 are greatly influenced by the presence or absence of non-condensable pulp mill gases, including LVHC and HVLC gases, and the presence or absence of pulp mill kraft condensates (also known as turpentine).

Pursuant to *National Emission Standards for Hazardous Air Pollutants from the Pulp and Paper Industry*, 40 C.F.R. Part 63, Subpart S, the non-condensable gases and kraft condensates are required to be treated in control devices, which include boilers, lime kilns, and recovery boilers. Additionally, the LVHC gas collection system must have a primary and backup control strategy pursuant to *Total Reduced Sulfur Control from Kraft Pulp Mills*, 06-096 C.M.R. ch. 124.

Sappi proposed to change their control strategy for treatment of LVHC gases, HVLC gases, and kraft condensates as shown in Table II-1 below.

Table II-1: Proposed Control Strategy for Kraft Condensates and LVHC and HVLC Gases

Emission Unit	Current Control Strategy	Proposed Control Strategy
Lime Kiln	LVHC (primary) Kraft Condensates ^a	LVHC (primary) Kraft Condensates ^a
Recovery Boiler	LVHC HVLC	LVHC HVLC
Power Boiler #1	LVHC (secondary) HVLC (secondary) Kraft Condensates (primary)	LVHC (tertiary) HVLC (secondary) Kraft Condensates (secondary)
Power Boiler #2	LVHC ^a HVLC (primary) Kraft Condensates ^a	LVHC (secondary) HVLC (primary) Kraft Condensates (primary)

^a This emission unit is a licensed treatment device, but the necessary infrastructure is not yet in-place.

In making this control shift, Sappi proposed a new more stringent averaging period for the existing Power Boiler #1 SO₂ emission limit (744 lb/hr) which would be on a 3-hour block average basis rather than a 24-hour block average basis. Sappi also proposed a more stringent 3-hour block average SO₂ emission limit of 440 lb/hr for Power Boiler #2 which is currently subject to a 3-hour block average emission limit of 975 lb/hr.

Additionally, Sappi wished to maintain flexibility in utilizing Power Boiler #1 as a tertiary treatment option for LVHC gases and secondary treatment option for kraft condensates and HVLC gases. In such cases, Power Boiler #1 may exceed its proposed emission limit; however, a new proposed Main Stack emission limit of 1,230 lb/hr (3-hour block average basis) would apply and is the emission rate used to represent Power Boiler #1, Recovery Boiler, Lime Kiln, and Smelt Dissolving Tank emissions in the air dispersion model since each of these units exhaust through the Main Stack.

In rare instances, the Main Stack emissions rate could exceed 1,230 lb/hr (3-hour block average basis). For those instances, Sappi proposed to maintain the existing Main Stack SO₂ emission limit of 2,871 lb/hr but reduce the averaging time from a 24-hour block average basis to a 3-hour block average basis and also to limit the amount of time this alternative standard applies to no more than 500 hours/year. In accordance with EPA guidance¹, these intermittent emissions have been excluded from the air dispersion model.

The Department found the following proposed emission limits are necessary to demonstrate compliance with ambient air quality standards (AAQS) for SO₂ from Power Boiler #2, Power Boiler #1 and the Main Stack.

Power Boiler #1 shall not exceed an SO₂ emission rate of 744 lb/hr on a 3-hour block average basis, except when LVHC gases, HVLC gases, and/or kraft condensates are being fired in Power Boiler #1. During such periods, if the SO₂ emissions exceed 744 lb/hr on a 3-hour block average basis, Sappi shall report to the Department on a quarterly basis the SO₂ lb/hr 3-hour block emissions calculated as described below. During this period the following Main Stack SO₂ lb/hr limits shall apply.

Emissions of SO₂ from the Main Stack shall not exceed 1,230 lb/hr on a 3-hour block average basis except for periods of time when all of the following are met:

1. LVHC gases, HVLC gases, and/or kraft condensates are fired in Power Boiler #1 during the 3-hour block; and
2. Emissions of SO₂ from the Main Stack shall not exceed 2,871 lb/hr on a 3-hour block average basis; and
3. The period of time SO₂ emissions exceed 1,230 lb/hr on a 3-hour block shall not exceed 500 hours/year on a 12-month rolling total basis.

Compliance with the SO₂ emission limit applicable to Power Boiler #1 shall be demonstrated through use of an SO₂ Continuous Emissions Monitoring System (CEMS).

¹ U.S. EPA, Memorandum: *Additional Clarification Regarding Application of Appendix W Modeling Guidance for the 1-hour NO₂ National Ambient Air Quality Standard*, March 1, 2011
https://www.epa.gov/sites/default/files/2015-07/documents/appwno2_2.pdf

Compliance with the SO₂ emission limits applicable to the Main Stack shall be demonstrated by the sum of the SO₂ lb/hr 3-hour block emissions from the Power Boiler #1, Recovery Boiler, Smelt Dissolving Tanks #1 & #2, Lime Kiln, and Package Boiler (when the Package Boiler is venting through the Main Stack). The Recovery Boiler operates an SO₂ CEMS. To calculate the total SO₂ lb/hr 3-hour block emissions, Sappi may utilize the SO₂ license limit for the Smelt Dissolving Tanks #1 & #2, Lime Kiln, and Package Boiler or may calculate SO₂ emissions from the average firing rate and the sulfur content of the fuel fired during the 3-hour block period.

Power Boiler #2 shall not exceed an SO₂ emission rate of 440 lb/hr on a 3-hour block average basis.

These limits are in addition to, not in place of, those established pursuant to a BACT analysis. However, these limits are determined to be more stringent than the existing BACT limits. Therefore, the SO₂ emission limits for Power Boiler #1 and the Main Stack have been streamlined to the more stringent limit required by the NSR AAQS analysis and only the more stringent limits shall be included in this air emission license.

F. Changes to PM₁₀ and PM_{2.5} Limits

Several of Sappi's licensed emission units have PM₁₀ emission limits that are based on filterable particulate matter only. This is primarily due to the emission limits being established prior to the definition of PM₁₀ being revised to include condensable particulate matter (CPM). As part of NSR #15, Sappi proposed augmenting the existing PM₁₀ emission limits established through BACT to include the expected CPM. This change does not represent any increase in actual emissions only an update to the previously established BACT limits to address inclusion of CPM.

