



Mitchell E. Daniels, Jr.
Governor

Thomas W. Easterly
Commissioner

100 North Senate Avenue
Indianapolis, Indiana 46204
(317) 232-8603
(800) 451-6027
www.IN.gov/idem

TO: Interested Parties / Applicant
DATE: August 2, 2007
RE: BriMar Wood Innovations, Inc. / 039-24908-00645
FROM: Nisha Sizemore
Chief, Permits Branch
Office of Air Quality

Notice of Decision: Approval - Registration

Please be advised that on behalf of the Commissioner of the Department of Environmental Management, I have issued a decision regarding the enclosed matter. Pursuant to IC 4-21.5-3-4(d) this order is effective when it is served. When served by U.S. mail, the order is effective three (3) calendar days from the mailing of this notice pursuant to IC 4-21.5-3-2(e).

If you wish to challenge this decision, IC 4-21.5-3-7 requires that you file a petition for administrative review. This petition may include a request for stay of effectiveness and must be submitted to the Office of Environmental Adjudication, 100 North Senate Avenue, Government Center North, Room 1049, Indianapolis, IN 46204, **within eighteen (18) calendar days of the mailing of this notice**. The filing of a petition for administrative review is complete on the earliest of the following dates that apply to the filing:

- (1) the date the document is delivered to the Office of Environmental Adjudication (OEA);
- (2) the date of the postmark on the envelope containing the document, if the document is mailed to OEA by U.S. mail; or
- (3) The date on which the document is deposited with a private carrier, as shown by receipt issued by the carrier, if the document is sent to the OEA by private carrier.

The petition must include facts demonstrating that you are either the applicant, a person aggrieved or adversely affected by the decision or otherwise entitled to review by law. Please identify the permit, decision, or other order for which you seek review by permit number, name of the applicant, location, date of this notice and all of the following:

- (1) the name and address of the person making the request;
- (2) the interest of the person making the request;
- (3) identification of any persons represented by the person making the request;
- (4) the reasons, with particularity, for the request;
- (5) the issues, with particularity, proposed for considerations at any hearing; and
- (6) identification of the terms and conditions which, in the judgment of the person making the request, would be appropriate in the case in question to satisfy the requirements of the law governing documents of the type issued by the Commissioner.

If you have technical questions regarding the enclosed documents, please contact the Office of Air Quality, Permits Branch at (317) 233-0178. Callers from within Indiana may call toll-free at 1-800-451-6027, ext. 3-0178.

Enclosures
FN-REGIS.dot 03/23/06



INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

We make Indiana a cleaner, healthier place to live.

Mitchell E. Daniels, Jr.
Governor

Thomas W. Easterly
Commissioner

100 North Senate Avenue
MC 61-53 IGCN 1003
Indianapolis, Indiana 46204-2251
(317) 232-8603
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August 2, 2007

Mr. Brian Roe
BriMar Wood Innovations, Inc.
2108 Eisenhower Drive North
Goshen, Indiana 46526

Re: Registration Revision No. R039-24908-00645
Registered Construction and Operation Status

Dear Mr. Roe:

The application from BriMar Wood Innovations, Inc., received on June 08, 2007, has been reviewed. Based on the data submitted and the provisions in 326 IAC 2-5.5-2(b), it has been determined that the following stationary custom finish wood panel manufacturing plant, located at 2108 Eisenhower Drive North, Goshen, Indiana 46526, is classified as registered:

