

AIR EMISSION PERMIT NO. 00700019- 001

IS ISSUED TO

NORBORD USA INC. C/O NORBORD MINNESOTA

Nexfor (USA) Inc.
Norbord Minnesota
4409 Northwood Road Northwest
Solway, Beltrami County, MN 56678

The emission units, control equipment and emission stacks at the stationary source authorized in this permit are as described in the following permit application(s):

Permit Type	Application Date
Total Facility Operating Permit	November 15, 1995
PSD Permit Application	May 30, 2001
Update to Title V Permit Application	July 16, 2002

This permit authorizes the Permittee to operate and construct the stationary source at the address listed above unless otherwise noted in Table A. The Permittee must comply with all the conditions of the permit. Any changes or modifications to the stationary source must be performed in compliance with Minn. R. 7007.1150 to 7007.1500. Terms used in the permit as defined in the state air pollution control rules unless the term is explicitly defined in the permit.

Permit Type: Federal; Pt 70/NSR Authorization

Issue Date: May 11, 2004

Expiration: May 11, 2009
All Title I Conditions do not expire.

Ann M. Foss
Major Facilities Section Manager
Majors and Remediation Division

for Sheryl Corrigan
Commissioner
Minnesota Pollution Control Agency

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NOTICE TO THE PERMITTEE:

Your stationary source may be subject to the requirements of the Minnesota Pollution Control Agency's (MPCA) solid waste, hazardous waste, and water quality programs. If you wish to obtain information on these programs, including information on obtaining any required permits, please contact the MPCA general information number at:

Metro Area	(651) 296-6300
Outside Metro Area	1-800-657-3864
TTY	(651) 282-5332

The rules governing these programs are contained in Minn. R. chs. 7000-7105. Written questions may be sent to: Minnesota Pollution Control Agency, 520 Lafayette Road North, St. Paul, Minnesota 55155-4194.

Questions about this air emission permit or about air quality requirements can also be directed to the telephone numbers and address listed above.

PERMIT SHIELD:

Subject to the limitations in Minn. R. 7007.1800, compliance with the conditions of this permit shall be deemed compliance with the specific provision of the applicable requirement identified in the permit as the basis of each condition. Subject to the limitations of Minn. R. 7007.1800 and 7017.0100, subp. 2, notwithstanding the conditions of this permit specifying compliance practices for applicable requirements, any person (including the Permittee) may also use other credible evidence to establish compliance or noncompliance with applicable requirements.

FACILITY DESCRIPTION:

Northwood Panelboard Company owns and operates an Oriented Strandboard (OSB) manufacturing facility in Beltrami County, Minnesota; the facility is located approximately 10 miles west of Bemidji, Minnesota. To produce OSB, logs are sliced into small strands, which are then dried, blended with a phenol-formaldehyde resin and wax mixture, formed into layers, and finally pressed into wood panels. The equipment used for the process consists of two rotary drum dryers with two wood-fired Lamb burners, one flatline conveyor dryer with a Wellons wood-fired burner, one multi-opening board press, two Konus wood-fired burners which are the heat source for the press, and various handling, finishing, and forming processes.

The pollution control equipment and main pollutants of concern from the emission units at the facility are as follows: the two rotary dryers and Lamb burners are sources of particulate matter (PM and PM₁₀), Volatile Organic Compounds (VOCs), Carbon Monoxide (CO), and Nitrogen Oxides (NO_x). The dryers/Lamb burners are currently controlled by an Electrified Filter Bed (EFB) which controls particulate matter. The conveyor dryer and Wellons burner are also sources of PM, PM₁₀, VOC, CO and NO_x. The press is uncontrolled and is primarily a source of VOC. The Konus burners are sources of PM, PM₁₀, VOC, CO and NO_x and are each controlled by multiclones and an EFB. The in-plant particulate sources are generally controlled by baghouses. There are also fugitive particulate sources such as bark and fuel piles and paved and unpaved roads.

This permit incorporates limits and control requirements resulting from a backwards-PSD analysis performed by the Permittee, as submitted in May 2001 and as updated in July 2002 and January 2003. The Permittee will install a Regenerative Thermal Oxidizer (RTO) on the rotary dryers/Lamb burners, primarily for control of VOC, but also for control of PM and CO. The RTO will be in place following a particulate control device, either a new EFB or a Wet Electrostatic Precipitator (WESP). The WESP or EFB, and RTO are to be installed within 18 months of issuance of this Title V permit. BACT limits for PM, PM₁₀, VOC, CO and NO_x have been established as applicable on the rotary dryers/Lamb burners, Konus burners, board press, and various operations such as sawing and forming which are currently controlled by baghouses. The conveyor dryer system was installed as authorized in a PSD permit issued in 1995.

TABLE A: LIMITS AND OTHER REQUIREMENTS

05/12/04

Facility Name: Northwood Panelboard Co

Permit Number: 00700019 - 001

Table A contains limits and other requirements with which your facility must comply. The limits are located in the first column of the table (What To do). The limits can be emission limits or operational limits. This column also contains the actions that you must take and the records you must keep to show that you are complying with the limits. The second column of Table A (Why to do it) lists the regulatory basis for these limits. Appendices included as conditions of your permit are listed in Table A under total facility requirements.

Subject Item:**Total Facility**

What to do	Why to do it
FACILITY LIMIT	hdr
Process Throughput: greater than or equal to 95 percent using 12-month Rolling Average of hardwood as furnish.	Title I Condition: 40 CFR Section 52.21(j) (BACT limit for EU 012 - press); Minn. R. 7007.3000
Daily Recordkeeping. Once each day of operation, the Permittee shall calculate, record, and maintain the total quantity and type (i.e. hardwood, softwood) of wood furnish used at the facility. This shall be based on usage records.	Title I Condition: Monitoring for BACT limit; Minn. R. 7007.0800. subp. 4 and 5
Monthly Recordkeeping -- Hardwood Furnish Usage. By the 15th of the month, the Permittee shall calculate and record the following: 1) The total usage of furnish, and percentage of hardwood furnish for the previous calendar month using the daily usage records. 2) The 12 month rolling average percentage hardwood furnish usage for the previous 12 month period.	Minn. R. 7007.0800, subp. 4 and 5
ON-SITE ROAD SILT LOADING MEASUREMENT	hdr
1. Within 180 days of permit issuance, measure the silt loading on the facility's on-site paved roads. Follow the notification and reporting requirements applicable to stack emissions testing given below as part of FC (total facility) requirements. The measurements shall be made according to the applicable ASTM method, and shall be agreed upon between the Agency and Northwood prior to the testing. The testing is for information gathering purposes.	Minn. R. 7009
2. If the measured silt loading is less than or equal to the silt loading assumed in the most recent dispersion modeling analysis on record with the Agency, no further action is required.	
3. If the measured silt loading is more than the silt loading assumed in the most recent dispersion modeling analysis on record, Northwood shall submit a proposed compliance plan to the Agency within 45 days after the submittal of the silt measurements. The compliance plan will outline the Permittee's proposed plan and timetable and shall be submitted to the Commissioner for approval. The purpose of the plan will be to show compliance with all ambient standards and increments.	Minn. R. 7009
4. The proposed compliance plan may include additional on-site road silt loading measurements, additional dispersion modeling, and/or mitigative controls (such as sweeping, flushing, vacuuming, etc.).	
MODELING REQUIREMENTS	hdr
Parameters Used in Modeling: The stack heights, emission rates, and other parameters used in the modeling are listed in Appendix C of this permit. The Permittee must submit to the Commissioner for approval any revisions of these parameters and must wait for a written approval before making such changes. The information submitted must include, at a minimum, the locations, heights and diameters of the stacks, locations and dimensions of nearby buildings, the velocity and temperatures of the gases emitted, and the emission rates. The plume dispersion characteristics due to the revisions of the information must be equivalent to or better than the dispersion characteristics modeled as part of this permit. The Permittee shall demonstrate this equivalency in the proposal. If the information does not demonstrate equivalent or better dispersion characteristics, or if a conclusion cannot readily be made about the dispersion, the Permittee must remodel.	Title I Condition: 40 CFR Section 52.21(k); Minn. R. 7007.3000

TABLE A: LIMITS AND OTHER REQUIREMENTS

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Facility Name: Northwood Panelboard Co

Permit Number: 00700019 - 001

<p>For changes that do not involve an increase in an emission rate and that do not require a permit amendment, this proposal must be submitted as soon as practicable, but no less than 60 days before beginning actual construction of the stack or associated emission unit.</p> <p>For changes involving increases in emission rates and that require a minor permit amendment, the proposal must be submitted as soon as practicable, but no less than 60 days before beginning actual construction of the stack or associated emission unit.</p> <p>For changes involving increases in emission rates and that require a permit amendment other than a minor amendment, the proposal must be submitted with the permit application.</p> <p>For any physical change to or change in the method of operation of a stack emitting PM10 or for any increase in PM10 emissions (whether or not the increase would require a permit amendment of any type), the Permittee may be required to remodel, subject to the Agency's approval.</p>	<p>Title I Condition: 40 CFR Section 52.21(k); Minn. R. 7007.3000</p>
<p>Property Line Fencing: the Permittee shall maintain the fencing and gates which have previously been installed to enclose the boundaries of the property. The property shall be enclosed with a continuous fence, excluding access points, and shall have installed gates or a guard at each access point, except as described below. The Permittee shall thereafter keep the gates closed unless: 1) A guard is present controlling access at a gate; or 2) Authorized persons are entering or leaving the property through a gate. Access points such as a railroad shall be patrolled and shall be posted with "No Trespassing" signs. The Permittee shall inspect the fencing and gates once per year to ensure compliance with access control. The Permittee shall complete all repairs and maintenance to the fencing and gates as soon as possible but no later than 30 days after the Permittee observes the need for repair or maintenance.</p>	<p>Minn. R. 7007.0800, subp. 2</p>
<p>CLEAN UNITS</p>	<p>hdr</p>
<p>Report of loss of Clean Unit status: The Permittee shall submit written notification of a deviation to the MPCA if Clean Unit status is lost due to noncompliance with 40 CFR Section 52.21(x)(7). The permittee shall report the deviation on the Semiannual Deviations Report (see Table B) and also according to the schedule in the permit for "Deviations Endangering Human Health or the Environment" (see Table A, Total Facility Requirements) if applicable. The permittee and the Agency shall attach a copy of the notification to the permit, and the permittee shall submit an application for a major amendment within 30 days of loss of Clean Unit status.</p>	<p>Title I Condition; 40 CFR Section 52.21(x)(7); Minn. R. 7007.3000</p>
<p>Loss of Clean Unit status occurs if any of the following occur:</p> <ul style="list-style-type: none"> - the permittee fails to comply with the emission limit or work practice(s) specified in the permit with the Clean Unit Designation, - the permittee makes any physical or operational change to the Clean Unit that causes the unit to operate in a manner inconsistent with any physical or operational characteristic that is part of the basis for the Clean Unit Designation - the permittee fails to comply with any term in the permit that is related to the Clean Unit Designation. 	<p>Title I Condition; 40 CFR Section 52.21(x)(7); Minn. R. 7007.3000</p>
<p>Loss of Clean Unit status: The Permittee shall submit an application for a major amendment if a modification at a Clean Unit will cause loss of Clean Unit status. The Permittee may not begin actual construction on the modification until the major amendment has been issued. Loss of Clean Unit status occurs when the major amendment is issued or if the permittee begins actual construction on a change to the Clean Unit without obtaining a permit for the change and the change causes a need to change the emission limit or work practices or changes any physical or operational characteristic that is part of the basis for determining that the control is comparable to BACT. The Permittee must use the calculation methodologies in 40 CFR Section 52.21(a)(2)(iv) to determine applicability of 40 CFR Section 52.21 for this modification and all subsequent modifications until the unit requalifies for Clean Unit status.</p>	<p>Title I Condition; 40 CFR Section 52.21(x)(2)(iii) and (iv); Minn. R. 7007.3000</p>
<p>OPERATIONAL REQUIREMENTS</p>	<p>hdr</p>
<p>Circumvention: Do not install or use a device or means that conceals or dilutes emissions, which would otherwise violate a federal or state air pollution control rule, without reducing the total amount of pollutant emitted.</p>	<p>Minn. R. 7011.0020</p>
<p>Air Pollution Control Equipment: Operate all pollution control equipment whenever the corresponding process equipment and emission units are operated, unless otherwise noted in Table A.</p>	<p>Minn. R. 7007.0800, subp. 2; Minn. R. 7007.0800, subp. 16(J)</p>
<p>Operation and Maintenance Plan: Retain at the stationary source an operation and maintenance plan for all air pollution control equipment.</p>	<p>Minn. R. 7007.0800, subp. 14 and Minn. R. 7007.0800, subp. 16(J)</p>