Additionally, these emission units do not yet have established emission limits for PM_{2.5}. As part of NSR #15, Sappi requested establishment of PM_{2.5} emission limits where none had previously existed.

The following tables outline the proposed new and revised emission limits and the associated compliance methods.

Table II-2: Existing PM₁₀ and PM_{2.5} Emission Limits

Emission Unit	Pollutant	Current Limit	Origin & Authority	Proposed Compliance Method
Power Boiler #1	PM ₁₀	220 lb/hr	06-096 C.M.R. ch. 115, BACT (A-19-71-K-A, 3/25/1994) (A-19-71-U-A, 6/7/1995)	Method 5
	PM _{2.5}	–	–	–
Power Boiler #2	PM ₁₀	0.03 lb/MMBtu 39 lb/hr	06-096 C.M.R. ch. 115, BACT (A-19-71-K-A, 3/25/1994) (A-19-71-U-A, 6/7/1995)	Method 5
	PM _{2.5}	–	–	–
Recovery Boiler	PM ₁₀	207 lb/hr ^a 283 lb/hr ^b	06-096 C.M.R. ch. 115, BACT (A-19-77-2-A, 6/2/2008)	Method 5
	PM _{2.5}	–	–	–
Smelt Dissolving Tanks #1 & #2	PM ₁₀	–	–	–
	PM _{2.5}	–	–	–
Lime Kiln	PM ₁₀	70 lb/hr ^c	06-096 C.M.R. ch. 115, BACT (A-19-77-7-A, 7/8/2013)	Methods 202 and 201A
	PM _{2.5}	70 lb/hr ^c		

^a When firing black liquor only.

^b When any oil is being fired.

^c When firing natural gas only.

Table II-3: Proposed New and Updated PM₁₀ and PM_{2.5} Emission Limits^d

Emission Unit	Pollutant	Proposed Limit	Origin & Authority	Proposed Compliance Method
Power Boiler #1	PM ₁₀	234.5 lb/hr	06-096 C.M.R. ch. 115, BACT	Methods 202 and 201A
	PM _{2.5}	157.5 lb/hr	06-096 C.M.R. ch. 115, § 7	
Power Boiler #2	PM ₁₀	0.047 lb/MMBtu 61.1 lb/hr	06-096 C.M.R. ch. 115, BACT	Methods 202 and 201A
	PM _{2.5}	60.4	06-096 C.M.R. ch. 115, § 7	
Recovery Boiler	PM ₁₀	216.2 lb/hr ^a 296.3 lb/hr ^b	06-096 C.M.R. ch. 115, BACT	Methods 202 and 201A
	PM _{2.5}	114.8 lb/hr ^a 129.4 lb/hr ^b	06-096 C.M.R. ch. 115, § 7	
Smelt Dissolving Tanks #1 & #2	PM ₁₀	36.9 lb/hr	06-096 C.M.R. ch. 115, § 7	Methods 202 and 201A
	PM _{2.5}	26.9 lb/hr		
Lime Kiln	PM ₁₀	70 lb/hr ^b	06-096 C.M.R. ch. 115, § 7	Methods 202 and 201A
		70 lb/hr ^c	06-096 C.M.R. ch. 115, BACT (A-19-77-7-A, 7/8/2013)	
	PM _{2.5}	70 lb/hr ^b	06-096 C.M.R. ch. 115, § 7	
		70 lb/hr ^c	06-096 C.M.R. ch. 115, BACT (A-19-77-7-A, 7/8/2013)	

^a When firing black liquor only.

^b When any oil is being fired.

^c When firing natural gas only.

^d Emission limits established pursuant to an ambient air quality analysis (06-096 C.M.R. ch. 115, § 7) are in addition to, not in place of, those established through BACT.

The new and updated emission limits were developed as described below:

1. Power Boiler #1

The previously established PM₁₀ emission limit was augmented to include CPM based on an emission factor of 0.017 lb/MMBtu from AP-42 Table 1.6-1 for biomass boilers. This emission factor is conservatively high compared to emission factors for CPM from firing oil.

The PM_{2.5} emission limit was based on assuming 65% of the filterable PM limit is filterable PM_{2.5} (see AP-42 Table 1.6-5 for biomass boilers utilizing an ESP) and adding CPM based on an emission factor of 0.017 lb/MMBtu (AP-42 Table 1.6-1).

2. Power Boiler #2

The previously established PM₁₀ emission limits were augmented to include CPM based on an emission factor of 0.017 lb/MMBtu (for CPM) from AP-42 Table 1.6-1 for biomass boilers. This emission factor is conservatively high compared to emission factors for CPM from firing oil.

The PM_{2.5} emission limit was based on assuming 98% of the filterable PM limit is filterable PM_{2.5} (see AP-42 Table 1.6-5 for biomass boilers utilizing a wet scrubber). This assumption is conservatively high because Power Boiler #2 is also controlled by an ESP. Emissions of CPM were then included based on an emission factor of 0.017 lb/MMBtu (AP-42 Table 1.6-1).

3. Recovery Boiler

The previously established PM₁₀ emission limit when firing black liquor solids (BLS) was augmented to include CPM based on an emission factor of 0.08 lb/ton BLS from NCASI TB 884² Table 4.12.

The previously established PM₁₀ emission limit when firing fuel oil was augmented to include CPM based on an emission factor of 1.5 lb/1,000 gallons from AP-42 Table 1.3-2.

² *Compilation of Criteria Air Pollutant Emissions Data for Sources at Pulp and Paper Mills Including Boilers* (August 2004)

The PM_{2.5} emission limit when firing BLS was based on assuming 51% of the filterable PM limit is filterable PM_{2.5} (see NCASI TB 884 Table 4.12). Emissions of CPM were then included based on an emission factor of 0.08 lb/ton BLS (see NCASI TB 884 Table 4.12).

The PM_{2.5} emission limit when firing fuel oil was based on assuming 41% of the filterable PM limit is filterable PM_{2.5} (see AP-42 Table 1.3-4 for residual oil-fired boilers utilizing an ESP). Emissions of CPM were then included based on an emission factor of 1.5 lb/1,000 gallons from AP-42 Table 1.3-2.