- (a) One (1) spray booth, identified as SB2 approved for construction in 2007, with a maximum capacity of 1 gallon of coatings and solvent per hour, using a low pressure air atomization spray gun, for applying stain, sealer and topcoat, with particulate emissions controlled by dry filters, and exhausting to stack SB2;
- (b) Two (2) natural gas-fired heaters, identified as H2 and H3, approved for construction in 2007, maximum capacity of .5 MMBtu/hr each;
- (c) One (1) natural gas-fired air make-up unit, identified as H1, approved for construction in 2007, maximum capacity of 3.4 MMBtu/hr;
- (d) One (1) enclosed sanding booth including cartridge type filters, approved for construction in 2007, for sanding coated and cured panels, with no discharge to atmosphere.
- (e) Woodworking equipment, identified as WO1, consisting of a rip saw, and a computerized panel saw, approved for construction in 2007, using two (2) additional portable bag filters to control particulate emissions, and exhausting inside the building;
- (f) One (1) curing oven, utilizing halogen lamps, approved for construction in 2007, for curing the coatings applied to the wood panels;
- (g) One (1) Air compressor, for vacuum pressing operation, approved for construction in 2007, rated at 20 hp;
- (h) Two (2) Air compressors, for vacuum pressing operation, approved for construction in 2007, rated at 10 hp each;
- (i) One (1) spray booth, identified as SB1, constructed in 2005, with a maximum capacity of 1 gallon of coatings and solvent per hour, using a low pressure air atomization spray gun, for applying stain, sealer and topcoat, with particulate emissions controlled by dry filters, and exhausting to stack SB1;

- (j) Woodworking equipment, identified as WO1, constructed in 2005, to be relocated in the new expansion area within the building, with a total maximum capacity of 850 pounds of wood per hour, using five (5) portable bag filters to control particulate emissions.

The following conditions shall be applicable:

1. Pursuant to 326 IAC 5-1-2 (Opacity Limitations) except as provided in 326 IAC 5-1-3 (Temporary Alternative Opacity Limitations), opacity shall meet the following:
 - (a) Opacity shall not exceed an average of forty percent (40%) in any one (1) six (6) minute averaging period as determined in 326 IAC 5-1-4.
 - (b) Opacity shall not exceed sixty percent (60%) for more than a cumulative total of 15 minutes (60 readings in a 6-hour period as measured according to 40 CFR 60, Appendix A, Method 9 or fifteen (15) one (1) minute nonoverlapping integrated averages for a continuous opacity monitor) in a six (6) hour period.
2. Pursuant to 326 IAC 6-3 (Particulate Emission Limitations for Manufacturing Processes), particulate from each of the surface coating operation shall be controlled by dry particulate filters, and the Permittee shall operate the control device in accordance with manufacturer's specifications.

If overspray is visibly detected at the exhaust or accumulates on the ground, the Permittee shall inspect the control device and do either of the following no later than four (4) hours after such observation:

- (a) Repair control device so that no overspray is visibly detectable at the exhaust or accumulates on the ground.
- (b) Operate equipment so that no overspray is visibly detectable at the exhaust or accumulates on the ground.

If overspray is visibly detected, the Permittee shall maintain a record of the action taken as a result of the inspection, any repairs of the control device, or change in operations, so that overspray is not visibly detected at the exhaust or accumulates on the ground. These records must be maintained for five (5) years.

3. Pursuant to 326 IAC 8-2-10 (Surface Coating Emission Limitations: Flat Wood Panels), the Permittee of a flatwood manufacturing facility subject to this section shall not emit volatile organic compounds from a coating line in excess of:
 - (1) 2.9 kg per 100 square meters of coated finished product (6.0 lb/1,000 sq ft) from printed interior panels, regardless of the number of coats applied;
 - (2) 5.8 kg per 100 square meters of coated finished product (12.0 lb/1,000 sq ft) from natural finish hardwood plywood panels, regardless of the number of coats applied; and
 - (3) 4.8 kg per 100 square meters of coated finished product (10.0 lb/1,000 sq ft) from Class II finishes on hardboard panels, regardless of the number of coats applied.
4. Pursuant to 326 IAC 6-3 (Particulate Emission Limitations for Manufacturing Processes), the particulate emissions from the woodworking operations (WO1), shall not exceed the following:

Baghouse ID Dust Collectors	Process Weight Rate (lbs/hr)	Allowable PM Emission Rate (lbs/hour)
DC1 (Delta Model)	52	0.551
DC2 (Delta Model)	133	0.67
DC3 (Delta Model)	133	0.67
DC4 (Delta Model)	133	0.67
DC5 (Delta Model)	133	0.67
DC6 (Dantherm Filtration)	133	0.67
DC7 (Dantherm Filtration)	133	0.67

In order to comply with the allowable rate of emission, the baghouses for particulate control shall be in operation and control emissions from the woodworking operations at all times that the woodworking operations are in operation. The allowable rate of emission was calculated as follows:

Interpolation of the data in the table in 326 IAC 6-3-2(e) for the process weight rates up to sixty thousand (60,000) pounds per hour shall be accomplished by use of the equation:

$$E = 4.10 P^{0.67} \quad \text{where } E = \text{rate of emission in pounds per hour and} \\ P = \text{process weight rate in tons per hour}$$

When the process weight rate is less than one hundred (100) pounds per hour, the allowable rate of emission is five hundred fifty-one thousandths (0.551) pound per hour.

The source remains a registered source. The source may operate according to 326 IAC 2-5.5.

An authorized individual shall provide an annual notice to the Office of Air Quality that the source is in operation and in compliance with this registration pursuant to 326 IAC 2-5.5-4(a)(3). The annual notice shall be submitted to:

**Compliance Data Section
Office of Air Quality
100 North Senate Avenue
MC 61-53 IGCN 1003
Indianapolis, IN 46204-2251**

no later than March 1 of each year, with the annual notice being submitted in the format attached.

An application or notification shall be submitted in accordance with 326 IAC 2 to the Office of Air Quality (OAQ) if the source proposes to construct new emission units, modify existing emission units, or otherwise modify the source. If you have any questions on this matter, please contact Swarna Prabha, OAQ, 100 North Senate Avenue, MC 61-53 IGCN 1003, Indianapolis, Indiana, 46204, at 317-234-5376 or at 1-800-451-6027 (ext 45376).

Sincerely,

Original document signed by

Nisha Sizemore, Chief
Permits Branch
Office of Air Quality

cc: File - Elkhart County
Elkhart County Health Department
Air Compliance Section – Paul Karkiewicz
Northern Regional Office
Permit Tracking
Compliance Data Section
Permits Administrative and Development
Billing, Licensing and Training Section – Dan Stamatkin

Registration Annual Notification

This form should be used to comply with the notification requirements under 326 IAC 2-5.5-4(a)(3)

Company Name:	BriMar Wood Innovations, Inc.
Address:	2108 Eisenhower Drive North
City:	Elkhart, Indiana 46526
Phone #:	(574) 535-0024
Registration Revision #:	R039-24908-00645

Certification by the Authorized Individual
I hereby certify that BriMar Wood Innovations, Inc. is still in operation and is in compliance with the requirements of Registration R039-24908-00645
Name (typed):
Title:
Signature:
Phone Number:
Date:

**Indiana Department of Environmental Management
Office of Air Quality**

Technical Support Document (TSD) for a Registration Revision

Source Background and Description

Source Name:	BriMar Wood Innovations, Inc.
Source Location:	2108 Eisenhower Drive North, Goshen, Indiana 46526
County:	Elkhart
SIC Code:	2431, 2521
Registration Revision No.:	R039-24908-00645
Permit Reviewer:	Swarna Prabha

The Office of Air Quality (OAQ) has reviewed an application from BriMar Wood Innovations, Inc. relating to the construction and operation of new emission units in their existing stationary custom finish wood panel manufacturing plant. In addition, the facility has changed the type of precatalyzed lacquer coating and sealer used in their processes, resulting in a decrease in potential VOC and HAP emissions.