TABLE A: LIMITS AND OTHER REQUIREMENTS

05/12/04

Facility Name: Northwood Panelboard Co

Permit Number: 00700019 - 001

Operation Changes: In any shutdown, breakdown, or deviation the Permittee shall immediately take all practical steps to modify operations to reduce the emission of any regulated air pollutant. The Commissioner may require feasible and practical modifications in the operation to reduce emissions of air pollutants. No emissions units that have an unreasonable shutdown or breakdown frequency of process or control equipment shall be permitted to operate.	Minn. R. 7019.1000, subp. 4
Fugitive Emissions: Do not cause or permit the handling, use, transporting, or storage of any material in a manner which may allow avoidable amounts of particulate matter to become airborne. Comply with all other requirements listed in Minn. R. 7011.0150.	Minn. R. 7011.0150
Noise: The Permittee shall comply with the noise standards set forth in Minn. R. 7030.0010 to 7030.0080 at all times during the operation of any emission units. This is a state only requirement and is not enforceable by the EPA Administrator or citizens under the Clean Air Act.	Minn. R. 7030.0010 - 7030.0080
Inspections: The Permittee shall comply with the inspection procedures and requirements as found in Minn. R. 7007.0800, subp. 9(A).	Minn. R. 7007.0800, subp. 9(A)
The Permittee shall comply with the General Conditions listed in Minn. R. 7007.0800, subp. 16.	Minn. R. 7007.0800, subp. 16
PERFORMANCE TESTING	hdr
Performance Testing: Conduct all performance tests in accordance with Minn. R. ch. 7017 unless otherwise noted in Tables A, B, and/or C.	Minn. R. ch. 7017
Performance Test Notifications and Submittals: Performance Tests are due as outlined in Tables A and B of the permit. See Table B for additional testing requirements. Performance Test Notification (written): due 30 days before each Performance Test Performance Test Plan: due 30 days before each Performance Test Performance Test Pre-test Meeting: due 7 days before each Performance Test Performance Test Report: due 45 days after each Performance Test Performance Test Report - Microfiche Copy: due 105 days after each Performance Test	Minn. R. 7017.2030, subp. 1-4 and Minn. R. 7017.2035, subp. 1-2
Limits set as a result of a performance test (conducted before or after permit issuance) apply until superseded as specified by Minn. R. 7017.2025 following formal review of a subsequent performance test on the same unit.	Minn. R. 7017.2025
MONITORING REQUIREMENTS	hdr
Monitoring Equipment: Install or make needed repairs to monitoring equipment within 60 days of issuance of the permit if monitoring equipment is not installed and operational on the date the permit is issued. Within 60 days of issuance of this permit, implement new monitoring requirements and procedures as required by this permit.	Minn. R. 7007.0800, subp. 4(D)
Monitoring Equipment Calibration: Annually calibrate all required monitoring equipment (any requirements applying to continuous emission monitors are listed separately in this permit).	Minn. R. 7007.0800, subp. 4(D)
Operation of Monitoring Equipment: Unless otherwise noted in Tables A, B, and/or C, monitoring a process or control equipment connected to that process is not necessary during periods when the process is shutdown, or during checks of the monitoring systems, such as calibration checks and zero and span adjustments. If monitoring records are required, they should reflect any such periods of process shutdown or checks of the monitoring system.	Minn. R. 7007.0800, subp. 4(D)
RECORDKEEPING	hdr
Recordkeeping: Maintain records describing any insignificant modifications (as required by Minn. R. 7007. 1250, subp. 3) or changes contravening permit terms (as required by Minn. R. 7007.1350 subp. 2), including records of the emissions resulting from those changes.	Minn. R. 7007. 0800, subp. 5(B)
Record keeping: Retain all records at the stationary source for a period of five (5) years from the date of monitoring, sample, measurement, or report. Records which must be retained at this location include all calibration and maintenance records, all original recordings for continuous monitoring instrumentation, and copies of all reports required by the permit. Records must conform to the requirements listed in Minn. R. 7007.0800, subp. 5(A).	Minn. R. 7007.0800, subp. 5(C)
REPORTING/SUBMITTALS	hdr

TABLE A: LIMITS AND OTHER REQUIREMENTS

05/12/04

Facility Name: Northwood Panelboard Co

Permit Number: 00700019 - 001

<p>Shutdown Notifications: Notify the Commissioner at least 24 hours in advance of a planned shutdown of any control equipment or process equipment if the shutdown would cause any increase in the emissions of any regulated air pollutant. If the owner or operator does not have advance knowledge of the shutdown, notification shall be made to the Commissioner as soon as possible after the shutdown. However, notification is not required in the circumstances outlined in Items A, B and C of Minn. R. 7019.1000, subp. 3.</p> <p>At the time of notification, the owner or operator shall inform the Commissioner of the cause of the shutdown and the estimated duration. The owner or operator shall notify the Commissioner when the shutdown is over.</p>	Minn. R. 7019.1000, subp. 3
<p>Breakdown Notifications: Notify the Commissioner within 24 hours of a breakdown of more than one hour duration of any control equipment or process equipment if the breakdown causes any increase in the emissions of any regulated air pollutant. The 24-hour time period starts when the breakdown was discovered or reasonably should have been discovered by the owner or operator. However, notification is not required in the circumstances outlined in Items A, B and C of Minn. R. 7019.1000, subp. 2.</p> <p>At the time of notification or as soon as possible thereafter, the owner or operator shall inform the Commissioner of the cause of the breakdown and the estimated duration. The owner or operator shall notify the Commissioner when the breakdown is over.</p>	Minn. R. 7019.1000, subp. 2
<p>Notification of Deviations Endangering Human Health or the Environment: As soon as possible after discovery, notify the Commissioner or the state duty officer, either orally or by facsimile, of any deviation from permit conditions which could endanger human health or the environment.</p>	Minn. R. 7019.1000, subp. 1
<p>Notification of Deviations Endangering Human Health or the Environment Report: Within 2 working days of discovery, notify the Commissioner in writing of any deviation from permit conditions which could endanger human health or the environment. Include the following information in this written description:</p> <ol style="list-style-type: none"> 1. the cause of the deviation; 2. the exact dates of the period of the deviation, if the deviation has been corrected; 3. whether or not the deviation has been corrected; 4. the anticipated time by which the deviation is expected to be corrected, if not yet corrected; and 5. steps taken or planned to reduce, eliminate, and prevent reoccurrence of the deviation. 	Minn. R. 7019.1000, subp. 1
<p>Application for Permit Amendment: If a permit amendment is needed, submit an application in accordance with the requirements of Minn. R. 7007.1150 through Minn. R. 7007.1500. Submittal dates vary, depending on the type of amendment needed.</p>	Minn. R. 7007.1150 through Minn. R. 7007.1500
<p>Extension Requests: The Permittee may apply for an Administrative Amendment to extend a deadline in a permit by no more than 120 days, provided the proposed deadline extension meets the requirements of Minn. R. 7007.1400, subp. 1(H).</p>	Minn. R. 7007.1400, subp. 1(H)
<p>Emission Inventory Report: due 91 days after end of each calendar year following permit issuance (April 1). To be submitted on a form approved by the Commissioner.</p>	Minn. R. 7019.3000 through Minn. R. 7019.3010
<p>Emission Fees: due 60 days after receipt of an MPCA bill.</p>	Minn. R. 7002.0005 through Minn. R. 7002.0095

TABLE A: LIMITS AND OTHER REQUIREMENTS

05/12/04

Facility Name: Northwood Panelboard Co

Permit Number: 00700019 - 001

Subject Item: GP 001 Lamb Burners and Dryers

Associated Items: CE 019 Electrostatic Precipitator - High Efficiency

CE 020 Thermal Oxidizer

CE 023 Electrostatic Precipitator - High Efficiency

CE 024 Thermal Oxidizer

CE 025 Thermal Oxidizer

EU 001 Face Dryer/Lamb Burner

EU 002 Core Dryer/Lamb Burner

EU 004 Face Burner 1 (backup burner)

EU 005 Core Burner 2 (backup burner)

What to do	Why to do it
LIMITS	hdr
Total Particulate Matter: less than or equal to 0.49 lbs/ton of oven dried product. This is more stringent than limit in Minn. R. 7011.0610, subp 1(A), which also applies.	Title I Condition: 40 CFR Section 52.21(j) (BACT); Minn. R. 7007.3000
Particulate Matter < 10 micron: less than or equal to 12.2 lbs/hour	Title I Condition: 40 CFR Section 52.21(m) (modeling); Minn. R. 7007.3000
Particulate Matter < 10 micron: less than or equal to 0.49 lbs/ton of oven dried product.	Title I Condition: 40 CFR Section 52.21(j) (BACT); Minn. R. 7007.3000
Opacity: less than or equal to 20 percent opacity except for one six-minute period per hour of not more than 60 percent opacity.	Minn. R. 7011.0610, subp. 1(A)(2)
Carbon Monoxide: less than or equal to 32.4 lbs/hour	Title I Condition: 40 CFR Section 52.21 (m) (modeling); Minn. R. 7007.3000
Carbon Monoxide: less than or equal to 1.3 lbs/ton of oven dried product.	Title I Condition: 40 CFR Section 52.21(j) (BACT); Minn. R. 7007.3000
Nitrogen Oxides: less than or equal to 25 lbs/hour	Title I Condition: 40 CFR Section 52.21 (m) (modeling); Minn. R. 7007.3000
Nitrogen Oxides: less than or equal to 1.0 lbs/ton of oven dried product.	Title I Condition: 40 CFR Section 52.21(j) (BACT); Minn. R. 7007.3000
Volatile Organic Compounds: less than or equal to 0.59 lbs/ton of oven dried product. The VOC limit is on an "as VOC basis", and is to be measured using the draft Oregon "Guidance for Evaluating VOC Emissions from Drying and Hot-Pressing Activities Common to the Wood Products Industry" (attached as Appendix D to this permit).	Title I Condition: 40 CFR Section 52.21(j) (BACT); Minn. R. 7007.3000
Sulfur Dioxide: less than or equal to 4.0 lbs/million Btu heat input . The PTE of this unit is 2.2 lb/hr.	Minn. R. 7011.0610, subp. 2(B)(1)
Fuel Usage: limited to hog fuel (bark, wood, trims and dust collected from baghouses), propane, natural gas, and up to 150 lb/hr (monthly average) of the total fuel combusted may consist of manufacturing residue. Cellulose based sorbents and alternate biomass fuels may be combusted subject to the approval by the MPCA.	Minn. R. 7007.0800, subp. 2
Manufacturing residue: The manufacturing residue must be generated on site and may consist of the following: wood flake resin and wax accumulations cleaned from equipment, water-based paint residues from edgesealing and stenciling operations, WESP effluent and sludges, confidential office records (paper) and corrugated cardboard unsuitable for recycling. In addition, the manufacturing residue shall not contain any of the following: any hazardous waste listed in Minn. R. 7045.0135, any wastes specified in Minn. R. 7045.0131 as hazardous, or batteries or any other material where mercury has been purposely introduced. Absorbent material from spills containing oil, anti-freeze, water-based paints, or soy or water-based ink may be combusted. The spilled material other than oil shall not contain: any hazardous waste listed in Minn. R. 7045.0135 or any wastes specified in Minn. R. 7045.0131 as hazardous. The oil in any absorbent material shall only be on-specification used oil.	Minn. R. 7007.0800, subp. 2

TABLE A: LIMITS AND OTHER REQUIREMENTS

05/12/04

Facility Name: Northwood Panelboard Co

Permit Number: 00700019 - 001

<p>Biomass Fuel Usage: The Permittee may use specific biomass fuel subject to approval from the MPCA. "Biomass" means the materials define in Minn. Stat. Section 216C.051, subd. 7, including herbaceous crops, trees, agricultural waste, and aquatic plant matter, and excluding mixed municipal solid waste as defined in Minn. Stat. Section 115A.03.</p> <p>For each biomass fuel type, the Permittee may initiate a trial period consisting of no more than 90 days where that type of fuel is combusted. In order to continue operation with this type of fuel, the Permittee shall submit a proposal, subject to MPCA written approval, providing details of the new fuel (such as proximate and ultimate analysis), the method of introduction into the combustion chamber and an estimate of the change in emissions of regulated pollutants. If the emissions change is uncertain, or an increase in emissions is indicated, the Permittee shall include a schedule for performance testing in the proposal.</p>	Minn. R. 7007.0800, subp. 2
CONTROL EQUIPMENT - EFB	hdr
New EFBs (if installed) Initial Startup: due 540 days after Permit Issuance	Title I Condition: to meet BACT limit; Minn. R. 7007.3000
<p>Pressure Drop: greater than or equal to 1.0 inches of water column and less than or equal to 9.0 inches of water column across the EFB, unless a new range is set pursuant to Minn. R. 7017.2025, subp. 3, based on the range recorded during the most recent MPCA approved performance test where compliance for PM and/or PM10 emissions was demonstrated. If the pressure drop falls outside the range, this shall be reported as a deviation.</p> <p>This condition applies only until the WESP is installed, if WESP is used as BACT control with RTO. If new EFB is installed, this condition continues to apply.</p>	Title I Condition: To meet BACT limit; Minn. R. 7007.0800, subp. 2 and 14
<p>EFB Bed Voltage: greater than or equal to 5.0 kV, unless a new minimum is set pursuant to Minn. R. 7017.2025, subp. 3, based on the minimum bed voltage recorded during the most recent MPCA approved performance test where compliance for PM and/or PM10 emissions was demonstrated. If the EFB bed voltage falls below the minimum, this shall be reported as a deviation.</p> <p>This condition applies only until the WESP is installed, if WESP is used as BACT control with RTO. If new EFB is installed, this condition continues to apply.</p>	Title I Condition: To meet BACT limit; Minn. R. 7007.0800, subp. 2 and 14
<p>EFB Ionizer Voltage: greater than or equal to 15.0 kV, unless a new minimum is set pursuant to Minn. R. 7017.2025, subp. 3, based on the minimum EFB ionizer voltage recorded during the most recent MPCA approved performance test where compliance for PM and/or PM10 emissions was demonstrated. If the EFB ionizer voltage falls below the minimum, this shall be reported as a deviation.</p> <p>This condition applies only until the WESP is installed, if WESP is used as BACT control with RTO. If new EFB is installed, this condition continues to apply.</p>	Title I Condition: To meet BACT limit; Minn. R. 7007.0800, subp. 2 and 14
<p>Recordkeeping of Pressure Drop and EFB Bed Voltage and EFB Ionizer Voltage. Once each day while in operation, the Permittee shall monitor and record the pressure drop, bed voltage and ionizer voltage. The Permittee shall record the time and date of each pressure drop, bed voltage, and ionizer voltage reading and whether or not the recorded measurement was within the range specified in this permit.</p> <p>This condition applies only until the WESP is installed, if WESP is used as BACT control with RTO. If new EFB is installed, this condition continues to apply.</p>	Title I Condition: Monitoring for BACT limit; Minn. R. 7007.0800, subp. 4 and 5
CONTROL EQUIPMENT - WESP	hdr
WESPs (if installed) Initial Startup: due 540 days after Permit Issuance	Title I Condition: to meet BACT limit; Minn. R. 7007.3000
Number of Fields on Line (for WESP): Greater than or equal to two, unless a new minimum is set based on the most recent MPCA-approved performance test where compliance for PM and PM10 emissions was demonstrated. If the number of fields on line falls outside the range, this shall be reported as a deviation.	Title I Condition: To meet BACT limit; Minn. R. 7007.0800, subp. 2 and 14
Recordkeeping for WESP. Once each day while in operation, the Permittee shall monitor and record the number of fields on line of the WESP. The Permittee shall record the time and date of each reading and whether or not the recorded measurement was within the range specified in this permit.	Title I Condition: Monitoring for BACT limit; Minn. R. 7007.0800, subp. 4 and 5
CONTROL EQUIPMENT - RTO	hdr
RTO Initial Startup: due 540 days after Permit Issuance	Title I Condition: to meet BACT limit; Minn. R. 7007.3000