4. Smelt Dissolving Tanks #1 & #2

The PM₁₀ and PM_{2.5} emission limits are conservatively based on adding emissions of CPM to the existing filterable PM emission limit. CPM emissions were based on an emission factor of 0.0073 lb/ton BLS developed by averaging all results in Tables 4.1 and 4.2 of NCASI TB 898³.

5. Lime Kiln

The Lime Kiln has emission limits for PM₁₀ and PM_{2.5} when firing natural gas that were established in 2013 and are inclusive of CPM. However, the Lime Kiln is also licensed to fire fuel oil. Sappi proposed that the existing PM₁₀ and PM_{2.5} emission limits also apply at all times regardless of whether natural gas or fuel oil is being fired.

6. Determination

The Department found the proposed new and updated emission limits in Table II-3 either represent an administrative revision of BACT or are necessary to demonstrate compliance with ambient air quality standards (as indicated in Table II-3 above) for emissions of PM₁₀ and PM_{2.5} for the emission units listed.

Compliance shall be demonstrated pursuant to 40 C.F.R. Part 60, Appendix A, Methods 202 and 201A upon request by the Department.

G. Performance Test Protocol

For any performance testing required by this license, Sappi shall submit to the Department for approval a performance test protocol, as outlined in the Department's Performance Testing Guidance, at least 30 days prior to the scheduled date of the performance test. [06-096 C.M.R. ch. 115, BPT] The Department's Performance Testing Guidance is available online at: <https://www.maine.gov/dep/air/emissions/testing.html>.

³ *Condensable Particulate Matter Emissions from Sources Equipped with Wet Scrubbers* (March 2005)

H. Facility Annual Emissions

The table below provides an estimate of facility-wide annual emissions for the purposes of calculating the facility’s annual air license fee and establishing the facility’s potential to emit (PTE). Only licensed equipment is included, i.e., emissions from insignificant activities are excluded. Similarly, unquantifiable fugitive particulate matter emissions are not included except when required by state or federal regulations. Maximum potential emissions were calculated based on the following assumptions:

- All equipment except the Recovery Boiler and the emergency diesel engines each operating at the maximum lb/hr emission rate for 8,760 hours/year;
- Recovery Boiler operating at the maximum lb/hr emission rate for firing of black liquor only for 8,760 hours/year;
- SO₂ emissions from Power Boiler #1, Recovery Boiler, Smelt Tanks #1 and #2, and Lime Kiln are based on maximum licensed emissions from the Main Stack; and
- The emergency diesel engines operated for 100 hr/yr.

This information does not represent a comprehensive list of license restrictions or permissions. That information is provided in the Order section of this license.

Total Licensed Annual Emissions for the Facility
Tons/year
(used to calculate the annual license fee)

	PM	PM ₁₀	PM _{2.5}	SO ₂	NO _x	CO	VOC
Package Boiler	0.5	0.5	0.5	0.6	4.5	1.2	0.1
Power Boiler #1	963.6	1,027.1	689.9	–	1,309.6	9,942.6	60.0
Power Boiler #2	170.8	267.6	264.6	1,537.4	1,138.8	2,277.6	39.9
Recovery Boiler	906.7	947.0	502.8	–	3,285.0	13,634.9	65.7
Smelt Dissolving Tanks #1 & #2	113.9	161.6	117.8	–	--	--	--
Lime Kiln	254.0	306.6	306.6	–	254.0	254.0	43.8
Main Stack	–	–	–	5,797.7	–	–	–
Emergency Diesel Engines	–	–	–	–	2.2	0.5	0.2
Paper Machine #1	8.5	20.5	20.5	0.0	0.0	0.0	65.6
Paper Machine #1 Natural Gas Dryers	0.7	2.8	2.8	0.4	27.6	29.3	2.0
Paper Machine #2	5.2	18.2	15.6	–	–	–	130.0
Paper Machine #2 Coating Dryers	0.5	1.8	1.8	0.2	11.9	18.3	1.3
Total TPY	2,424.4	2,753.7	1,922.9	7,336.3	6,033.6	26,158.4	408.6

III. AMBIENT AIR QUALITY ANALYSIS

Sappi previously submitted an ambient air quality analysis demonstrating that emissions from the facility, in conjunction with all other sources, do not violate ambient air quality standards (see license A-19-77-15-A, issued on 9/7/2023). An additional ambient air quality analysis is not required for this Part 70 License.

ORDER

Based on the above Findings and subject to conditions listed below, the Department concludes that emissions from this source:

- will receive Best Practical Treatment;
- will not violate applicable emissions standards; and
- will not violate applicable ambient air quality standards in conjunction with emissions from other sources.

The Department hereby grants the Part 70 License Amendment A-19-70-H-A pursuant to 06-096 C.M.R. 140 and the preconstruction permitting requirements of *Major and Minor Source Air Emission License Regulations*, 06-096 C.M.R. ch. 115 and subject to the conditions found in Air Emission License A-19-70-E-R/A and the following conditions.

Federally enforceable conditions in this Part 70 license must be changed pursuant to the applicable requirements in 06-096 C.M.R. ch. 115 for making such changes and pursuant to the applicable requirements in 06-096 C.M.R. ch. 140.

For each specific condition which is state enforceable only, state-only enforceability is designated with the following statement: **Enforceable by State-only**.

Severability. The invalidity or unenforceability of any provision of this License Amendment or part thereof shall not affect the remainder of the provision or any other provisions. This License Amendment shall be construed and enforced in all respects as if such invalid or unenforceable provision or part thereof had been omitted.

SPECIFIC CONDITIONS

Upon completion of the Paper Machine #2 Rebuild Project, the following shall replace Condition (14)(C) of Air Emission License A-19-70-E-R/A:

(14) Facility Wide Limitations

C. Main Stack

1. Emissions of SO₂ from the Main Stack shall not exceed 1,230 lb/hr on a 3-hour block average basis except for periods of time when all of the following are met:
 - a. LVHC gases, HVLC gases, and/or kraft condensates are fired in Power Boiler #1 during the 3-hour block; and
 - b. Emissions of SO₂ from the Main Stack shall not exceed 2,871 lb/hr on a 3-hour block average basis; and
 - c. The period of time SO₂ emissions exceed 1,230 lb/hr on a 3-hour block shall not exceed 500 hours/year on a 12-month rolling total basis.
2. Compliance with the SO₂ emission limits applicable to the Main Stack shall be demonstrated by the sum of the SO₂ lb/hr 3-hour block emissions from the Power Boiler #1, Recovery Boiler, Smelt Dissolving Tanks #1 & #2, Lime Kiln, and Package Boiler (when the Package Boiler is venting through the Main Stack). The Recovery Boiler operates an SO₂ CEMS. To calculate the total SO₂ lb/hr 3-hour block emissions, Sappi may utilize the SO₂ license limit for the Smelt Dissolving Tanks #1 & #2, Lime Kiln, and Package Boiler or may calculate SO₂ emissions from the average firing rate and the sulfur content of the fuel fired during the 3-hour block period.