New Permitted Emission Units and Pollution Control Equipment

This application includes information relating to the construction and operation of the following new emission units:

- (a) One (1) spray booth, identified as SB2, approved for construction in 2007, with a maximum capacity of 1 gallon of coatings and solvent per hour, using a low pressure air atomization spray gun, for applying stain, sealer and topcoat, with particulate emissions controlled by dry filters, and exhausting to stack SB2;
- (b) Two (2) natural gas-fired heaters, identified as H2 and H3, approved for construction in 2007, maximum capacity of .5 MMBtu/hr each;
- (c) One (1) natural gas-fired air make-up unit, identified as H1, approved for construction in 2007, maximum capacity of 3.4 MMBtu/hr;
- (d) One (1) enclosed sanding booth including cartridge type filters, approved for construction in 2007, for sanding coated and cured panels, with no discharge to atmosphere.
- (e) Woodworking equipment, identified as WO1, consisting of a ripsaw, and a computerized panel saw, approved for construction in 2007, using two (2) additional portable bag filters to control particulate emissions, and exhausting inside the building;
- (f) One (1) curing oven, utilizing halogen lamps, approved for construction in 2007, for curing the coatings applied to the wood panels;
- (g) One (1) Air compressor, for vacuum pressing operation, approved for construction in 2007, rated at 20 hp;
- (h) Two (2) Air compressors, for vacuum pressing operation, approved for construction in 2007, rated at 10 hp each;

Permitted emission units and Pollution Control Equipment:

The source consists of the following permitted emission units:

- (i) One (1) spray booth, identified as SB1, constructed in 2005, with a maximum capacity of 1 gallon of coatings and solvent per hour, using a low pressure air atomization spray gun, for applying stain, sealer and topcoat, with particulate emissions controlled by dry filters, and exhausting to stack SB1;
- (j) Woodworking equipment, identified as WO1, constructed in 2005, to be relocated in the new expansion area within the building, with a total maximum capacity of 850 pounds of wood per hour, using five (5) portable bag filters to control particulate emissions.

Unpermitted Emission Units and Pollution Control Equipment

There are no unpermitted facilities operating at this source during this review process.

Emission Units and Pollution Control Equipment Removed From the Source

There are no emission units removed from the source during this review process.

Existing Approvals

The source has been operating under Registration No. R039-22330-00645, issued on February 9, 2006.

Enforcement Issue

There are no enforcement actions pending.

Stack Summary

Stack ID	Operation	Height (ft)	Diameter (ft)	Flow Rate (acfm)	Temperature (°F)
SB1- SB2	Spray booths	n/a	n/a	12500.0	70.0

Emission Calculations

- (a) See Appendix A of this TSD for detailed emissions calculations (Appendix A, pages 1 through 5).
- (b) Based on information provided by the source, there are negligible emissions of particulated matter (PM/PM10) from the enclosed sanding booth or curing wood panels at this source (i.e., the one (1) curing oven, the two (2) 10 hp air compressor units, one (1) 20 hp air compressor unit for vacuum pressing operation). VOCs from the curing of the wood panels are included in the calculations for the surface coating booths.

Potential to Emit

Pursuant to 326 IAC 2-1.1-1(16), Potential to Emit is defined as “ the maximum capacity of a stationary source or emissions unit to emit any air pollutant under its physical and operational design. Any physical or operational limitation on the capacity of a source to emit an air pollutant, including air pollution control equipment and restrictions on hours of operation or type or amount of

material combusted, stored, or processed, shall be treated as part of its design if the limitation is enforceable by the U.S. EPA, the department, or the appropriate local air pollution control agency.”