TABLE A: LIMITS AND OTHER REQUIREMENTS

05/12/04

Facility Name: Northwood Panelboard Co

Permit Number: 00700019 - 001

Temperature: greater than or equal to 1450 degrees F using 3-hour Average (block) at the Combustion Chamber unless a new minimum is set pursuant to Minn. R. 7017.2025, subp. 3, based on the average temperature recorded during the most recent MPCA approved performance test where compliance for VOC emissions was demonstrated. If the three-hour block average temperature drops below the minimum temperature limit, the VOC used during that time shall be considered uncontrolled until the average minimum temperature limit is once again achieved. This shall be reported as a deviation.	Title I Condition: To meet BACT limit; Minn. R. 7007.0800, subp. 2 and 14
CONTROL EQUIPMENT	hdr
The Permittee shall operate and maintain the control equipment such that it achieves an overall control efficiency for Volatile Organic Compounds: greater than or equal to 90 percent control efficiency	Title I Condition: 40 CFR Section 52.21; Minn. R. 7007.3000
The Permittee shall operate and maintain the control equipment such that it achieves an overall control efficiency for Total Particulate Matter and Particulate Matter < 10 micron: greater than or equal to 90 percent control efficiency	Title I Condition: 40 CFR Section 52.21; Minn. R. 7007.3000
The Permittee shall operate and maintain the control equipment (electrified filter bed (EFB) or wet electrostatic precipitator (WESP) and thermal oxidizer (RTO)) any time that any process equipment controlled by the control equipment is in operation. The Permittee intends to install three RTOs, but will generally use any two at a time, with the third one available as back-up. All monitoring, inspection requirements, etc. will be identical for all three RTOs. Performance testing will be conducted with two RTOs on line, to verify proper operation with two RTOs.	Title I Condition: To meet BACT limit; Minn. R. 7007.0800, subp. 4, 5 and 14
MONITORING	hdr
The Permittee shall maintain a continuous hard copy readout or electronic file of the temperature readings and calculated three hour block average temperatures for the combustion chamber.	Title I Condition: Monitoring for BACT limit
Daily Monitoring: The Permittee shall physically check the temperature recording device for the thermal oxidizer and any other recording device used for monitoring of control equipment as required by the permit at least once each operating day to verify that it is working and recording properly. The Permittee shall also check for the presence of quench water flow for the electrostatic precipitators, if installed.	Minn. R. 7007.0800, subp. 4 and 5
Monitoring Equipment: The Permittee shall install and maintain thermocouples for the thermal oxidizer to conduct temperature monitoring required by this permit. The Permittee shall install and maintain equipment for monitoring number of fields on line for the electrostatic precipitators and for monitoring the presence of quench water flow. The Permittee shall install and maintain equipment for monitoring EFB pressure drop, bed voltage and ionizer voltage. The monitoring equipment must be installed, in use, and properly maintained whenever operation of the monitored control equipment is required. The Permittee shall maintain and operate a thermocouple monitoring device that continuously indicates and records the combustion chamber temperature of the thermal oxidizer. The Permittee shall maintain and operate monitoring devices to continuously indicate the number of fields on line for the ESP (if installed) and to indicate the EFB pressure drop, bed voltage and ionizer voltage.	Minn. R. 7007.0800, subp. 4 and 5
Quarterly Inspections: At least once per calendar quarter, the Permittee shall inspect the control equipment external system components, including but not limited to the electrical systems. The Permittee shall maintain a written record of the inspection and any corrective actions taken resulting from the inspection.	Minn. R. 7007.0800, subp. 4, 5, and 14
Annual Inspections: At least once per calendar year, the Permittee shall inspect the control equipment internal system components, including but not limited to the refractory and heat exchanger systems of the thermal oxidizer. The Permittee shall maintain a written record of the inspection and any corrective actions taken resulting from the inspection.	Minn. R. 7007.0800, subp. 4, 5, and 14
Annual Calibration: The Permittee shall calibrate the temperature monitor at least annually and shall maintain a written record of the calibration and any action resulting from the calibration.	Minn. R. 7007.0800, subp. 4, 5, and 14
Corrective Actions: If the temperature is below the minimum specified by this permit or if the thermal oxidizer or any of its components are found during the inspections to need repair, the Permittee shall take corrective action as soon as possible. Corrective actions shall return the temperature to at least the permitted minimum and/or include completion of necessary repairs identified during the inspection, as applicable. Corrective actions include, but are not limited to, those outlined in the O & M Plan for the thermal oxidizer. The Permittee shall keep a record of the type and date of any corrective action taken.	Minn. R. 7007.0800, subp. 4, 5, and 14
The Permittee shall operate and maintain the thermal oxidizer in accordance with the Operation and Maintenance (O & M) Plan. The Permittee shall keep copies of the O & M Plan available onsite for use by staff and MPCA staff.	Minn. R. 7007.0800, subp. 14
PERFORMANCE TESTING	hdr

TABLE A: LIMITS AND OTHER REQUIREMENTS

05/12/04

Facility Name: Northwood Panelboard Co

Permit Number: 00700019 - 001

Performance Test: due 180 days after Initial Startup of thermal oxidizers to determine opacity and total particulate matter, particulate matter < 10 microns, carbon monoxide, nitrogen oxides, and volatile organic compound emissions. VOC emissions shall be measured in accordance with the draft Oregon "Guidance for Evaluating VOC Emissions from Drying and Hot-Pressing Activities Common to the Wood Products Industry" (attached as Appendix D to this permit).	Title I Condition: Monitoring for BACT limits
CLEAN UNIT	hdr
Basis for Clean Unit Designation. In addition to the other Title I limits contained in this permit, the following parameters formed the basis for the BACT determination for the pollutants PM, PM10, VOCs and CO: Production throughput: less than or equal to 25 oven dried ton (ODT)/hr Primary burners: total heat input less than or equal to 90 MMBtu/hr, burning wood Backup burners: total heat input less than or equal to 90 MMBtu/hr, burning natural gas	Title I Condition: 40 CFR Section 52.21(x)(6)(iv) and Minn. R. 7007.3000
Clean Unit Designation: this unit, i.e. GP 001 rotary dryers with burners, qualifies as a Clean Unit for PM, PM10, VOCs, and CO provided the Permittee complies with the provisions of 40 CFR Section 52.21(x). This designation is effective on the Clean Unit effective date and expires 10 years after the Clean Unit effective date. The Clean Unit effective date shall be the Initial Startup date of the control device (ESP or new EFBs, in conjunction with RTOs), or 3 years after issuance of this permit, whichever is earlier.	Title I Condition: 40 CFR Section 52.21(x)(6) and Minn. R. 7007.3000
Maintaining Clean Unit Designation: to maintain the Clean Unit designation, the Permittee must conform to all the restrictions listed in 40 CFR Section 52.21(x)(7). Failure to do so results in the unit losing the Clean Unit Designation.	Title I Condition: 40 CFR Section 52.21(x)(7) and Minn. R. 7007.3000
RECORDKEEPING	HDR
Recordkeeping: - Production rate: On each day of operation, the Permittee shall calculate, record, and maintain the production rate in ODT/hr for the previous calendar day. This shall be based on written production logs.	Title I Condition: Monitoring for Clean Unit Designation; Minn. R. 7007.0800. subp. 4 and 5
Daily Recordkeeping: On each day of operation, the Permittee shall calculate, record, and maintain records of, the total weight of manufacturing residue, absorbent material or biomass fed to the burner fuel stream.	Title I Condition: Monitoring for Title I Condition (40 CFR 52.21) and Minn. R. 7007.3000); Minn. R. 7007.0800. subp. 4 and 5
Monthly Recordkeeping - Within 15 days of the end of the month, the Permittee shall calculate and record the average hourly feed rate of manufacturing residue and absorbent material burned in the boilers for the previous month. This feed rate in lb/hr shall be compared to the limit.	Minn. R. 7007.0800, subp. 4 and 5

TABLE A: LIMITS AND OTHER REQUIREMENTS

05/12/04

Facility Name: Northwood Panelboard Co

Permit Number: 00700019 - 001

Subject Item: GP 002 Konus Burners

Associated Items: CE 014 Electrified Filter Bed

CE 015 Electrified Filter Bed

EU 007 Konus Burner 1

EU 008 Konus Burner 2

What to do	Why to do it
LIMITS	hdr
Total Particulate Matter: less than or equal to 0.21 lbs/million Btu heat input . This is more stringent than limit in Minn. R. 7011.0610, subp 1(A), which also applies.	Title I Condition: 40 CFR Section 52.21(j) (BACT); Minn. R. 7007.3000
Particulate Matter < 10 micron: less than or equal to 8.4 lbs/hour	Title I Condition: 40 CFR Section 52.21 (m) (modeling); Minn. R. 7007.3000
Particulate Matter < 10 micron: less than or equal to 0.21 lbs/million Btu heat input	Title I Condition: 40 CFR Section 52.21(j) (BACT); Minn. R. 7007.3000
Opacity: less than or equal to 20 percent opacity except for one six-minute period per hour of not more than 60 percent opacity.	Minn. R. 7011.0610, subp. 1(A)(2)
Carbon Monoxide: less than or equal to 44 lbs/hour	Title I Condition: 40 CFR Section 52.21 (m) (modeling); Minn. R. 7007.3000
Carbon Monoxide: less than or equal to 1.1 lbs/million Btu heat input	Title I Condition: 40 CFR Section 52.21(j) (BACT); Minn. R. 7007.3000
Nitrogen Oxides: less than or equal to 12 lbs/hour	Title I Condition: 40 CFR Section 52.21 (m) (modeling); Minn. R. 7007.3000
Nitrogen Oxides: less than or equal to 0.30 lbs/million Btu heat input	Title I Condition: 40 CFR Section 52.21(j) (BACT); Minn. R. 7007.3000
Volatile Organic Compounds: less than or equal to 0.26 lbs/million Btu heat input . The VOC limit is based on using Method 25A, measured as propane.	Title I Condition: 40 CFR Section 52.21(j) (BACT); Minn. R. 7007.3000
Sulfur Dioxide: less than or equal to 4.0 million Btu's/hour . The PTE of this unit is 2.2 lb/hr.	Minn. R. 7011.0610, subp. 2(B)(1)
Fuel Usage: Fuel Usage: limited to hog fuel (bark, wood, trims and dust collected from baghouses), propane, natural gas, and up to 150 lb/hr (monthly average) of the total fuel combusted may consist of manufacturing residue. Cellulose based sorbents and alternate biomass fuels may be combusted subject to the approval by the MPCA.	Minn. R. 7007.0800, subp. 2
Manufacturing residue: The manufacturing residue must be generated on site and may consist of the following: wood flake resin and wax accumulations cleaned from equipment, water-based paint residues from edgesealing and stenciling operations, WESP effluent and sludges, confidential office records (paper) and corrugated cardboard unsuitable for recycling. In addition, the manufacturing residue shall not contain any of the following: any hazardous waste listed in Minn. R. 7045.0135, any wastes specified in Minn. R. 7045.0131 as hazardous, or batteries or any other material where mercury has been purposely introduced. Absorbent material from spills containing oil, anti-freeze, water-based paints, or soy or water-based ink may be combusted. The spilled material other than oil shall not contain: any hazardous waste listed in Minn. R. 7045.0135 or any wastes specified in Minn. R. 7045.01313 as hazardous. The oil in any absorbent material shall only be on-specification used oil.	Minn. R. 7007.0800, subp. 2
Biomass Fuel Usage: The Permittee may use specific biomass fuel subject to approval from the MPCA. "Biomass" means the materials define in Minn. Stat. Section 216C.051, subd. 7, including herbaceous crops, trees, agricultural waste, and aquatic plant matter, and excluding mixed municipal solid waste as defined in Minn. Stat. Section 115A.03. For each biomass fuel type, the Permittee may initiate a trial period consisting of no more than 90 days where that type of fuel is combusted. In order to continue operation with this type of fuel, the Permittee shall submit a proposal, subject to MPCA written approval, providing details of the new fuel (such as proximate and ultimate analysis), the method of introduction into the combustion chamber and an estimate of the change in emissions of regulated pollutants. If the emissions change is uncertain, or an increase in emissions is indicated, the Permittee shall include a schedule for performance testing in the proposal.	Minn. R. 7007.0800, subp. 2
CONTROL EQUIPMENT	hdr
The Permittee shall operate and maintain the control equipment such that it achieves an overall control efficiency for Total Particulate Matter and Particulate Matter < 10 micron: greater than or equal to 95 percent control efficiency	Title I Condition: 40 CFR Section 52.21; Minn. R. 7007.3000