[06-096 C.M.R. ch. 115, § 7 (A-19-77-15-A, 9/7/2023)]

Upon completion of the Paper Machine #2 Rebuild Project, the following shall replace Conditions (16)(C) and (D) of Air Emission License A-19-70-E-R/A:

(16) Power Boiler #1

C. Emission Limits

Emissions from Power Boiler #1 shall not exceed the following limits. Unless otherwise specified, the averaging times for the emission limits in this table are based on the specified averaging time of the applicable test method for each pollutant.

Pollutant	Emission limit	Origin and Authority
PM	0.26 lb/MMBtu	06-096 C.M.R. ch. 115, BACT (A-19-71-A-A, 7/9/1986)
	0.44 lb/MMBtu Note (1)	40 C.F.R. Part 63, Subpart DDDDD, Table 2, Row 13.b.
	220 lb/hr	06-096 C.M.R. ch. 115, BACT (A-19-71-A-A, 7/9/1986)
PM ₁₀ Note (2)	234.5 lb/hr	06-096 C.M.R. ch. 115, BACT (A-19-77-15-A, 9/7/2023)
PM _{2.5} Note (2)	157.5 lb/hr	06-096 C.M.R. ch. 115, § 7 (A-19-77-15-A, 9/7/2023)
SO ₂	744 lb/hr on a 3-hour block average basis, except as specified below in Note (3)	06-096 C.M.R. ch. 115, § 7 (A-19-77-15-A, 9/7/2023)
NO _x	0.4 lb/MMBtu on a 30-day rolling average basis	A-19-70-A-I (12/2/2004), BPT
	299 lb/hour	06-096 C.M.R. ch. 115, BACT (A-19-71-K-A, 3/25/1994)
CO	2270 lb/hour	06-096 C.M.R. ch. 115, BACT (A-19-71-K-A, 3/25/1994)
	900 ppm _{dv} corrected to 3% oxygen on a 30-day rolling average basis	40 C.F.R. Part 63, Subpart DDDDD, Table 2, Row 13.a.
VOC	13.7 lb/hr	A-19-70-A-I (12/2/2004), BPT
HCl	0.022 lb/MMBtu (except during startup/shutdown)	40 C.F.R. 63, Subpart DDDDD, Table 2, Row 1.a and Table 3, Row 6.
Hg	5.7E-06 lb/MMBtu (except during startup/shutdown)	40 C.F.R. 63, Subpart DDDDD, Table 2, Row 1.b and Table 3, Row 6.
Visible Emissions	10% opacity on a daily block average or the highest hourly average opacity reading measured during the last NESHAP performance test. Note (4)	40 C.F.R. Part 63, Subpart DDDDD, Table 4, Row 4

Note (1): This limit applies at all times including periods of startup and shutdown.

Note (2): The PM₁₀ and PM_{2.5} limits include both filterable and condensable particulate matter.

Note (3): The SO₂ emission limit above applies at all times except for periods of time when LVHC gases, HVLC gases, and/or kraft condensates are fired in Power Boiler #1 during the 3-hour block. During such times, the Main Stack SO₂ emission limits apply. See Condition (14)(C). [06-096 C.M.R. ch. 115, § 7 (A-19-77-15-A, 9/7/2023)]

Note (4): Daily block average is the arithmetic mean of all valid emission concentrations or parameter levels recorded when a unit is operating measured over the 24-hour period from 12 a.m. (midnight) to 12 a.m. (midnight), except for periods of startup and shutdown or downtime.

D. Emission Limit Compliance Methods

Compliance with the emission limits associated with the Power Boiler #1 shall be demonstrated in accordance with the methods and frequencies indicated in the table below or other methods or frequencies as approved by the Department.

Pollutant	Emission Limit	Compliance Method	Frequency
PM	lb/MMBtu	40 C.F.R. Part 60, App. A, Method 5	Once every five calendar years or in accordance with 40 C.F.R. Part 63, Subpart DDDDD. Note (1)
	lb/hr	40 C.F.R. Part 60, App. A, Method 5	Once every five calendar years
PM ₁₀ /PM _{2.5}	lb/hr	40 C.F.R. Part 60, App. A, Methods 202 and 201A	As requested
SO ₂	lb/hr	SO ₂ CEMS	Continuously
NO _x	lb/MMBtu	NO _x CEMS	Continuously
	lb/hr	40 C.F.R. Part 60, App. A, Method 7	As requested
CO	ppmdv	CO CEMS	Continuously
	lb/hr	40 C.F.R. Part 60, App. A, Method 10	As requested
VOC	lb/hr	40 C.F.R. Part 60, App. A, Method 25 or 25A	As requested
HCl	lb/MMBtu	40 C.F.R. 63, Subpart DDDDD, Table 5 or Table 6	In accordance with 40 C.F.R. Part 63, Subpart DDDDD. Note (1)
Hg	lb/MMBtu	40 C.F.R. 63, Subpart DDDDD, Table 5 or Table 6	In accordance with 40 C.F.R. Part 63, Subpart DDDDD. Note (1)
Visible Emissions	% opacity	COMS located in the duct from the Power Boiler #1 to the Main Stack.	Continuously

Note (1) - In accordance with 40 C.F.R. § 63.7515, if performance tests for a given pollutant for at least two consecutive years show emissions at or below 75% of the emission limit for that pollutant and if there are no changes in operation of the boiler or air pollution control equipment that could increase emissions, Sappi may opt to conduct performance testing every third year on this unit. Such option and conditions shall be in accordance with the requirements and specifications of 40 C.F.R. § 63.7515.