The following table reflects the PTE of the entire source potential before controls. Control equipment is not considered federally enforceable until it has been required in a federally enforceable permit:

Pollutant	Potential to Emit (tons/year)
PM	14.20
PM10	14.31
SO ₂	0.01
VOC	23.90
CO	1.62
NO _x	1.93

HAPs	Potential to Emit (tons/year)
Formaldehyde	0.040
n-Hexane	0.036
Combination Haps	0.076

- (a) The potential to emit (as defined in 326 IAC 2-7-1(29)) of VOC is equal to or greater than ten (10) tons per year and less than 25 tons per year. Therefore, the source is subject to the provisions of 326 IAC 2-5.5. A registration will be issued.
- (b) The potential to emit (as defined in 326 IAC 2-1.1-1(16)) of any single HAP is less than ten (10) tons per year and the potential to emit of a combination of HAPs is less than twenty-five (25) tons per year. Therefore, the source is not subject to the provisions of 326 IAC 2-7.

County Attainment Status

The source is located in Elkhart County.

Pollutant	Status
PM-10	Attainment
SO ₂	Attainment
NO ₂	Attainment
8-hour Ozone	Non attainment
CO	Attainment
Lead	Attainment

- (a) Elkhart County has been classified as unclassifiable or attainment for PM2.5. U.S. EPA has not yet established the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2 for PM 2.5 emissions. Therefore, until the U.S.EPA adopts specific provisions for PSD review for PM2.5 emissions, it has directed states to regulate PM10 emissions as surrogate for PM2.5 emissions. See the State Rule Applicability – Entire Source section.
- (b) Volatile organic compounds (VOC) and Nitrogen Oxides (NOx) are regulated under the Clean Air Act (CAA) for the purposes of attaining and maintaining the National Ambient Air Quality Standards (NAAQS) for ozone. Therefore, VOC and NOx emissions are considered when evaluating the rule applicability relating to the ozone standards. Elkhart County has been designated as nonattainment for the 8-hour ozone standard. Therefore,

VOC and NO_x emissions were reviewed pursuant to the requirements for Emission Offset, 326 IAC 2-3. See the State Rule Applicability – Entire Source section.

- (c) Elkhart County has been classified as attainment or unclassifiable in Indiana for all other criteria pollutants. Therefore, these emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2. See the State Rule Applicability – Entire Source section.
- (d) Fugitive Emissions
Since this type of operation is not one of the 28 listed source categories under 326 IAC 2-2 or 326 IAC 2-3 and since there are no applicable New Source Performance Standards that were in effect on August 7, 1980, the fugitive particulate matter (PM) and volatile organic compound (VOC) emissions are not counted toward determination of PSD and Emission Offset applicability.

Source Status

Existing Source PSD and Emission Offset Definition (emissions after controls, based on 8760 hours of operation per year at rated capacity and/or as otherwise limited):

Pollutant	Emissions (tons/yr)
PM	1.63
PM-10	1.74
VOC	23.90
SO ₂	0.01
CO	1.62
NO _x	1.93
Worst Single HAP	0.038
Combination HAPs	0.076

- (a) This existing source is not a major stationary source, under PSD (326IAC 2-2) because no attainment regulated pollutant is emitted at a rate of 250 tons per year or more, and it is not in one of the 28 listed source categories, as specified in 326IAC 2-2-1(gg)(1). Therefore, pursuant to 326 IAC 2-2, the PSD requirements do not apply.
- (b) This existing source is not a major stationary source, under Emission Offset (326 IAC 2-3) because no regulated nonattainment pollutant is emitted at a rate of 100 tons per year or more. Therefore, pursuant to 326 IAC 2-3, the Emission Offset requirements do not apply.

Part 70 Permit Determination

326 IAC 2-7 (Part 70 Permit Program)

This source is not subject to the Part 70 Permit requirements because the potential to emit (PTE) of:

- (a) each criteria pollutant is less than 100 tons per year,
- (b) a single hazardous air pollutant (HAP) is less than 10 tons per year, and
- (c) any combination of HAPs is less than 25 tons per year.

This status is based on the potential to emit calculations of the source (see Appendix A). This is the second air approval issued to this source.