TABLE A: LIMITS AND OTHER REQUIREMENTS

05/12/04

Facility Name: Northwood Panelboard Co

Permit Number: 00700019 - 001

Pressure Drop: greater than or equal to 1.0 inches of water column and less than or equal to 6.0 inches of water column, unless a new range is set pursuant to Minn. R. 7017.2025, subp. 3, based on the values recorded during the most recent MPCA approved performance test where compliance was demonstrated. The Permittee shall record the pressure drop once every 24 hours when in operation. This is the pressure drop across the bed of the EFB.	Title I Condition: Monitoring for PM, PM10 BACT limits; Minn. R. 7007.0800, subp. 2 and 14
EFB Bed Voltage: greater than or equal to 5.0 kV, unless a new minimum is set pursuant to Minn. R. 7017.2025, subp. 3, based on the minimum bed voltage recorded during the most recent MPCA approved performance test where compliance for PM and/or PM10 emissions was demonstrated. If the EFB bed voltage falls below the minimum, this shall be reported as a deviation.	Title I Condition: Monitoring for PM, PM10 BACT limits; Minn. R. 7007.0800, subp. 2 and 14
EFB Ionizer Voltage: greater than or equal to 15.0 kV, unless a new minimum is set pursuant to Minn. R. 7017.2025, subp. 3, based on the minimum EFB ionizer voltage recorded during the most recent MPCA approved performance test where compliance for PM and/or PM10 emissions was demonstrated. If the EFB ionizer voltage falls below the minimum, this shall be reported as a deviation.	Title I Condition: Monitoring for PM, PM10 BACT limits; Minn. R. 7007.0800, subp. 2 and 14
Recordkeeping of Pressure Drop and EFB Bed Voltage and EFB Ionizer Voltage. Once each day while in operation, the Permittee shall monitor and record the pressure drop, bed voltage and ionizer voltage. The Permittee shall record the time and date of each pressure drop, bed voltage, and ionizer voltage reading and whether or not the recorded measurement was within the range specified in this permit.	Title I Condition: Monitoring for PM, PM10 BACT limits; Minn. R. 7007.0800, subp. 4 and 5
The Permittee shall operate and maintain the EFB at all times that any emission unit controlled by the EFB is in operation.	Title I Condition: BACT limit; Minn. R. 7007.0800, subp. 2 and 14
Quarterly Inspections: At least once per calendar quarter, the Permittee shall inspect the control equipment external system components, including but not limited to the electrical systems. The Permittee shall maintain a written record of the inspection and any corrective actions taken resulting from the inspection.	Minn. R. 7007.0800, subp. 4, 5, and 14
Annual Inspections: At least once per calendar year, the Permittee shall inspect the control equipment internal system components. The Permittee shall maintain a written record of the inspection and any corrective actions taken resulting from the inspection.	Minn. R. 7007.0800, subp. 4, 5, and 14
Corrective Actions: The Permittee shall take corrective action as soon as possible if any of the following occur: - the recorded pressure drop, EFB bed voltage or EFB ionizer voltage is outside the required operating range; or - the EFB or any of its components are found during the inspections to need repair. Corrective actions shall return the recorded parameter to within the permitted range and/or include completion of necessary repairs identified during the inspection, as applicable. Corrective actions include, but are not limited to, those outlined in the O & M Plan for the EFB. The Permittee shall keep a record of the type and date of any corrective action taken for each EFB.	Minn. R. 7007.0800, subp. 4, 5, and 14
CLEAN UNIT	hdr
Clean Unit Designation: this unit, i.e. GP 002 Konus burners, qualifies as a Clean Unit for PM, PM10, VOC and CO provided the Permittee complies with the provisions of 40 CFR Section 52.21(x). This designation is effective on the Clean Unit effective date and expires 10 years after the Clean Unit effective date. The Clean Unit effective date shall be the Issuance Date of this permit.	Title I Condition: 40 CFR Section 52.21(x)(6) and Minn. R. 7007.3000
Basis for Clean Unit Designation. In addition to the BACT limits contained in this permit, the following parameters formed the basis for the BACT determination for the pollutants PM, PM10, VOCs and CO: Burners: total heat input less than or equal to 40 MMBtu/hr, burning wood	Title I Condition: 40 CFR Section 52.21(x)(6)(iv) and Minn. R. 7007.3000
Maintaining Clean Unit Designation: to maintain the Clean Unit designation, the Permittee must conform to all the restrictions listed in 40 CFR Section 52.21(x)(7). Failure to do so results in the unit losing the Clean Unit Designation.	Title I Condition: 40 CFR Section 52.21(x)(7) and Minn. R. 7007.3000
PERFORMANCE TESTING	hdr
Initial Performance Test: due 180 days after Permit Issuance to determine opacity and total particulate matter, particulate matter < 10 microns, carbon monoxide, nitrogen oxides, and volatile organic compound emissions.	Title I Condition: Monitoring for BACT limits
RECORDKEEPING	hdr
Daily Recordkeeping: On each day of operation, the Permittee shall calculate, record, and maintain records of, the total weight of manufacturing residue, absorbent material or biomass fed to the burner fuel stream.	Title I Condition: Monitoring for Title I Condition (40 CFR 52.21) and Minn. R. 7007.3000; Minn. R. 7007.0800, subp. 4 and 5
Monthly Recordkeeping - Within 15 days of the end of the month, the Permittee shall calculate and record the average hourly feed rate of manufacturing residue and absorbent material burned in the boilers for the previous month. This feed rate in lb/hr shall be compared to the limit.	Minn. R. 7007.0800, subp. 4 and 5

TABLE A: LIMITS AND OTHER REQUIREMENTS

05/12/04

Facility Name: Northwood Panelboard Co

Permit Number: 00700019 - 001

Subject Item: GP 003 Conveyor Dryer System

Associated Items: CE 002 Electrostatic Precipitator - High Efficiency

CE 021 Centrifugal Collector - High Efficiency

CE 022 Centrifugal Collector - High Efficiency

EU 003 Wellons Burner

EU 020 Conveyor Zone 1, 2 & 3

SV 017

SV 018

What to do	Why to do it
LIMITS	hdr
Total Particulate Matter: less than or equal to 8.3 lbs/hour	Title I Condition: 40 CFR Section 52.21(k) (modeling); Minn. R. 7007.3000
Total Particulate Matter: less than or equal to 0.10 lbs/million Btu heat input . The BACT limit is the same as the NSPS limit (40 CFR pt. 60, subp. Dc), which also applies.	Title I Condition: 40 CFR Section 52.21(j) (BACT limit); 40 CFR pt. 60, subp. Dc; Minn. R. 7007.3000
Particulate Matter < 10 micron: less than or equal to 8.3 lbs/hour	Title I Condition: 40 CFR Section 52.21(k) (modeling); Minn. R. 7007.3000
Particulate Matter < 10 micron: less than or equal to 0.10 lbs/million Btu heat input	Title I Condition: 40 CFR Section 52.21(j) (BACT limit); Minn. R. 7007.3000
Nitrogen Oxides: less than or equal to 22.4 lbs/hour	Title I Condition: 40 CFR Section 52.21(k) (modeling); Minn. R. 7007.3000
Nitrogen Oxides: less than or equal to 0.27 lbs/million Btu heat input	Title I Condition: 40 CFR Section 52.21(j) (BACT limit); Minn. R. 7007.3000
Carbon Monoxide: less than or equal to 20.7 lbs/hour	Title I Condition: 40 CFR Section 52.21(k) (modeling); Minn. R. 7007.3000
Carbon Monoxide: less than or equal to 0.25 lbs/million Btu heat input	Title I Condition: 40 CFR Section 52.21(j) (BACT limit); Minn. R. 7007.3000
Volatile Organic Compounds: less than or equal to 0.16 lbs/million Btu heat input . The VOC limit is on an "as VOC basis", and is to be measured using the draft Oregon "Guidance for Evaluating VOC Emissions from Drying and Hot-Pressing Activities Common to the Wood Products Industry" (attached as Appendix D to this permit).	Title I Condition: 40 CFR Section 52.21(j) (BACT limit); Minn. R. 7007.3000
Opacity: less than or equal to 20 percent opacity , except for one 6-minute period per hour of not more than 27 percent opacity. This limit does not apply during periods of startup, shutdown, or malfunction.	40 CFR pt. 60.43c(c)
Fuel Usage: limited to hog fuel (bark, wood, trims and dust collected from baghouses), propane, natural gas, and up to 150 lb/hr (monthly average) of the total fuel combusted may consist of manufacturing residue. Cellulose based sorbents and alternate biomass fuels may be combusted subject to the approval by the MPCA.	Minn. R. 7007.0800, subp. 2
Manufacturing residue: The manufacturing residue must be generated on site and may consist of the following: wood flake resin and wax accumulations cleaned from equipment, water-based paint residues from edgesealing and stenciling operations, WESP effluent and sludges, confidential office records (paper) and corrugated cardboard unsuitable for recycling. In addition, the manufacturing residue shall not contain any of the following: any hazardous waste listed in Minn. R. 7045.0135, any wastes specified in Minn. R. 7045.0131 as hazardous, or batteries or any other material where mercury has been purposely introduced. Absorbent material from spills containing oil, anti-freeze, water-based paints, or soy or water-based ink may be combusted. The spilled material other than oil shall not contain: any hazardous waste listed in Minn. R. 7045.0135 or any wastes specified in Minn. R. 7045.0131 as hazardous. The oil in any absorbent material shall only be on-specification used oil.	Minn. R. 7007.0800, subp. 2

TABLE A: LIMITS AND OTHER REQUIREMENTS

05/12/04

Facility Name: Northwood Panelboard Co

Permit Number: 00700019 - 001

<p>Biomass Fuel Usage: The Permittee may use specific biomass fuel subject to approval from the MPCA. "Biomass" means the materials define in Minn. Stat. Section 216C.051, subd. 7, including herbaceous crops, trees, agricultural waste, and aquatic plant matter, and excluding mixed municipal solid waste as defined in Minn. Stat. Section 115A.03.</p> <p>For each biomass fuel type, the Permittee may initiate a trial period consisting of no more than 90 days where that type of fuel is combusted. In order to continue operation with this type of fuel, the Permittee shall submit a proposal, subject to MPCA written approval, providing details of the new fuel (such as proximate and ultimate analysis), the method of introduction into the combustion chamber and an estimate of the change in emissions of regulated pollutants. If the emissions change is uncertain, or an increase in emissions is indicated, the Permittee shall include a schedule for performance testing in the proposal.</p>	Minn. R. 7007.0800, subp. 2
<p>Production: less than or equal to 37550 lbs/hour using 8-hour Block Average (Production of Oven Dried Strands). This limit will be amended as specified in Minn. R. 7017.2025, upon completion of each subsequent performance test.</p>	Title I Condition: 40 CFR Section 52.21; Minn. R. 7007.3000; Minn. R. 7017.2025, subp. 3
<p>Oven Dried Strand Production: less than 35000 lbs/hour using 30-day Rolling Average</p>	Title I Condition: 40 CFR Section 52.21; Minn. R. 7007.3000
<p>Daily Recordkeeping. At least once each 8-hour discrete block of each day of operation, the Permittee shall record the total quantity of oven dried strands produced in the conveyor-dryer system. This shall be based on production records. The Permittee, on each day of operation shall then calculate and record the following:</p> <ol style="list-style-type: none"> 1) The total oven dried strand production for the previous calendar month using the daily production records. 2) The 30-day rolling average production for the previous 30-day period. 3) The 8-hour block average for each of the 8-hour blocks of the previous day. 	Title I Condition: Monitoring for production limit; Minn. R. 7007.0800, subp. 4 and 5
<p>CONTROL EQUIPMENT</p>	hdr
<p>The Permittee shall operate and maintain the control equipment (ESP) such that it achieves an overall control efficiency on the Wellons Burner for Total Particulate Matter and Particulate Matter < 10 micron: greater than or equal to 95 percent control efficiency</p>	Title I Condition: 40 CFR Section 52.21; Minn. R. 7007.3000
<p>Number of Fields on Line (for WESP): Greater than or equal to two, unless a new minimum is set based on the most recent MPCA-approved performance test where compliance for PM and PM10 emissions was demonstrated. If the number of fields on line falls outside the range, this shall be reported as a deviation.</p>	Title I Condition: To meet BACT limit; Minn. R. 7007.0800, subp. 2 and 14
<p>Recordkeeping of Number of Fields On Line. Once each day while in operation, the Permittee shall monitor and record the number of fields on line. The Permittee shall record the time and date of each reading and whether or not the recorded measurement was within the range specified in this permit.</p>	Minn. R. 7007.0800, subp. 4 and 5
<p>Quarterly Inspections: At least once per calendar quarter, the Permittee shall inspect the control equipment's external system components. The Permittee shall maintain a written record of the inspection and any corrective actions taken resulting from the inspection.</p>	Minn. R. 7007.0800, subp. 4, 5, and 14
<p>Annual Inspections: At least once per calendar year, the Permittee shall inspect the control equipment's internal system components. The Permittee shall maintain a written record of the inspection and any corrective actions taken resulting from the inspection.</p>	Minn. R. 7007.0800, subp. 4, 5, and 14
<p>Corrective Actions: If the ESP or any of its components are found during the inspections to need repair, the Permittee shall take corrective actions as soon as possible. Corrective actions shall include completion of necessary repairs identified during the inspection, as applicable. Corrective actions include, but are not limited to, those outlined in the O & M Plan for the ESP. The Permittee shall keep a record of the type and date of any corrective action taken.</p>	Minn. R. 7007.0800, subp. 4, 5, and 14
<p>The Permittee shall operate and maintain the ESP in accordance with the Operation and Maintenance (O & M) Plan. The Permittee shall keep copies of the O & M Plan available onsite for use by staff and MPCA staff.</p>	Minn. R. 7007.0800, subp. 14
<p>PERFORMANCE TESTING</p>	hdr
<p>Initial Performance Test: due 1,095 days after Permit Issuance to measure Total Particulate Matter; Particulate Matter less than 10 microns; Volatile Organic Compounds; Nitrogen Oxides; and Carbon Monoxide emissions. VOC emissions shall be measured in accordance with the draft Oregon "Guidance for Evaluating VOC Emissions from Drying and Hot-Pressing Activities Common to the Wood Products Industry" (attached as Appendix D to this permit).</p>	Minn. R. 7017.2020, subp. 1
<p>Performance Test: due before end of each 60 months following Initial Performance Test to measure Total Particulate Matter, Particulate Matter less than 10 microns, Volatile Organic Compounds and Carbon Monoxide emissions. VOC emissions shall be measured in accordance with the draft Oregon "Guidance for Evaluating VOC Emissions from Drying and Hot-Pressing Activities Common to the Wood Products Industry" (attached as Appendix D to this permit).</p>	Minn. R. 7017.2020, subp. 1

TABLE A: LIMITS AND OTHER REQUIREMENTS

05/12/04

Facility Name: Northwood Panelboard Co

Permit Number: 00700019 - 001

COMS	hdr
The owner or operator shall install, calibrate, maintain, and operate a COMS for measuring the opacity of emissions discharged to the atmosphere, and record the output of the system. The COMS is used to measure opacity from EU 003 (Wellons Burner).	40 CFR Section 60.47c(a); Minn. R. 7011.0570; Minn. R. 7017.1006
The span value of the COMS shall be between 60 and 80 percent.	40 CFR Section 60.47c(b); Minn. R. 7011.0570
COMS Daily Calibration Drift (CD) Check: The CD shall be quantified and recorded at zero (low-level) and upscale (high-level) opacity at least once daily. The COMS must be adjusted whenever the calibration drift (CD) exceeds twice the specification of PS-1 of 40 CFR 60, Appendix B.	Minn. R. 7017.1210, subp. 2; 40 CFR Section 60.13(d)
COMS Calibration Error Audit: due before end of each calendar half-year following Permit Issuance. Conduct three point calibration error audits at least 3 months apart but no greater than 8 months apart. Filter values used shall correspond to approximately 11%, 20%, and 37% opacity.	Minn. R. 7017.1210, subp. 3
COMS Calibration Error Audit Results Summary: due 30 days after end of each calendar half-year following COMS Calibration Error Audit.	Minn. R. 7017.1220
All COMS shall complete a minimum of one cycle of sampling and analyzing for each successive 10-second period and one cycle of data for each successive 6-minute period.	Minn. R. 7017.1200, subp. 1, 2 & 3; 40 CFR Section 60.13(e)(1); 40 CFR Section 60.13(h)
Recordkeeping: The owner or operator must retain records of all COMS monitoring data and support information for a period of five years from the date of the monitoring sample, measurement or report. Records shall be kept at the source.	Minn. R. 7017.1130
QA Plan Required: Develop and implement a written quality assurance plan which covers each COMS. The plan shall be on site and available for inspection within 30 days after monitor certification. The plan shall contain the written procedures listed in Minn. R. 7017.1210, subp. 1.	Minn. R. 7017.1210
CLEAN UNIT	hdr
Basis for Clean Unit Designation. In addition to the other Title I limits contained in this permit, the following parameters formed the basis for the BACT determination for the pollutants PM, PM10, VOCs, NOx, and CO: Production throughput: less than or equal to 22.5 oven dried ton (ODT)/hr Burner: total heat input less than or equal to 100 MMBtu/hr, burning wood Softwood limited to less than or equal to 5% by weight	Title I Condition: 40 CFR Section 52.21(x)(6)(iv) and Minn. R. 7007.3000
Clean Unit Designation: this unit, i.e. GP 003 conveyor dryer system, qualifies as a Clean Unit for PM, PM10, VOCs, NOx and CO provided the Permittee complies with the provisions of 40 CFR Section 52.21(x). This designation is effective on March 3, 2003 and expires 10 years after the initial date of the Clean Unit start. The expiration date is March 1, 2006.	Title I Condition: 40 CFR Section 52.21(x)(6) and Minn. R. 7007.3000
Maintaining Clean Unit Designation: to maintain the Clean Unit designation, the Permittee must conform to all the restrictions listed in 40 CFR Section 52.21(x)(7). Failure to do so results in the unit losing the Clean Unit Designation.	Title I Condition: 40 CFR Section 52.21(x)(7) and Minn. R. 7007.3000
RECORDKEEPING	hdr
Daily Recordkeeping: On each day of operation, the Permittee shall calculate, record, and maintain records of, the total weight of manufacturing residue, absorbent material or biomass fed to the burner fuel stream.	Title I Condition: Monitoring for Title I Condition (40 CFR 52.21) and Minn. R. 7007.3000; Minn. R. 7007.0800, subp. 4 and 5
Monthly Recordkeeping - Within 15 days of the end of the month, the Permittee shall calculate and record the average hourly feed rate of manufacturing residue and absorbent material burned in the boilers for the previous month. This feed rate in lb/hr shall be compared to the limit.	Minn. R. 7007.0800, subp. 4 and 5