Upon completion of the Paper Machine #2 Rebuild Project, the following shall replace Conditions (17)(B) and (C) of Air Emission License A-19-70-E-R/A:

(17) Power Boiler #2

B. Emission Limits

Emissions from the Power Boiler #2 shall not exceed the following limits. Unless otherwise specified, the averaging times for the emission limits in this table are based on the specified averaging time of the applicable test method for each pollutant.

Pollutant	Emission Limit	Origin and Authority
PM	0.03 lb/MMBtu	06-096 C.M.R. ch. 115, BACT (A-19-71-K-A, 3/25/1994)
	0.44 lb/MMBtu Note (1)	40 C.F.R. Part 63, Subpart DDDDD, Table 2, Row 13.b.
	39.0 lb/hr	06-096 C.M.R. ch. 115, BACT (A-19-71-K-A, 3/25/1994)
PM ₁₀ Note (2)	0.047 lb/MMBtu	06-096 C.M.R. ch. 115, BACT (A-19-77-15-A, 9/7/2023)
	61.1 lb/hr	06-096 C.M.R. ch. 115, § 7 (A-19-77-15-A, 9/7/2023)
PM _{2.5} Note (2)	60.4 lb/hr	06-096 C.M.R. ch. 115, BACT (A-19-77-15-A, 9/7/2023)
SO ₂	0.20 lb/MMBtu on a 30-day rolling average basis see Note (3)	A-19-77-13-M (2/24/2000), 40 C.F.R. § 60.42b(a)
	351.0 lb/hr on a 24-hour block average basis	06-096 C.M.R. ch. 115, BACT (A-19-71-K-A, 3/25/1994)
	440.0 lb/hr on a 3-hour block average basis	06-096 C.M.R. ch. 115, § 7 (A-19-77-15-A, 9/7/2023)
NO _x	0.2 lb/MMBtu on a 30-day rolling average basis	40 C.F.R. § 60.44b, A-19-71-K-A (3/25/1994)
	260 lb/hr on a 24-hour block average	06-096 C.M.R. ch. 115, BACT (A-19-71-K-A, 3/25/1994)
CO	900 ppm _{dv} corrected at 3% O ₂ on a 30-day rolling average basis	40 C.F.R. Part 63, Subpart DDDDD, Table 2
	0.40 lb/MMBtu on a 30-day rolling average	06-096 C.M.R. ch. 115, BACT (A-19-71-K-A, 3/25/1994)
	520 lb/hr, on a 24-hour block average basis	06-096 C.M.R. ch. 115, BACT (A-19-71-K-A, 3/25/1994)
VOC	0.007 lb/MMBtu	06-096 C.M.R. ch. 115, BACT (A-19-71-K-A, 3/25/1994)
	9.1 lb/hr	06-096 C.M.R. ch. 115, BACT (A-19-71-K-A, 3/25/1994)

Pollutant	Emission Limit	Origin and Authority
Visible Emissions	Not to exceed an opacity of 20 percent on a six (6) average, except for no more than one (1) six (6) minute period per hour of not more than 27% opacity	40 C.F.R. § 60.43b(f), A-19-71-K-A (3/25/94)
HCl	0.022 lb/MMBtu (except during startup/shutdown)	40 C.F.R. 63, Subpart DDDDD, Table 2 (1)(a) and Table 3, Row 6
Hg	5.7E-6 lb/hr (except during startup/shutdown)	40 C.F.R. 63, Subpart DDDDD, Table 2 (1)(b) and Table 3, Row 6

Note (1): This limit applies at all times including periods of startup and shutdown.

Note (2): The PM₁₀ and PM_{2.5} limits include both filterable and condensable particulate matter.

Note (3): A fossil fuel SO₂ outlet limit of 0.20 lb/MMBtu on a 30-day rolling average basis is required. This standard shall apply only to the firing of fuel oil. The calculations and procedures for maintaining compliance with the standard for mixed fuel boilers in 40 C.F.R. Part 60, Subpart Db §60.45b and shall be followed for compliance purposes.
[40 C.F.R. Part 60, Subpart Db]

C. Emission Limit Compliance Methods

Compliance with the emission limits for Power Boiler #2 shall be demonstrated in accordance with the methods and frequencies indicated in the table below or other methods or frequencies as approved by the Department.

Pollutant	Emission Limit	Compliance Method	Frequency
PM	lb/MMBtu	40 C.F.R. Part 60, App. A, Method 5	Once every five calendar years or in accordance with 40 C.F.R. Part 63, Subpart DDDDD Note (1)
	lb/hr	40 C.F.R. Part 60, App. A, Method 5	Once every five calendar years
PM ₁₀ /PM _{2.5}	lb/MMBtu and lb/hr	40 C.F.R. Part 60, App. A, Methods 202 and 201A	As requested
SO ₂	lb/hr and lb/MMBtu	SO ₂ CEMS	Continuously
NO _x	lb/MMBtu and lb/hr	NO _x CEMS	Continuously
CO	lb/MMBtu, lb/hr, and ppm _{dv}	CO CEMS	Continuously
VOC	lb/MMBtu and lb/hr	40 C.F.R. Part 60, App. A, Method 25 or 25A	As requested
HCl	lb/MMBtu	40 C.F.R. 63, Subpart DDDDD, Table 5 or Table 6	In accordance with 40 C.F.R. Part 63 Subpart DDDDD Note (1)
Hg	lb/MMBtu	40 C.F.R. 63, Subpart DDDDD, Table 5 or Table 6	In accordance with 40 C.F.R. Part 63 Subpart DDDDD Note (1)

Visible Emissions	% Opacity	40 C.F.R. Part 60, App. A, Method 9	As requested
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Note (1) In accordance with 40 C.F.R. § 63.7515, if performance tests for a given pollutant for at least two consecutive years show emissions at or below 75% of the emission limit for that pollutant and if there are no changes in operation of the boiler or air pollution control equipment that could increase emissions, Sappi may opt to conduct performance testing every third year on this unit. Such option and conditions shall be in accordance with the requirements and specifications of 40 C.F.R. § 63.7515.

Upon completion of the Paper Machine #2 Rebuild Project, the following shall replace Conditions (18)(B) and (C) of Air Emission License A-19-70-E-R/A:

(18) Recovery Boiler

B. Emission Limits

1. Emissions from the Recovery Boiler shall not exceed the following limits. Unless otherwise specified, the averaging times for the emission limits in this table are based on the specified averaging time of the applicable test method for each pollutant.

Pollutant	Licensed Emission Limit	Origin and Authority
PM	0.030 gr/dscf at 8% O ₂ when operating with 3 ESP chambers and firing only black liquor	06-096 C.M.R. ch. 115, BACT (A-19-77-2-A, 6/2/2008)
	0.038 gr/dscf at 8% O ₂ when operating with 2 ESP chambers and firing only black liquor	06-096 C.M.R. ch. 115, BACT (A-19-77-2-A, 6/2/2008) and 40 C.F.R. Part 63, Subpart MM, § 63.862(a)(1)(ii)
	207 lb/hr when firing only black liquor	06-096 C.M.R. ch. 115, BACT (A-19-77-2-A, 6/2/2008)
	283 lb/hr when firing oil alone or in combination with black liquor	06-096 C.M.R. ch. 115, BACT (A-19-77-2-A, 6/2/2008)
PM ₁₀ Note (1)	216.2 lb/hr when firing black liquor	06-096 C.M.R. ch. 115, BACT (A-19-77-15-A, 9/7/2023)
	296.3 lb/hr when firing oil alone or in combination with black liquor	06-096 C.M.R. ch. 115, BACT (A-19-77-15-A, 9/7/2023)
PM _{2.5} Note (1)	114.8 lb/hr when firing black liquor	06-096 C.M.R. ch. 115, § 7 (A-19-77-15-A, 9/7/2023)
	129.4 lb/hr when firing oil alone or in combination with black liquor	06-096 C.M.R. ch. 115, § 7 (A-19-77-15-A, 9/7/2023)
SO ₂	100 ppm _{dv} at 8% O ₂ , on a 30-day rolling average basis, when firing only black liquor	40 C.F.R. 51, BART (A-19-77-5-M, 11/2/2010)
	1,975 lb/hour on a 24-hour block average basis	06-096 C.M.R. ch. 115, BACT (A-19-77-2-A, 6/2/2008)

Pollutant	Licensed Emission Limit	Origin and Authority
NO _x	120 ppmdv at 8% O ₂ on a 30- day rolling average	06-096 C.M.R. ch. 115, BACT (A-19-77-2-A, 6/2/2008)
	750 lb/hr	06-096 C.M.R. ch. 115, BACT (A-19-77-2-A, 6/2/2008)
CO	500 ppmdv at 8% O ₂ on a 30- day rolling average basis, when firing only black liquor	06-096 C.M.R. ch. 115, BACT (A-19-77-2-A, 6/2/2008)
	3,113 lb/hr	06-096 C.M.R. ch. 115, BACT (A-19-77-2-A, 6/2/2008)
VOC	15 lb/hr	06-096 C.M.R. ch. 115, BACT (A-19-77-2-A, 6/2/2008)
TRS	5 ppmdv at 8% O ₂ , measured as H ₂ S, 12-hour block average basis, when firing only black liquor	06-096 C.M.R. ch. 124, Section 5(C)(1) and 40 C.F.R. Part 60, Subpart BB
Visible Emissions	Not to exceed 35 percent opacity on a six (6) minute average basis. Note (2)	06-096 C.M.R. ch. 115, BACT (A-19-77-2-A, 6/2/2008) and 40 C.F.R. Part 60, Subpart BB
	Not to exceed an opacity of 35 percent on a six (6) minute average basis. Note (3)	40 C.F.R. Part 63, Subpart MM

Note (1): The PM₁₀ and PM_{2.5} limits include both filterable and condensable particulate matter.

Note (2): Pursuant to 40 C.F.R. Part 60 Subpart § 60.284(e)(1), periods when opacity is greater than 35 percent shall not be indicative of a violation of 40 C.F.R. Part 60.11(d) provided that the percent of total excess emissions in a quarter does not exceed six percent for average opacities from the Recovery Boiler.

Note (3): Pursuant to 40 C.F.R. Part 63, Subpart 63.864(k)(2), visible emissions from the Recovery Boiler shall be in violation of the standards of 40 C.F.R. § 63.862 if the monitoring exceedances occur during times when spent pulping liquor is fed and opacity is greater than 35 percent for 2 percent or more of the operating time within a semiannual period.

- Compliance with the TRS ppmdv emission limit shall be determined on a 12-hour block average basis demonstrated by means of a CEMS, measured as H₂S. Pursuant to 06-096 C.M.R. ch. 124, Section 5(C)(1) and 40 C.F.R. Part 60.284(e)(1)(i), the first two 12-hour block averages in a quarter which exceed either license limits or emission standards in 06-096 C.M.R. ch. 124 are exempt and are not considered a violation.
 [06-096 C.M.R. ch. 124, 06-096 C.M.R. ch. 117, & 40 C.F.R. Part 60 Subpart BB]
- Sappi shall implement corrective action if opacity monitoring shows an average of 10 consecutive six-minute averages greater than 20% opacity.
 [40 C.F.R. Part 63, Subpart MM § 63.864(k)(1)(i)]

C. Emission Limit Compliance Methods

Compliance with the emission limits for the Recovery Boiler shall be demonstrated in accordance with the methods and frequencies indicated in the table below or other methods or frequencies as approved by the Department.

Pollutant	Emission Limit	Compliance Method	Frequency
PM	gr/dscf	40 C.F.R. Part 60, App. A, Method 5	Once every five calendar years or in accordance with 40 C.F.R. Part 63, Subpart MM Note (1)
PM	lb/hr	40 C.F.R. Part 60, App. A, Method 5	Once every five calendar years
PM ₁₀ /PM _{2.5}	lb/hr	40 C.F.R. Part 60, App. A, Methods 202 and 201A	As requested
SO ₂	ppmdv, and lb/hr	SO ₂ CEMS	Continuously
NO _x	ppmdv	NO _x CEMS	Continuously
	lb/hr	40 C.F.R. Part 60, App. A, Method 7	As requested
CO	ppmdv	CO CEMS	Continuously
	lb/hr	40 C.F.R. 60, App. A, Method 10	As requested
VOC	lb/hr	40 C.F.R. Part 60, App. A, Method 25 or 25A	As requested
TRS	ppmdv	TRS CEMS measured as H ₂ S	Continuously
Visible Emissions	% Opacity	COMS located in the duct for the Recovery Boiler to the Main Stack	Continuously

Note (1): Compliance testing for PM while firing black liquor and operating less than 3 chambers shall be performed once every 5 calendar years. [A-19-70-F-A (12/9/09)]

Upon completion of the Paper Machine #2 Rebuild Project, the following shall replace Conditions (19)(A) and (B) of Air Emission License A-19-70-E-R/A:

(19) Smelt Dissolving Tanks #1 & #2

A. Emission Limits

Combined emissions from the Smelt Dissolving Tanks #1 & #2 shall not exceed the following limits. Unless otherwise specified, the average times for the emission limits in this table are based on the specified averaging time of the applicable test method for each pollutant.