TABLE A: LIMITS AND OTHER REQUIREMENTS

05/12/04

Facility Name: Northwood Panelboard Co

Permit Number: 00700019 - 001

Subject Item: GP 004 Baghouses

Associated Items: CE 004 Fabric Filter - Low Temperature, i.e., T<180 Degrees F
CE 005 Fabric Filter - Low Temperature, i.e., T<180 Degrees F
CE 006 Fabric Filter - Low Temperature, i.e., T<180 Degrees F
CE 007 Fabric Filter - Low Temperature, i.e., T<180 Degrees F
CE 008 Fabric Filter - Low Temperature, i.e., T<180 Degrees F
CE 009 Fabric Filter - Low Temperature, i.e., T<180 Degrees F
CE 010 Fabric Filter - Low Temperature, i.e., T<180 Degrees F
CE 016 Fabric Filter - Low Temperature, i.e., T<180 Degrees F

What to do	Why to do it
LIMITS	hdr
Total Particulate Matter: less than or equal to 0.004 grains/dry standard cubic foot . This applies separately to each baghouse/stack. This is more stringent than limit in Minn. R. 7011.0715, subp. 1(A), which also applies to each individual emission unit.	Title I Condition: 40 CFR Section 52.21(j) (BACT); Minn. R. 7007.3000
Particulate Matter < 10 micron: less than or equal to 0.004 grains/dry standard cubic foot . This applies separately to each baghouse/stack. In addition, the following limit applies to each emission unit/baghouse/stack: CE 004: 1.5 lb/hr CE 005: 1.5 lb/hr CE 006: 0.091 lb/hr CE 007: 0.75 lb/hr CE 008: 0.78 lb/hr CE 009: 0.65 lb/hr CE 010: 0.16 lb/hr CE 016: 0.16 lb/hr	Title I Condition: 40 CFR Section 52.21(j) (BACT) and 40 CFR Section 52.21(m) (modeling); Minn. R. 7007.3000
Opacity: less than or equal to 20 percent opacity	Minn. R. 7011.0715, subp. 1(B)
MONITORING	hdr
Visible Emissions: The Permittee shall check each fabric filter stack (SV 004, SV 005, SV 006, SV 007, SV 008, SV 009, SV 010 and SV 011) for any visible emissions once each day of operation during daylight hours. During inclement weather, the Permittee shall read and record the pressure drop across the fabric filter, once each day of operation, in lieu of the visible emissions observation.	Title I Condition: Monitoring for BACT Limit (40 CFR Section 52.21); Minn. R. 7007.0800, subp. 4 and 5
Recordkeeping of Visible Emissions and Pressure Drop. The Permittee shall record the time and date of each visible emission inspection and pressure drop reading, and whether or not any visible emissions were observed, and whether or not the observed pressure drop was greater than or equal to 0.1" water.	Title I Condition: Monitoring for BACT Limit (40 CFR Section 52.21); Minn. R. 7007.0800, subp. 4 and 5
CONTROL EQUIPMENT	hdr
The Permittee shall operate and maintain the control equipment such that it achieves an overall control efficiency for Total Particulate Matter and Particulate Matter < 10 micron: greater than or equal to 99 percent control efficiency	Title I Condition: 40 CFR Section 52.21; Minn. R. 7007.3000
The Permittee shall operate and maintain the fabric filter at all times that any emission unit controlled by the fabric filter is in operation.	Title I Condition: BACT Limit (40 CFR Section 52.21); Minn. R. 7007.0800, subp. 2 and 14
Corrective Actions: The Permittee shall take corrective action as soon as possible if any of the following occur: - visible emissions are observed; - the recorded pressure drop is outside the required operating range; or - the fabric filter or any of its components are found during the inspections to need repair. Corrective actions shall return the pressure drop to within the permitted range and/or include completion of necessary repairs identified during the inspection, as applicable. Corrective actions include, but are not limited to, those outlined in the O & M Plan for the fabric filter. The Permittee shall keep a record of the type and date of any corrective action taken for each filter.	Minn. R. 7007.0800, subp. 4, 5, and 14
Periodic Inspections: At least once per calendar quarter, or more frequently as required by the manufacturing specifications, the Permittee shall inspect the control equipment components. The Permittee shall maintain a written record of these inspections.	Minn. R. 7007.0800, subp. 4, 5 and 14
PERFORMANCE TESTING	hdr
Initial Performance Test: due 180 days after Permit Issuance to measure Total Particulate Matter, Particulate Matter less than 10 microns, and Opacity. The Permittee shall select three representative stacks/baghouses for testing.	Minn. R. 7017.2020, subp. 1

TABLE A: LIMITS AND OTHER REQUIREMENTS

05/12/04

Facility Name: Northwood Panelboard Co

Permit Number: 00700019 - 001

Performance Test: due before end of each 60 months following Initial Performance Test to measure Total Particulate Matter, Particulate Matter less than 10 microns, and Opacity. The Permittee shall select three representative stacks/baghouses for testing.	Minn. R. 7017.2020, subp. 1
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TABLE A: LIMITS AND OTHER REQUIREMENTS

05/12/04

Facility Name: Northwood Panelboard Co

Permit Number: 00700019 - 001

Subject Item: GP 005 Clean Units controlled by baghouses

Associated Items: EU 006 Face and Core Dryer, EFB Rock Clean 1 & 2

EU 009 Rough Cut Saw

EU 010 Final Trim Saw

EU 011 Sander Tongue & Groove

EU 013 Board Forming

EU 014 Konus EFB Rock Clean 1

EU 015 Konus EFB Rock Clean 2

What to do	Why to do it
CLEAN UNIT	hdr
Clean Unit Designation: These units (listed in Associated Items) qualify as a Clean Unit for PM and PM10 provided the Permittee complies with the provisions of 40 CFR Section 52.21(x). This designation is effective on the Clean Unit effective date and expires 10 years after the Clean Unit effective date. The Clean Unit effective date shall be the Issuance Date of this permit.	Title I Condition: 40 CFR Section 52.21(x)(6) and Minn. R. 7007.3000
Basis for Clean Unit Designation. In addition to the BACT limits contained in this permit, the following parameters formed the basis for the BACT determination for the pollutants PM and PM10: EU 006 and EU 020 controlled by CE 009, air flow rate 19,003 dscfm EU 009 controlled by CE 004, air flow rate 43,875 dscfm, and CE 006, air flow rate 2,642 dscfm EU 010 controlled by CE 005, air flow rate 43,875 dscfm, and CE 006, air flow rate 2,642 dscfm, or CE 007, air flow rate 21,850 dscfm EU 011 controlled by CE 007, air flow rate 21,850 dscfm EU 013 controlled by CE 008, air flow rate 22,800 dscfm EU 014 controlled by CE 010, air flow rate 3,383 dscfm EU 015 controlled by CE 016, air flow rate 3,383 dscfm EU 020 controlled by CE 009, air flow rate 19,003 dscfm, CE 005, air flow rate 43,875 dscfm, and CE 006, air flow rate 2,642 dscfm	Title I Condition: 40 CFR Section 52.21(x)(6)(iv) and Minn. R. 7007.3000
Maintaining Clean Unit Designation: to maintain the Clean Unit designation, the Permittee must conform to all the restrictions listed in 40 CFR Section 52.21(x)(7). Failure to do so results in the unit losing the Clean Unit Designation.	Title I Condition: 40 CFR Section 52.21(x)(7) and Minn. R. 7007.3000

TABLE A: LIMITS AND OTHER REQUIREMENTS

05/12/04

Facility Name: Northwood Panelboard Co

Permit Number: 00700019 - 001

Subject Item: EU 012 Board Press**Associated Items:** SV 012

What to do	Why to do it
LIMITS	hdr
Total Particulate Matter: less than or equal to 15 lbs/hour . This is more stringent than limit in Minn. R. 7011.0715, subp. 1(A), which also applies.	Title I Condition: 40 CFR Section 52.21(j) (BACT); Minn. R. 7007.3000
Particulate Matter < 10 micron: less than or equal to 15 lbs/hour	Title I Condition: 40 CFR Section 52.21(j) (BACT) and 40 CFR Section 52.21(m) (modeling); Minn. R. 7007.3000
Opacity: less than or equal to 20 percent opacity	Minn. R. 7011.0715, subp. 1(B)
Volatile Organic Compounds: less than or equal to 30.9 lbs/hour . The VOC limit is on an "as VOC basis", and is to be measured using the draft Oregon "Guidance for Evaluating VOC Emissions from Drying and Hot-Pressing Activities Common to the Wood Products Industry" (attached as Appendix D to this permit).	Title I Condition: 40 CFR Section 52.21(j) (BACT); Minn. R. 7007.3000
PERFORMANCE TESTING	hdr
Initial Performance Test: due 180 days after Permit Issuance to determine total particulate matter, particulate matter < 10 microns, and volatile organic compound emissions. VOC emissions shall be measured in accordance with the draft Oregon "Guidance for Evaluating VOC Emissions from Drying and Hot-Pressing Activities Common to the Wood Products Industry" (attached as Appendix D to this permit).	Title I Condition: Monitoring for BACT limits
Performance Test: due 1,095 days after Initial Performance Test to measure Total Particulate Matter, Particulate Matter less than 10 microns, and Volatile Organic Compounds emissions. VOC emissions shall be measured in accordance with the draft Oregon "Guidance for Evaluating VOC Emissions from Drying and Hot-Pressing Activities Common to the Wood Products Industry" (attached as Appendix D to this permit).	Minn. R. 7017.2020, subp. 1

TABLE B: SUBMITTALS

05/12/04

Facility Name: Northwood Panelboard Co
Permit Number: 00700019 - 001

Table B lists most of the submittals required by this permit. Please note that some submittal requirements may appear in Table A or, if applicable, within a compliance schedule located in Table C. Table B is divided into two sections in order to separately list one-time only and recurrent submittal requirements.

Each submittal must be postmarked or received by the date specified in the applicable Table. Those submittals required by parts 7007.0100 to 7007.1850 must be certified by a responsible official, defined in Minn. R. 7007.0100, subp. 21. Other submittals shall be certified as appropriate if certification is required by an applicable rule or permit condition.

Send any application for a permit or permit amendment to:

Permit Technical Advisor
Permit Section
Air Quality Division
Minnesota Pollution Control Agency
520 Lafayette Road North
St. Paul, Minnesota 55155-4194

Also, where required by an applicable rule or permit condition, send to the Permit Technical Advisor notices of:

- accumulated insignificant activities,
- installation of control equipment,
- replacement of an emissions unit, and
- changes that contravene a permit term.

Unless another person is identified in the applicable Table, send all other submittals to:

Supervisor
Compliance Determination Unit
Air Quality Division
Minnesota Pollution Control Agency
520 Lafayette Road North
St. Paul, Minnesota 55155-4194

Send submittals that are required to be submitted to the U.S. EPA regional office to:

Mr. George Czerniak
Air and Radiation Branch
EPA Region V
77 West Jackson Boulevard
Chicago, Illinois 60604

Send submittals that are required by the Acid Rain Program to:

U.S. Environmental Protection Agency
Clean Air Markets Division
1200 Pennsylvania Avenue NW (6204N)
Washington, D.C. 20460

TABLE B: ONE TIME SUBMITTALS OR NOTIFICATIONS

05/12/04

Facility Name: Northwood Panelboard Co

Permit Number: 00700019 - 001

What to send	When to send	Portion of Facility Affected
Application for Permit Reissuance	due 180 days before expiration of Existing Permit	Total Facility
Notification of the Actual Date of Initial Startup	due 15 days after Initial Startup of ESPs or new EFBs and RTOs. Submit the name and number of the control device and the actual date of initial startup of the control device. This notification shall also state the effective and expiration dates of the Clean Unit Designation.	GP001
Notification of the Actual Date of Initial Startup	due 15 days after Initial Startup of the RTOs.	GP001
Notification of the Actual Date of Initial Startup	due 15 days after Initial Startup of the WESPs or EFBs.	GP001
Notification	due 270 days after Permit Issuance. Permittee shall specify control equipment combination to be used as BACT control, i.e. (EFBs and RTOs) or (WESPs and RTOs).	GP001
Testing Frequency Plan	due 60 days after Initial Performance Test for nitrogen oxides. The plan shall specify a testing frequency based on the test data, variability of past test results, and MPCA guidance. Future performance tests based on one-year (12 month), 36 month, and 60 intervals, or as applicable, shall be required upon written approval of the MPCA.	GP003
Testing Frequency Plan	due 60 days after Initial Performance Test for opacity and total particulate matter, particulate matter < 10 microns, carbon monoxide, nitrogen oxides, and volatile organic compound emissions. The plan shall specify a testing frequency based on the test data and MPCA guidance. Future performance tests based on one-year (12 month), 36 month, and 60 month intervals, or as applicable, shall be required upon written approval of the MPCA.	GP002
Testing Frequency Plan	due 60 days after Performance Test for opacity and total particulate matter, particulate matter < 10 microns, carbon monoxide, nitrogen oxides, and volatile organic compound emissions. The plan shall specify a testing frequency based on the test data and MPCA guidance. Future performance tests based on one-year (12 month), 36 month, and 60 month intervals, or as applicable, shall be required upon written approval of the MPCA.	GP001