Pollutant	Emission Limit	Origin and Authority
PM	0.20 lb/ton BLS	40 C.F.R. Part 63, Subpart MM, 40 C.F.R. § 63.862(a)(1)(ii)
	26 lb/hr	06-096 C.M.R. ch. 115, BACT (A-19-71-K-A, 3/25/1994)
PM ₁₀ Note (1)	36.9 lb/hr	06-096 C.M.R. ch. 115, § 7 (A-19-77-15-A, 9/7/2023)
PM _{2.5} Note (1)	26.9 lb/hr	06-096 C.M.R. ch. 115, § 7 (A-19-77-15-A, 9/7/2023)
SO ₂	26 lb/hr	06-096 C.M.R. ch. 115, BACT (A-19-71-K-A, 3/25/1994)
TRS	0.033 lb/ton BLS, measured as H ₂ S	06-096 C.M.R. ch. 124

Note (1): The PM₁₀ and PM_{2.5} limits include both filterable and condensable particulate matter.

B. Emission Limit Compliance Methods

Compliance with the emission limits associated with Smelt Dissolving Tanks #1 & #2 shall be demonstrated on combined emissions in accordance with the methods and frequencies indicated in the table below or other methods or frequencies as approved by the Department.

Pollutant	Emission Limit	Compliance Method	Frequency
PM	lb/ton BLS	40 C.F.R. Part 60, App. A, Method 5	In accordance with 40 C.F.R. Part 63, Subpart MM
	lb/hr	40 C.F.R. Part 60, App. A, Method 5	As requested
PM ₁₀ /PM _{2.5}	lb/hr	40 C.F.R. Part 60, App. A, Methods 202 and 201A	As requested
SO ₂	lb/hr	40 C.F.R. Part 60, App. A, Method 6	As requested
TRS	lb/ton BLS measured as H ₂ S	40 C.F.R. part 60, App. A, Method 16	Once every two calendar years

Upon completion of the Paper Machine #2 Rebuild Project, the following shall replace Condition (20)(B)(1) of Air Emission License A-19-70-E-R/A:

(20) Lime Kiln

B. Emission Limits

1. Emissions from the Lime Kiln shall not exceed the following limits. Unless otherwise specified, the averaging times for the emission limits in this table are based on the specified averaging time of the applicable test method for each pollutant:

Pollutant	Licensed Emission Limits	Origin and Authority
PM	0.100 gr/dscf at 10% O ₂	06-096 C.M.R. ch. 115, BACT (A-19-77-7-A, 7/8/2013) 40 C.F.R. Part 63, Subpart MM, § 63.862(a)(1)(ii)
	58 lb/hr	06-096 C.M.R. ch. 115, BACT (A-19-77-7-A, 7/8/2013)
PM ₁₀	70 lb/hr firing natural gas	06-096 C.M.R. ch. 115, BACT (A-19-77-7-A, 7/8/2013)
	70 lb/hr firing any oil	06-096 C.M.R. ch. 115, § 7 (A-19-77-15-A, 9/7/2023)
PM _{2.5}	70 lb/hr firing natural gas	06-096 C.M.R. ch. 115, BACT (A-19-77-7-A, 7/8/2013)
	70 lb/hr firing any oil	06-096 C.M.R. ch. 115, § 7 (A-19-77-15-A, 9/7/2023)
SO ₂	100 TPY, on a 12-month rolling total basis	40 C.F.R. Part 51, BART (A-19-77-5-M, 11/2/2010)
	75 lb/hr	06-096 C.M.R. ch. 115, BACT (A-19-77-7-A, 7/8/2013)
NO _x	120 ppmvw at 10% O ₂	06-096 C.M.R. ch. 138
	58 lb/hr	06-096 C.M.R. ch. 115, BACT (A-19-77-7-A, 7/8/2013)
CO	58 lb/hr	06-096 C.M.R. ch. 115, BACT (A-19-71-F-A, 8/23/1989)
VOC	10 lb/hr	06-096 C.M.R. ch. 115, BACT (A-19-77-7-A, 7/8/2013)
TRS	20 ppmdv at 10% O ₂ measured as H ₂ S, on a 12-hour block average basis	06-96 C.M.R. ch. 124

The following shall replace Condition (30) of Air Emission License A-19-70-E-R/A:

(30) **Paper Machine #1 and On-Machine Coaters**

- A. The maximum heat input of the Paper Machine #1 size press dryer and coating dryers equipped with natural gas-fired burners shall not exceed the following:

Equipment	Maximum Capacity (MMBtu/hr)
Size Press Dryer	18.5
High Intensity Coating Dryer #1	10.2
Opti Dry Coating Dryer #1	11.6
High Intensity Coating Dryer #2	10.2
Opti Dry Coating Dryer #2	11.6
High Intensity Coating Dryer #3	10.2
Opti Dry Coating Dryer #3	11.6

[06-096 C.M.R. ch. 115, BACT (A-19-77-11-A, 4/20/2017)]

- B. The combined emissions from the combustion of natural gas in the Paper Machine #1 size press dryer and coating dryers shall not exceed the following:

Pollutant	Emission Limit (lb/hr)
PM	0.16
PM ₁₀	0.63
PM _{2.5}	0.63
SO ₂	0.084
NO _x	6.3
CO	6.7
VOC	0.46

[06-096 C.M.R. ch. 115, BACT (A-19-77-11-A, 4/20/2017)]