TABLE B: RECURRENT SUBMITTALS

05/12/04

Facility Name: Northwood Panelboard Co

Permit Number: 00700019 - 001

What to send	When to send	Portion of Facility Affected
Excess Emissions/Downtime Reports (EER's)	due 30 days after end of each calendar quarter following Permit Issuance (Submit Deviations Reporting Form DRF-1 as amended). The EER shall indicate all periods of monitor bypass and all periods of exceedances of the limit including exceedances allowed by an applicable standard, i.e. during startup, shutdown, and malfunctions.	GP003
Semiannual Deviations Report	due 30 days after end of each calendar half-year following Permit Issuance. The first semiannual report submitted by the Permittee shall cover the calendar half-year in which the permit is issued. The first report of each calendar year covers January 1 - June 30. The second report of each calendar year covers July 1 - December 31. If no deviations have occurred, the Permittee shall submit the report stating no deviations.	Total Facility
Compliance Certification	due 31 days after end of each calendar year following Permit Issuance (for the previous calendar year). To be submitted on a form approved by the Commissioner, both to the Commissioner, and to the U.S. EPA regional office in Chicago. This report covers all deviations experienced during the calendar year. The EPA copy shall be sent to: Mr. George Czerniak, Chief, Air Enforcement and Compliance Assurance Branch, Air and Radiation Division, EPA Region V, 77 West Jackson Boulevard, Chicago, Illinois 60604.	Total Facility

APPENDIX B

Insignificant Activities and Applicable Requirements

Facility Name: Northwood Panelboard Company

Permit Number: 00700019-001

Under Minn. R. 7007.1250, subp. 1(A), the Permittee may add insignificant activities to the stationary source throughout the term of the permit without getting permit amendments. Certain exclusions apply and are listed in Minn. R. 7007.1250, subp. 2.

The following sources at the Permittee's facility qualify as insignificant activities under Minn. R. 7007.1300, subs. 2, 3 and 4 and are not required to be listed in the permit.

Minn. R. 7007.1300, subp.	Rule Description of the Activity	General Applicable Requirement
3(A)	Fuel use: space heaters fueled by, kerosene, natural gas, or propane. <i>Northwood has natural gas-fired space heaters</i>	Minn. R. 7011.0515 (PM and opacity)
3(D)(2)	Equipment venting PM/PM ₁₀ inside a building, provided that emissions from the equipment are filtered through an air cleaning system and vented inside of the building 100% of the time. <i>Northwood has <?></i>	Minn. R. 7011.0715 (PM and opacity)
3(H)(3)	Hydraulic fluid storage tanks.	Minn. R. 7011.0715 (PM and opacity)
3(H)(4)	Brazing, soldering or welding equipment.	Minn. R. 7011.0715 (PM and opacity)
3(H)(5)	Blueprint copiers and photographic processes.	Minn. R. 7011.0715 (PM and opacity)
3(H)(6)	Equipment used exclusively for melting or application of wax. <i>Northwood has slack wax tanks.</i>	Minn. R. 7011.0715 (PM and opacity)
3(J)	Fugitive emissions from roads and parking lots.	Minn. R. 7011.0105 (opacity)
4(B)	Emission units with potential emissions of less than 2.28 lb/hr or actual emissions of less than 1.0 lb/hr of PM, PM ₁₀ , NO _x , SO ₂ , and VOCs. <i>Emission units that Northwood has that qualify under this subpart include:</i> <ul style="list-style-type: none">• <i>Cold cleaner parts washers</i>• <i>Standby generators</i>	Minn. R. 7011.0715 (PM and opacity)

APPENDIX C

Modeling Parameters (as of 5/20/03)

Facility Name: Northwood Panelboard Company

Permit Number: 00700019-001

ID	Description	Stack Height (ft)	Stack Temp. (°F)	Flow Rate (acfm)	Stack Diam. (ft)	NO _x (lb/hr)	CO (lb/hr)	PM ₁₀ (lb/hr)	SO ₂ (lb/hr)
GP 001	Rotary Dryer/Lamb Burner/WESP/RTO	150	220	110,000	5.67	25.0	32.4	15.0	2.2
EU 003	Wellons Burner	117	395	56,150	5.46	22.33	20.68	4.98	8.27
GP 002	Konus Burners	80	350	46,839	4.00	12.01	80.00	10.00	1.00
EU 014	Konus EFB Rock Clean 1 - Baghouse	15	109	4000	0.75	--	--	0.16	--
EU 015	Konus EFB Rock Clean 2 - Baghouse	15	109	4000	0.75	--	--	0.16	--
SV 006	Rough Cut Saw - Baghouse	15	80.3	Non-buoyant release		--	--	1.50	--
SV 007	Final Trim Saw - Baghouse	15	80.3	Non-buoyant release		--	--	1.50	--
SV 008	Rough and Final Trim Saw - Baghouse	13	80.3	Non-buoyant release		--	--	0.09	--
SV 009	Sander Tongue & Groove - Baghouse	14	78.5	Non-buoyant release		--	--	0.75	--
SV 010	Face & Core Dryer, EFB Rock Clean - Baghouse	60	125.3	Non-buoyant release		--	--	0.65	--
SV 011	Board Forming - Baghouse	12	78.5	Non-buoyant release		--	--	0.78	--
EU 012	Board Press	110	116	120,000	8.00	--	--	15.00	--
SV 017	Conveyor Dryer - Zone 1	65	170	23,500	2.7	--	--	1.66	--
SV 018	Conveyor Dryer- Zone 2 & 3	65	180	31,600	2.9	--	--	1.66	--

TECHNICAL SUPPORT DOCUMENT
For
DRAFT AIR EMISSION PERMIT NO. 11900002-001

This Technical Support Document (TSD) is for all the interested parties of the draft permit and to meet the requirements that have been set forth by the federal regulations and Minn. R. (40 CFR, § 70.7(a)(5) and Minn. R. 7007.0850, subp.1). The purpose of this document is to provide the legal and factual justification for each applicable requirement or policy decision considered in the preliminary determination to issue the draft permit.

1. General Information

1.1. Applicant and Stationary Source Location:

Applicant/Stationary Source/Address (SIC Code: 2493)
Norbord Minnesota
4409 Northwood Road NW
Solway, MN 56678
Beltrami County

1.2. Description of the Facility

Norbord Minnesota owns and operates an Oriented Strandboard (OSB) manufacturing facility in Beltrami County, Minnesota; the facility is located approximately 10 miles west of Bemidji, Minnesota. To produce OSB, logs are sliced into small strands, which are then dried, blended with a phenol-formaldehyde resin and wax mixture, formed into layers, and finally pressed into wood panels. The equipment used for the process consists of two rotary drum dryers with two wood-fired Lamb burners, one flatline conveyor dryer with a Wellons wood-fired burner, one multi-opening board press, two Konus wood-fired burners which are the heat source for the press, and various handling, finishing, and forming processes.

The pollution control equipment and main pollutants of concern from the emission units at the facility are as follows: the two rotary dryers and Lamb burners are sources of Particulate Matter (PM and PM₁₀), Volatile Organic Compounds (VOCs), Carbon Monoxide (CO), and Nitrogen Oxides (NO_x). The dryers/Lamb burners are currently controlled by an Eelectrified Filter Bed (EFB) which controls particulate matter. The conveyor dryer and Wellons burner are also sources of PM, PM₁₀, VOC, CO and NO_x. The press is uncontrolled and is primarily a source of VOC. The Konus burners are sources of PM, PM₁₀, VOC, CO and NO_x and are each controlled by multiclones and an EFB. The in-plant particulate sources are generally controlled by baghouses. There are also fugitive particulate sources such as bark and fuel piles and paved and unpaved roads.

1.3 Description of any changes allowed with this permit issuance

This permit incorporates limits and control requirements resulting from a backwards-Prevention of Significant Deterioration (PSD) analysis performed by the Permittee, and as submitted in May 2001 and as updated. The Permittee will install a Regenerative Thermal Oxidizer (RTO) on the rotary dryers/Lamb burners, primarily for control of VOC, but also for control of particulate matter and CO. The RTO will be in place following a particulate control device, either a new EFB system or a Wet Electrostatic Precipitator (WESP). The EFB or WESP, and RTO are to be installed within 18 months of issuance of this Title V permit. Best Available Control Technology (BACT) limits for PM, PM₁₀, VOC, CO and NO_x have been established as applicable on the rotary dryers/Lamb burners, Konus burners, board press, and various operations such as sawing and forming which are currently controlled by baghouses.

Some requirements and conditions from previous permits have not been incorporated into this permit. The permit for installation of the conveyor dryer system had requirements that are no longer required. For example, the permit required optimization of recirculation rates; this has been completed and operation of the conveyor dryer has been changed since originally permitted. Also, accounting of fugitive VOC emissions from flanges, valves, etc. has been removed since there was no basis for this requirement. Modeling parameters incorporated into the conveyor dryer permit have been superseded by modeling parameters incorporated into this Title V permit.

The previous total facility permit (1750-87-OT-1) used a basis of limited hours of operation for some units as the means to keep the facility non-major for PSD for PM. This is no longer required, since the facility is a major facility and has gone through the proper PSD analysis.

1.4 Permitting History

Permit Number and Issuance Date	Action Authorized
1750-80-I-1 (3/25/80)	Construction of facility
Stipulation agreement (2/4/85)	Particulate matter from Lamb burners greater than allowable; PM from entire facility over major source threshold, therefore facility is a major PSD source. Requirements: install control equipment for Lamb burners and Konus burners.
1750-87-OT-1 (4/13/87)	Total facility permit
00700018-004 (1750-94-I/O-1) (4/7/95)	PSD permit for installation of conveyor dryer.

1.5. Facility Emissions:

Table 1. Total Facility Limited Potential to Emit Summary:

GP/ EU/ SV No.	Emission Unit Description	PM tpy	PM₁₀ tpy	SO₂ tpy	NO_x tpy	CO tpy	VOC tpy	Total HAPs tpy
GP 001	Rotary Dryers/Lamb Burners	53	53	9.6	110	140	64	35
GP 002	Konus Burners	37	37	4.4	53	190	46	0.33
GP 003	Conveyor Dryer System	36	36	36	98	91	57	18
GP 004	Baghouses	24	24	---	---	---	---	---
EU 012	Press	66	66	---	---	---	135	64
	Fugitive Sources	23	23	---	---	---	---	---
		PM tpy	PM₁₀ tpy	SO₂ tpy	NO_x tpy	CO tpy	VOC tpy	Total HAPs
Total Facility Limited Potential Emissions		240	240	50	260	420	300	120

Table 2. Facility (TF) and Permit Classification

Classification	Major Source	*Synthetic Minor	*Minor
Prevention of Significant Deterioration	PM, PM ₁₀ , NO _x , VOC, CO		SO ₂
Nonattainment Area Review	NA	NA	NA
Part 70 Permit Program	PM, PM ₁₀ , NO _x , VOC, CO		SO ₂
Part 63 National Emissions Standards for Hazardous Air Pollutants (NESHAP)	X		

* Refers to potential emissions that are less than those specified as major by 40 CFR § 52.21, 40 CFR pt. 51 Appendix S, 40 CFR pt. 70, and 40 CFR pt. 63.

2. Regulatory and/or Statutory Basis

Summary Regulatory and/or Statutory Basis of the Emission or operational Limit

Regulatory Overview of Facility

EU, GRP, or SV #	Applicable Regulations	Comments:
GP 001	40 CFR § 52.21	Prevention of Significant Deterioration (PSD). BACT limits set for PM, PM ₁₀ , NO _x , CO, VOC.
	Minn. R. 7011.0610	Standards of Performance for Fossil-Fuel-Burning Direct Heating Equipment
GP 002	40 CFR § 52.21	Prevention of Significant Deterioration (PSD). BACT limits set for PM, PM ₁₀ , NO _x , CO, VOC.
	Minn. R. 7011.0515	Standards of Performance for New Indirect Heating Equipment
GP 003	40 CFR § 52.21	Prevention of Significant Deterioration (PSD). BACT limits set for PM, PM ₁₀ , NO _x , CO, VOC.
	40 CFR pt. 60 Subp. Dc	Standards of Performance for Small and Industrial Commercial and Institutional Steam Generating Units
	Minn. R. 7011.0715	Standards of Performance for Post-1969 Industrial Process Equipment
GP 004	40 CFR § 52.21	Prevention of Significant Deterioration (PSD). BACT limits set for PM, PM ₁₀ .
	Minn. R. 7011.0715	Standards of Performance for Post-1969 Industrial Process Equipment
EU 012	40 CFR § 52.21	Prevention of Significant Deterioration (PSD). BACT limits set for PM, PM ₁₀ , VOC.
	Minn. R. 7011.0715	Standards of Performance for Post-1969 Industrial Process Equipment

The facility is a major source for HAPs. At the time that this permit was drafted, it appears that Norbord will be subject to at least two of the proposed National Emission Standards for Hazardous Air Pollutants (NESHAPs), which are also referred to as the Maximum Achievable Control Technology (MACT) standards. It appears that Norbord will be subject to the Plywood and Composite Wood Products MACT as well as the Industrial/Commercial/ Institutional Boilers and Process Heaters MACT standard.

3. Technical Information

3.1 PSD Permitting

3.1.1 Historical Background

In March 1980, Norbord was issued a permit for construction and operation of the facility as a minor source under the New Source Review (NSR) program. Following testing required by the permit, Norbord determined that PM emissions were over the threshold for applicability in the NSR PSD program. The permit was amended to limit PM emissions by requiring additional pollution control equipment on the Konus burners and Lamb burners.

In 1988, Norbord determined that the facility might be a major source for pollutants other than PM based on stack test results. The MPCA issued a Notice of Violation requiring Norbord to submit a PSD applicability analysis and permit application. Norbord submitted an application for a PSD permit in December 1989. The MPCA requested additional information, to which Norbord responded. In December 2000, the MPCA and Norbord met to resolve the outstanding PSD applicability issue. Norbord subsequently submitted an updated PSD permit application dated May 30, 2001.