- C. Visible Emissions from each of the size press natural gas dryer exhausts and each of the coating natural gas dryer exhausts shall not exceed an opacity of 10 percent on a six-minute block average basis. Compliance shall be demonstrated through performance testing in accordance with 40 C.F.R. Part 60, Appendix A, Method 9 upon request by the Department [06-096 C.M.R. ch. 115, BACT (A-19-77-11-A, 4/20/2017)]
- D. Sappi shall use good combustion practices, fire natural gas, and use Low NO_x burners on the Paper Machine #1 size press and coating dryers. [06-096 C.M.R. ch. 115, BACT (A-19-77-11-A, 4/20/2017)]

- E. Emissions of VOC from Paper Machine #1 shall not exceed 65.6 tpy (calendar year total basis). Compliance shall be demonstrated by calculations of emissions based on actual chemical use assuming that 100% of the VOC is volatilized and emitted. [06-096 C.M.R. ch. 115, BACT (A-19-77-14-A, 2/4/2022)]
- F. Sappi shall maintain records of production and additives and coating used in the paper or substrate formation associated with Paper Machine #1. Annual production, PM, PM₁₀, and VOC emissions based on site specific and industry emission factors are to be reported in the annual emissions reporting required by 06-096 C.M.R. ch. 137, *Emission Statements*. [06-096 C.M.R. ch. 115 (A-19-77-14-A, 4/2/2022)]

The following are New Conditions that shall take effect following completion of the Paper Machine #2 Rebuild Project:

(53) Paper Machine #2

- A. Sappi shall submit to the Department notification of the date of completion of the Paper Machine #2 Rebuild Project within 30 days of occurrence. [06-096 C.M.R. ch. 115, BACT (A-19-77-15-A, 9/7/2023)]
- B. Emissions shall not exceed the following [06-096 C.M.R. ch. 115, BACT (A-19-77-15-A, 9/7/2023)]:

Unit	PM (lb/ADT)	PM ₁₀ (lb/ADT)	PM _{2.5} (lb/ADT)
Paper Machine #2	0.02	0.07	0.06

To demonstrate compliance to the particulate emissions limits above, Sappi shall comply with the visible emission standard listed below.

- C. Visible emissions from the paper machine building vents shall not exceed 10% opacity on a six-minute block average basis. Compliance shall be demonstrated through performance testing in accordance with 40 C.F.R. Part 60, Appendix A, Method 9 upon request by the Department. [06-096 C.M.R. ch. 115, BACT (A-19-77-15-A, 9/7/2023)]
- D. Emissions of VOC from Paper Machine #2 shall not exceed 130.0 tpy (calendar year total basis). Compliance shall be demonstrated by calculations of emissions based on actual chemical use assuming that 100% of the VOC is volatilized and emitted. [06-096 C.M.R. ch. 115, BACT (A-19-77-15-A, 9/7/2023)]
- E. Sappi shall maintain records of production and additives and coatings used in the paper or substrate formation associated with Paper Machine #2. Annual production, PM, PM₁₀, PM_{2.5}, and VOC emissions based on site specific and industry emission factors

are to be reported in the annual emissions reporting as required by 06-096 C.M.R. ch. 137, *Emission Statements*.

(54) **PM2 Coating Dryers**

- A. The PM2 Coating Dryers shall each fire only natural gas. [06-096 C.M.R. ch. 115, BACT (A-19-77-15-A, 9/7/2023)]
- B. The PM2 Coating Dryers shall each be equipped with ultra-low-NO_x burners. Sappi shall maintain the burners according to manufacturer recommendations, including conducting routine tune-ups, maintaining proper use of the burner management system, and conducting routine inspections and repair/replacement of key components. [06-096 C.M.R. ch. 115, BACT (A-19-77-15-A, 9/7/2023)]
- C. Emissions shall not exceed the following [06-096 C.M.R. ch. 115, BACT (A-19-77-15-A, 9/7/2023)]:

Unit	Pollutant	lb/MMBtu
PM2 Coating Dryers	PM	0.002

Compliance shall be demonstrated through performance testing upon request by the Department.

- D. Emissions from all PM2 Coating Dryer burners shall not exceed the following [06-096 C.M.R. ch. 115, BACT (A-19-77-15-A, 9/7/2023)]:

Unit	PM (lb/hr)	PM ₁₀ (lb/hr)	PM _{2.5} (lb/hr)	SO ₂ (lb/hr)	NO _x (lb/hr)	CO (lb/hr)	VOC (lb/hr)
PM2 Coating Dryers	0.11	0.42	0.42	0.03	2.71	4.17	0.30

Compliance shall be demonstrated through performance testing upon request by the Department.

- E. Visible emissions from the PM2 Coating Dryers shall not exceed 10% opacity on a six-minute block average basis. Compliance shall be demonstrated through performance testing in accordance with 40 C.F.R. Part 60, Appendix A, Method 9 upon request by the Department. [06-096 C.M.R. ch. 115, BACT (A-19-77-15-A, 9/7/2023)]

- (55) If the Department determines that any parameter value pertaining to construction and operation of the emissions units, including but not limited to stack size, configuration, flow rate, emission rates, nearby structures, etc., deviates from what was submitted in the application or ambient air quality impact analysis for this air emission license, Sappi may be required to submit additional information. Upon written request from the Department, Sappi shall provide information necessary to demonstrate AAQS will not be exceeded, potentially including submission of an ambient air quality impact analysis or an application to amend this air emission license to resolve any deficiencies and ensure compliance with AAQS. Submission of this information is due within 60 days of the Department's written request unless otherwise stated in the Department's letter.
[06-096 C.M.R. ch. 115, § 2(O)]

DONE AND DATED IN AUGUSTA, MAINE THIS 1st DAY OF NOVEMBER, 2023.

DEPARTMENT OF ENVIRONMENTAL PROTECTION

BY:  for
MELANIE LOYZIM, COMMISSIONER

The term of this amendment shall be concurrent with the term of Air Emission License A-19-70-E-R/A.

PLEASE NOTE ATTACHED SHEET FOR GUIDANCE ON APPEAL PROCEDURES

Date of initial receipt of application: 4/7/2023

Date of application acceptance: 4/10/2023

Date filed with the Board of Environmental Protection:

This Order prepared by Lynn Muzzey, Bureau of Air Quality.