The applicability analysis determined that the pollutants which were to be subject to PSD review included PM/ PM₁₀, CO, VOC, and NO_x. The emission units to be considered in the BACT analysis were the rotary dryers/Lamb burners, the Konus burners, the board press, and the baghouses. The conveyor dryer system was not included in this BACT analysis since it underwent a PSD review as part of the permitting process in 1995.

3.1.2 BACT Analysis

Results from the BACT analysis are summarized in attachments to this TSD. The control technologies proposed as BACT for GP 001, the Lamb burners and rotary dryers, are either a WESP or EFB, either of which would be followed by a RTO for control of PM/PM₁₀, VOCs and CO and good combustion control for NO_x. BACT for the Konus burners (thermal oil heater) was determined to be continued use of the multiclones followed by EFBs for particulate control along with good operation for control of the other pollutants. No control technology was selected for the press operation. Good operation along with a limit on the amount of softwood furnish that can be used (no more than 5 percent) were established as BACT. Continued use of the baghouses was determined to be BACT for the operations currently controlled by baghouses.

3.1.3 Ambient Air Quality Analysis

The modeling analysis is divided into two major parts based on U.S. Environmental Protection Agency (EPA) modeling guidance, i.e. the Significance Analysis and the Full Impact Analysis. The Significance Analysis was performed with the maximum allowable emissions associated with the post-modification facility. The modeled results are then compared to Modeling Significance Levels (MSLs) to determine whether the facility's proposed emissions will have a significant impact on the area surrounding the plant. A Full Impact Analysis is then performed for each pollutant where the maximum concentration as determined in the Significance Analysis exceeds the corresponding MSL.

Results of the Significance Analysis showed that further analysis was not required for SO₂ and CO (see table below).

Pollutant	Averaging Period	Maximum Concentration (µg/m³)	MSL (µg/m³)
SO ₂	Annual	0.35	1.0
	24-Hour	3.4	5.0
	3-Hour	6.5	25
CO	8-Hour	95	500
	1-Hour	210	2000

More refined dispersion modeling, using ISCST3, was done to compare modeled impacts to federal ambient air quality standards for NO_x and PM₁₀. The Full Impact Analysis is divided into National Ambient Air Quality Standard (NAAQS) and PSD Increment Analyses.

A summary of the National Ambient Air Quality Standards (NAAQS) and Minnesota Ambient Air Quality Standards (MAAQS) modeling results for NO_x and PM₁₀ are given below:

Pollutant	Ave. Period	Maximum Predicted Impacts (µg/m³)		National Ambient Air Quality Standard		Minnesota Ambient Air Quality Standard	
		Conc. w/o bkgd	Conc. w/bkgd	Primary Standard (µg/m³)	Secondary Standard (µg/m³)	Primary Standard (µg/m³)	Secondary Standard (µg/m³)
NO _x	Annual	2.0	9.5	100	100	100	100
PM ₁₀	Annual	6.8	26	50	50	--	--
	24-Hour	55	97	150 ^a	150 ^a	--	--

^a Not to be exceeded more than once per year; therefore, the maximum second-highest results are shown.

A summary of the increment consumption results for PM₁₀ and NO_x is given below:

Pollutant	Avg. Period	Maximum Modeled Impact (µg/m³)	PSD Class II Increment (µg/m³)
NO _x	Annual	2.0	25
PM ₁₀	Annual	5.5	17
	24-hour	29	30 ^a

^a Not to be exceeded more than once per year; therefore, the maximum second-highest results are shown.

Although the increment modeled result for PM₁₀ for the 24-hour is close to the allowable increment, it should be noted that emission limits as placed in the permit are lower than emission rates modeled for some of the pollutants and emission units. Therefore, the increment modeled results would actually be lower than was modeled. As a result of the modeling, it was determined that none of the applicable ambient air quality standards would be violated and that none of the applicable increments established by the PSD rule would be violated.

3.2. Periodic Monitoring

In accordance with the Clean Air Act, it is the responsibility of the owner or operator of a Facility to have sufficient knowledge of the Facility to certify that the Facility is in compliance with all applicable requirements. In evaluating the monitoring included in the permit for the remaining applicable requirements, the MPCA considered the following:

- the initial compliance method;
- the format of the applicable requirement;
- the likelihood of violating the applicable requirement;
- whether add-on controls are necessary to meet the emission limit;
- the variability of emissions over time;
- the type of monitoring, process, maintenance, or control equipment data already available for the emission unit;
- the technical and economic feasibility of possible periodic monitoring methods; and
- the kind of monitoring found on similar units.

The table below summarizes the periodic monitoring requirements for those emission units for which the monitoring required by the applicable requirement is nonexistent or inadequate.

Emission Units Subject to Periodic Monitoring

EU/ GP/ CE	Emission limit (Basis)	Monitoring	Discussion
FC Total Facility	Process throughput: > 95% hardwood as furnish (BACT limit for press)	Recordkeeping	Limit on hardwood furnish is BACT limit for press, to limit amount of softwood that can be used in process, and thus limit amount of VOCs. Although limit is due to BACT analysis for press, limit is for total production process and thus is placed at the total facility level.
	On-site paved road silt measurement	Testing	Silt measurements of the on-site paved roads are to be performed and compared to results used in modeling. Norbord used silt measurements lower than default values, and since increment results were close to allowable, the values used in the modeling must be verified.

<p>GP 001: Rotary Dryers/Lamb Burners</p>	<p>PM, PM₁₀: ≤ 0.49 lb/ton oven dried product (lb/ODT) (BACT limit)</p> <p>PM₁₀: ≤ 12.2 lb/hr (modeling limit)</p> <p>Opacity: ≤ 20 % with exception (Minn. R. 7011.0610)</p> <p>VOC: ≤ 0.59 lb/ODT (BACT limit)</p> <p>Temperature limit ≥ 1450 °F at the combustion chamber</p> <p>CO: ≤ 32.4 lb/hr; ≤ 1.3 lb/ODT (BACT, modeling limit)</p> <p>NO_x: ≤ 25 lb/hr; ≤ 1.0 lb/ODT (BACT, modeling limit)</p> <p>SO₂: ≤ 4.0 lb/mmBtu (Minn. R. 7011.0610)</p> <p>Control efficiency ≥ 90% for VOC, ≥ 90% for PM, PM₁₀</p>	<p>Temperature monitoring (RTO), monitoring of # of fields on-line (WESP – if installed), recordkeeping, O & M, inspections</p> <p>Re-occurring performance testing</p>	<p>Prior to installation of new EFB or WESP/RTO, Permittee must continue to monitor and record parameters for existing EFB.</p> <p>WESP or EFB/RTO is control primarily for PM, PM₁₀, VOCs, but also CO.</p> <p>Permittee to perform initial stack tests (after installation of new EFB or WESP/RTO) for opacity, PM, PM₁₀, CO, NO_x, and VOCs, then propose future testing frequency based on test results.</p> <p>Internal inspections of control equipment for this system can be done on an annual basis rather than quarterly. The system would need to be shut down for many days for each inspection, since the RTO needs time to cool down to allow for internal inspection. This leads to many days of lost production. In addition, there is continuous monitoring of the equipment to ensure good operation, so annual internal inspection should be sufficient.</p> <p>Design based PTE for each unit, using AP-42, is less than rule limit of 4.0 lb/mmBtu; therefore, no periodic monitoring is required.</p> <p>VOC emission limit and performance testing to be conducted in accordance with draft Oregon guidance, Appendix D of permit.</p> <p>Specific testing to verify control efficiency is not needed. Although control efficiencies are to be included in permits, the efficiency condition is enforceable as a practical matter as long as the operating parameters and assumptions depended upon to determine that the control equipment would have a given efficiency are included in the permit. The monitoring and O&M requirements for the control equipment serve this purpose.</p> <p>The Permittee intends to install three RTOs, but will generally use any two at a time, with the third one available as back-up. All monitoring, inspection requirements, etc. will be identical for all three RTOs. Performance testing will be conducted with two RTOs on line, to verify proper operation with two RTOs.</p>
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<p>GP 002 (Konus Burners)</p>	<p>PM, PM₁₀: ≤ 0.21 lb/mmBtu (limits set due to BACT)</p> <p>PM₁₀: ≤ 8.4 lb/hr (modeling limit)</p> <p>Opacity: ≤ 20 % with exception (Minn. R. 7011.0610)</p> <p>VOC: ≤ 0.26 lb/mmBtu (BACT limit)</p> <p>CO: ≤ 44 lb/hr; ≤ 1.1 lb/mmBTU (BACT, modeling limit)</p> <p>NO_x: ≤ 12 lb/hr; ≤ 0.30 lb/mmBTU (BACT, modeling limit)</p> <p>SO₂: ≤ 1.0 lb/hr (BACT limit)</p> <p>Control efficiency ≥ 95% for PM, PM₁₀</p> <p>EFB Parameters: Pressure drop across the EFB ≥ 1.0 inches W.C. and ≤ 6 inches W.C.; EFB Bed Voltage: ≥ 5.0 kV; EFB Ionizer Voltage: ≥ 15.0 kV</p>	<p>Re-occurring performance testing; monitoring, recordkeeping</p>	<p>Permittee to perform initial stack tests for opacity, PM, PM₁₀, CO, NO_x, and VOCs, then propose future testing frequency based on test results.</p> <p>Monitoring of EFB is done to ensure proper operation of EFB, which is necessary for obtaining particulate control and meeting particulate limits.</p> <p>Specific testing to verify control efficiency is not needed. Although control efficiencies are to be included in permits, the efficiency condition is enforceable as a practical matter as long as the operating parameters and assumptions depended upon to determine that the control equipment would have a given efficiency are included in the permit. The monitoring and O&M requirements for the control equipment serve this purpose.</p>
<p>GP 003 (Conveyor Dryer System)</p>	<p>PM, PM₁₀: ≤ 8.3 lb/hr ; 0.10 lb/mmBtu (limits set due to BACT, modeling)</p> <p>Opacity: ≤ 20 % with exception (NSPS, subp. Dc)</p> <p>NO_x: ≤ 22.4 lb/hr ; 0.27 lb/mmBtu (limits set due to BACT, modeling)</p> <p>CO: ≤ 20.7 lb/hr ; 0.25 lb/mmBtu (limits set due to BACT, modeling)</p> <p>VOC: ≤ 0.16 lb/mmBtu (BACT limit)</p> <p>ESP: # of fields on line ≥ 2</p> <p>Control efficiency ≥ 95% for PM, PM₁₀ (note: this is control efficiency for ESP used for Wellons burner)</p> <p>Oven dried strand</p>	<p>COMS; monitoring of # of fields on-line (ESP) re-occurring performance testing</p> <p>Recordkeeping for production limits</p>	<p>COMS is required by NSPS for the Wellons burner</p> <p>Initial performance test to be 3 years from permit issuance (system was tested fall '03). Past NO_x testing has shown results close to limit, however, results have been fairly consistent and are dependent on fuel type, which doesn't change. Future NO_x testing frequency will be proposed based on test results. Performance testing every 5 years for PM, PM₁₀, VOC, CO – past test results have been 50% of limit or lower.</p> <p>Internal inspections of control equipment for this system can be done on an annual basis rather than quarterly. This system has a continuous opacity monitor, which in effect continuously monitors the operation of the ESP. Past experience has also indicated that quarterly internal inspections are not needed for this type of equipment.</p>

	<p>Production: ≤ 37550 lb/hr – 8-hr block average (limit set due to performance test);</p> <p>≤ 35000 lb/hr – 30-day rolling average (limit set as result of PSD analysis)</p>		<p>Specific testing to verify control efficiency is not needed. Although control efficiencies are to be included in permits, the efficiency condition is enforceable as a practical matter as long as the operating parameters and assumptions depended upon to determine that the control equipment would have a given efficiency are included in the permit. The monitoring and O&M requirements for the control equipment serve this purpose.</p> <p>VOC emission limit and performance testing to be conducted in accordance with draft Oregon guidance, Appendix D of permit.</p>
GP 004 (Baghouses)	<p>PM, PM₁₀: ≤ 0.004 gr/dscf (BACT limit); individual lb/hr limits as listed in permit (modeling limits)</p> <p>Opacity: ≤ 20 % (Minn. R. 7011.0715)</p>	Check of visible emissions on a daily basis; performance testing	<p>Permittee is required to test at least three baghouses every 5 years, and should select 3 baghouses which are representative of the others. However, CE 006, CE 010 and CE 016 do not have to be tested; they are all for additional control (either for EFBs or other baghouses), and are low flow systems; emissions from these baghouses would be expected to be quite low.</p>
EU 012 (Board Press)	<p>PM, PM₁₀: ≤ 15 lb/hr (BACT limit)</p> <p>Opacity: ≤ 20 % (Minn. R. 7011.0715)</p> <p>VOC: ≤ 30.9 lb/hr (BACT limit)</p>	Re-occurring performance testing	<p>Performance testing every 3 years was determined to be sufficient, since there is no requirement at this time for any control or restriction for the press. (BACT was determined to be “no control.”) In the future, however, MACT may require control of the press. MACT would also require additional monitoring and recordkeeping.</p> <p>VOC emission limit and performance testing to be conducted in accordance with draft Oregon guidance, Appendix D of permit.</p>

3.3. Clean Unit Designation

The following emission units have been designated as Clean Units:

- Lamb burners and dryers (GP 001), for PM, PM₁₀, CO, and VOC – since a WESP or EFB and and RTO, are required control as a result of the BACT analysis performed as part of this permit action. The Clean Unit Designation (CUD) effective date is the startup date of the RTO, and expiration date is 10 years after the effective date.
- Konus Burners (GP 002), for PM, PM₁₀, CO, and VOC – since investments have been made in 2002 and 2003 in control loops programming, oxygen sensors installation and wood fuel segregation which eliminated use of fine/dusty wood residues as fuel. These investments lead to a reduction in PM₁₀, CO, and VOC emissions, and were required to ensure compliance with limits as set in permit. The CUD effective date is the permit issuance date, and the expiration date will be ten years from the effective date.

- Conveyor dryer system (GP 003), for PM, PM₁₀, VOC, CO, and NO_x – since an ESP and centrifugal collectors were installed, and since the conveyor dryer technology itself was an investment to mitigate VOC emissions. Also, the Wellons burner was installed with a staged combustion system (NO_x control). The CUD effective date is March 3, 2003 (rule effective date), and the expiration date is March 1, 2006 (10 years from startup of system).
- Emission units controlled by Baghouses (GP 005) for PM and PM₁₀. The CUD effective date is the permit issuance date, and the expiration date will be ten years from the effective date.

3.4. VOC Emission Calculations

The VOC limits in the permit have been adjusted by multiplying the limits proposed by Norbord by a factor of 1.22. This is the factor needed to adjust VOCs from Method 25A as carbon to 25A as propane. These emission limits may be revised based upon review of testing results to ensure that the VOC limit properly accounts for the total VOC mass. Norbord has prior testing and has done recent testing (fall of 2003 – these test results were not available at time of public noticing this permit) in which specific VOC compounds were also tested for. VOC emission limits may be adjusted to account for total VOC mass. These test results will be reviewed prior to EPA 45-day review, and adjustments to the limits may then be made in the permit sent to EPA review.

3.5. Deviations from Delta Guidance

In general, the permit meets the MPCA Delta Guidance for ordering and grouping of requirements. One area where this permit deviates slightly from Delta guidance is in the use of appendices. While appendices are fully enforceable parts of the permit, in general, any requirement that the MPCA thinks should be tracked (e.g., limits, submittals, etc.), should be in Table A or B. The main reason is that the appendices are word processing sections and are not part of the tracking system. Violation of the appendices can be enforced, but the computer system will not automatically generate the necessary enforcement notices or documents. Staff must generate these.

Appendix B is a listing of the Facility's Insignificant Activities and their applicable requirements. This is a fairly standard way to include these in the permit, since it is highly unlikely the MPCA would need to have these as trackable items in Delta.

Another area where the permit deviates from guidance is in the use of groups for requirements that apply to individual pieces of equipment. This is done in order to streamline the permit.

3.6. Comments Received

The only comments received during the public notice period were from Norbord Minnesota. Their comment letter is attached to this document. Changes were made to the permit. These changes are summarized here:

EU, GRP, or SV #	Permit Change
FC (Total Facility)	FACILITY LIMIT: Weekly Recordkeeping changed to Daily Recordkeeping.
	ON-SITE ROAD SILT LOADING MEASUREMENT: Added underlined text as clarification: 2. If the measured silt loading is less than or equal to the silt loading assumed in the <u>most recent dispersion modeling analysis on record with the Agency</u> , no further action is required.
	ON-SITE ROAD SILT LOADING MEASUREMENT: Removed following text: 3. If the measured silt loading is more than the silt loading assumed in the dispersion modeling, Norbord should re-model using the measured silt loading. Model results are due 45 days after the submittal of the results of the silt measurements. 4. If the dispersion modeling shows compliance with all standards and increments, no further action is required. 5. If the modeling does not show compliance with ambient standards (including increment), Norbord shall propose and implement controls (sweeping, flushing, vacuuming, etc.). If the measured silt loading is such that it is clear that dispersion modeling would not yield modeled compliance with all applicable requirements, Norbord may proceed directly to the proposal and implementation of mitigative controls. The proposal for controls and/or dispersion modeling results are due 45 days after submittal of the silt content measurements. 6. Within 60 days of implementing the controls, Norbord will re-test the on-site roads for silt content. Again, all notifications and reporting shall be in accordance with those required for stack emissions testing. 7. If the silt content is less than the silt content used in the modeling that demonstrated compliance with all standards, no further action is required. 8. If the silt content is greater than the silt content used in the modeling that demonstrated compliance with ambient standards, repeat steps 3-7. Replaced with: 3. If the measured silt loading is more than the silt loading assumed in the most recent dispersion modeling analysis on record, Norbord shall submit a proposed compliance plan to the Agency within 45 days after the submittal of the silt measurements. The compliance plan will outline the Permittee's proposed plan and timetable and shall be submitted to the Commissioner for approval. The purpose of the plan will be to show compliance with all ambient standards and increments. 4. The proposed compliance plan may include additional on-site road silt loading measurements, additional dispersion modeling, and/or mitigative controls (such as sweeping, flushing, vacuuming, etc.). The Plan submitted by the Permittee will cover the steps as described above, yet allows for more flexibility while still ensuring compliance with the NAAQS and increment standards.
	CLEAN UNITS: Removed last sentence of requirement (Loss of Clean Unit status occurs if any of the following occur: ...), as it is redundant (it's contained in next requirement)
	CLEAN UNITS: Loss of Clean Unit Status: The last sentence was changed as follows, since there is more than one way to calculate applicability: The Permittee must use the actual to-projected actual test (40 CFR Section 52.21(a)(2)(iv)(c)) calculation methodologies in 40 CFR

	Section 52.21(a)(2)(iv) to determine applicability of 40 CFR Section 52.21 for this modification and all subsequent modifications until the unit requalifies for Clean Unit status.
GP 001	CONTROL EQUIPMENT – EFB Citations for requirements for Pressure Drop and Voltages were changed to reflect that these requirements are Title I Conditions after installation of new EFB (if installed).
	CONTROL EQUIPMENT – WESP Requirement deleted (Recordkeeping of Number of Fields on Line...) since it is repeated in next requirement.
	CLEAN UNIT Basis for Clean Unit Designation: efficiencies removed from this part. The efficiency is included elsewhere in permit and is inherent in emission limits. Also, this part is meant more for specifying parameters of emission unit, not control equipment.
GP 002	CONTROL EQUIPMENT Part of the requirement under Corrective Actions was removed (greater than normal visible emissions are observed) since this was mistakenly copied over from other requirement and does not belong in this type of control equipment.
	CONTROL EQUIPMENT Quarterly and Annual Inspections requirements were added to be consistent with requirements for other control equipment which is similar, e.g. WESP.
	CLEAN UNIT Basis for Clean Unit Designation: efficiencies removed from this part. The efficiency is included elsewhere in permit and is inherent in emission limits. Also, this part is meant more for specifying parameters of emission unit, not control equipment.
GP 004	LIMITS PM10: Changes were made to numbering of Control Equipment, so lb/hr numbers are now associated with different CE's than in public noticed draft permit. Also, CE 010 and CE 016 limit in lb/hr changed from 0.14 to 0.16 lb/hr. There was typo in previous permits; the emission rates modeled were the 0.16 lb/hr rate.
	VOC Limits – the draft TSD, draft permit and public notice for the draft permit all specified that the final VOC limits may be revised from the draft permit based upon review of testing conducted by Norbord, to account for VOC on a total VOC mass basis. The public notice stated that the emission limits would be revised, and if anyone was interested in being notified about the change, that they could ask to be notified. Norbord provided information to support revised VOC limits. The VOC emission limits and performance tests will be conducted in accordance with the draft Oregon guidance, which is attached as an appendix to the permit. The changed limits are:
GP 001	VOC: ≤ 0.59 lb/ODT (previously ≤ 0.44 lb/ODT)
GP 003	VOC: ≤ 0.16 lb/mmBTU (previously ≤ 0.13 lb/mmBTU)
EU 012	VOC: ≤ 30.9 lb/hr (previously ≤ 19.3 lb/hr)

4. Conclusion

Based on the information provided by Norbord Minnesota, the MPCA has reasonable assurance that the proposed operation of the emission facility, as described in the Air Emission Permit No. 00700019-001, and this TSD, will not cause or contribute to a violation of applicable federal regulations and Minnesota Rules.

Staff Members on Permit Team: Dave Crowell, Sarah Kilgriff

Peer Review: Greg Kvaal

Attachment: CD-01 Forms

Others specified in section 3

Summary of Technologies Considered for BACT Analysis for Rotary Dryers with Lamb Burners

<i>Process Equipment</i>	<i>Pollutant</i>	<i>Technology Considered</i>	<i>Comments</i>
Rotary Dryers/Lamb Burners (existing control equipment is EFB)	PM/PM ₁₀	Baghouse	Not technically feasible. High moisture content of exhaust stream would cause blinding of fabric filter.
		Electrostatic Precipitator (ESP)	Not technically feasible. “Sticky” nature of particles makes re-entrainment of particles problem.
		Wet Electrostatic Precipitator (WESP) or Electrified Filter Bed (EFB), with Regenerative Thermal Oxidizer (RTO)	Technically feasible. Selected as BACT.
		Multiclone/EFB	Technically feasible. Control efficiency less than WESP or EFB/RTO
		Good Design/Operation	Considered baseline.
	CO and VOC*	Regenerative Catalytic Oxidation	Norbord considers not technically feasible; however, MPCA is aware of a facility using an RCO or TCO. Regardless, efficiency would be no more, and may be less, than WESP or EFB/RTO, which has been selected as BACT.
		WESP or EFB/RTO	Technically feasible. Selected as BACT.
		Biofiltration (for VOC)	Technically feasible. Control efficiency less than for WESP or EFB/RTO, which is selected as BACT.
		Good Design/Operation	Considered baseline.
	NO _x	Selective Catalytic Reduction (SCR)	Not technically feasible. System would need to be installed downstream of particulate control to avoid poisoning of catalyst by wood ash particles; there would not then be the required temperature for the system to operate. Also, moisture content of exhaust stream would inhibit efficiency of system.

		Selective Non-Catalytic Reduction (SNCR)	Not technically feasible. This system would require injection of ammonia at combustion site, which would then carry through the process which could adversely affect the final product.
	NO _x (continued)	Water/Steam Injection	Not technically feasible. The technology requires injection of moisture. Since the purpose of the emission unit is to dry wood wafers, introduction of moisture into the process is not acceptable.
		Staged Combustion	Technically feasible. However, good design and operation is expected to achieve emission rate comparable to what could be expected with this technology.
		Low-NO _x Burner	Technically feasible. However, good design and operation is expected to achieve emission rate comparable to what could be expected with this technology.
		Flue Gas Recirculation	Technically feasible. However, NO _x reduction would be minimal due to nature of fuel used (wood, which is nitrogen-rich); also, this would cause decreased production due to decrease of heat capacity of burners.
		Reduced Air Preheat	Technically feasible. However, NO _x reduction would be minimal due to nature of fuel used (wood, which is nitrogen-rich); also, this would cause decreased production due to decrease of heat capacity of burners.
		Low Excess Air	Technically feasible. However, due to fuel variability, NO _x reductions would be non-existent or marginal.
		Good Design/Operation	Considered baseline. Selected as BACT.

* Carbon Monoxide and VOCs were considered together, since generally the same technologies are used to control these pollutants.

Summary of Technologies Considered for BACT Analysis for Konus Burners

<i>Process Equipment</i>	<i>Pollutant</i>	<i>Technology Considered</i>	<i>Comments</i>
Konus Burners (existing control equipment is Multiclones/EFB)	PM/PM ₁₀	Baghouse	Technically feasible. Cost effectiveness is \$7000/ton and thus this technology was not selected as BACT, since cost is high for particulate control and since additional control over what is currently achieved is small.
		Multiclone/EFB	Technically feasible. Selected as BACT.
		Electrostatic Precipitator (ESP)	Technically feasible. Same or lesser efficiency as multiclone/EFB
		Wet Electrostatic Precipitator (WESP)	Technically feasible. Same or lesser efficiency as multiclone/EFB
		EFB	Technically feasible. Lower efficiency would be achieved than with existing control equipment.
		Good Design/Operation	Considered baseline.
	CO and VOC*	RCO; RTO; WESP/RTO	Technically feasible, however, using a combustion-based control device to control a combustion-based process is not logical. Also, emission source is a small emission source, and cost effectiveness would be too high (at least \$8000/ton when considering combined pollutants, i.e. VOC, CO, PM ₁₀).
		Good Design/Operation	Considered baseline. Selected as BACT.
	NO _x	Selective Catalytic Reduction (SCR)	Not technically feasible. System would need to be installed downstream of particulate control to avoid poisoning of catalyst by wood ash particles; there would not then be the required temperature for the system to operate. Also, moisture content of exhaust stream would inhibit efficiency of system.
		Selective Non-Catalytic Reduction (SNCR)	Not technically feasible. SNCR requires ammonia to be injected within a specific temperature range, but fuel type/ characteristics vary which would it impossible to assure proper temperature.

	NO _x (continued)	Water/Steam Injection	Not technically feasible. This technology is most effective when thermal NO _x is predominant. However NO _x from the Konus burners, which burn wood, is mostly fuel-derived.
		Staged Combustion	Technically feasible. However, good design and operation is expected to achieve emission rate comparable to what could be expected with this technology.
		Low-NO _x Burner	Technically feasible. However, good design and operation is expected to achieve emission rate comparable to what could be expected with this technology.
		Flue Gas Recirculation	Technically feasible. However, NO _x reduction would be minimal due to nature of fuel used (wood, which is nitrogen-rich); also, this would cause decreased production due to decrease of heat capacity of burners.
		Reduced Air Preheat	Technically feasible. However, NO _x reduction would be minimal due to nature of fuel used (wood, which is nitrogen-rich); also, this would cause decreased production due to decrease of heat capacity of burners.
		Low Excess Air	Technically feasible. However, due to fuel variability, NO _x reductions would be non-existent or marginal.
		Good Design/Operation	Considered baseline. Selected as BACT.

* Carbon Monoxide and VOCs were considered together, since generally the same technologies are used to control these pollutants.

Summary of Technologies Considered for BACT Analysis for Operations Controlled by Baghouses

<i>Process Equipment</i>	<i>Pollutant</i>	<i>Technology Considered</i>	<i>Comments</i>
Rock Cleaning, Product Handling, Finishing, Blending/Forming	PM/PM10	Baghouse	Technically feasible. Selected as BACT.
		ESP	Technically feasible. Lower efficiency than baghouse.
		WESP	Technically feasible. Lower efficiency than baghouse.
		Multiclones/EFB	Technically feasible. Lower efficiency than baghouse.
		EFB	Technically feasible. Lower efficiency than baghouse.
		Good Design/Operation	Considered baseline.
Blending/Forming	VOC	RCO/RTO	Technically feasible. Cost effectiveness too high due to very low VOC content of exhaust.
		Good Design/Operation	Considered baseline. Selected as BACT.

Summary of Technologies Considered for BACT Analysis for Board Press

<i>Process Equipment</i>	<i>Pollutant</i>	<i>Technology Considered</i>	<i>Comments</i>
Board Press	PM/PM10	Baghouse	Not technically feasible. Baghouse likely to be easily blinded due to use of waxes and resins in process.
		Electrostatic Precipitator (ESP)	Technically feasible.
		Wet Electrostatic Precipitator (WESP)	Technically feasible.
		Multiclone/EFB	Technically feasible.
		EFB	Technically feasible.
		RCO/RTO	Technically feasible.
		Good Design/Operation	Considered baseline. Selected as BACT
	CO and VOC*	RCO/RTO	Technically feasible. Cost effectiveness is \$14,000/ton which makes this technology economically infeasible.
		Biofilter (for VOC)	Technically feasible. Cost effectiveness is \$16,000/ton which makes this technology economically infeasible.
		Good Design/Operation	Considered baseline. Selected as BACT

* Carbon Monoxide and VOCs were considered together, since generally the same technologies are used to control these pollutants.