Federal Rule Applicability

- (a) There are no New Source Performance Standards (NSPS) (326 IAC 12 and 40 CFR Part 60) included in the permit for this source.
- (b) There are no National Emission Standards for Hazardous Air Pollutants (NESHAP) (326 IAC 14, 20 and 40 CFR Parts 61, 63) included in the permit for this source.
- (c) The requirements of the National Emission Standards for Hazardous Air Pollutants for Wood Furniture Manufacturing Operations (40 CFR 63, Subpart JJ, 326 IAC 20-14-1) are not included in the permit for this source, because this source is not a major source of HAPs as defined in 40 CFR 63.2.

State Rule Applicability – Entire Source

326 IAC 2-2 (Prevention of Significant Deterioration (PSD))

This source was constructed after the applicability date of August 7, 1977 and it is not in one of the 28 listed source categories defined in 326 IAC 2-2-1(gg)(1) and the uncontrolled potential to emit of all attainment regulated pollutants is less than 250 tons per year. Therefore, the requirements of 326 IAC 2-2 (PSD) are not applicable.

326 IAC 2-3 (Emission Offset)

This source is located in Elkhart County. Elkhart County was designated as a nonattainment area for the 8-hour ozone standard on June 15, 2004. The potential to emit of VOC and NOx of this source is less than 100 tons per year. Therefore, the requirements of 326 IAC 2-3 (Emission Offset) are not applicable.

326 IAC 2-4.1 (Major Sources of Hazardous Air Pollutants (HAP))

The requirements of 326 IAC 2-4.1 are not applicable to this source, since the potential to emit of any single HAP is less than ten (10) tons per year and the potential to emit of a combination of HAPs is less than twenty-five (25) tons per year.

326 IAC 2-6 (Emission Reporting)

This source is not subject to 326 IAC 2-6 (Emission Reporting), because it is located in Elkhart County, it is not required to have an operating permit under 326 IAC 2-7, Part 70 Permit Program, and it does not emit lead into the ambient air at levels equal to or greater than five (5) tons per year.

326 IAC 5-1 (Opacity Limitations)

Pursuant to 326 IAC 5-1-2 (Opacity Limitations), except as provided in 326 IAC 5-1-3 (Temporary Alternative Opacity Limitations), opacity shall meet the following, unless otherwise stated in this permit:

- (a) Opacity shall not exceed an average of forty percent (40%) in any one (1) six (6) minute averaging period as determined in 326 IAC 5-1-4.
- (b) Opacity shall not exceed sixty percent (60%) for more than a cumulative total of fifteen (15) minutes (sixty (60) readings in a six (6) hour period as measured according to 40 CFR 60, Appendix A, Method 9 or fifteen (15) one (1) minute nonoverlapping integrated averages for a continuous opacity monitor) in a six (6) hour period.

State Rule Applicability - Individual Facilities

326 IAC 8-1-6 (VOC Rules: General Reduction Requirements for New Facilities)

The potential to emit from each of the surface coating booths (SB1 and SB2) is less than twenty-five (25) tons of VOCs per year. Therefore, the requirements of 326 IAC 8-1-6 are not applicable.

State Rule Applicability - Surface Coating Operations

326 IAC 6-3 (Particulate Emission Limitations for Manufacturing Processes)

Pursuant to 326 IAC 6-3-2(d), particulate from the surface coating booths (SB1 and SB2) shall each be controlled by a dry particulate filter, and the Permittee shall operate the control device in accordance with manufacturer's specifications.

If overspray is visibly detected at the exhaust or accumulates on the ground, the Permittee shall inspect the control device and do either of the following no later than four (4) hours after such observation:

- (a) Repair control device so that no overspray is visibly detectable at the exhaust or accumulates on the ground.
- (b) Operate equipment so that no overspray is visibly detectable at the exhaust or accumulates on the ground.

If overspray is visibly detected, the Permittee shall maintain a record of the action taken as a result of the inspection, any repairs of the control device, or change in operations, so that overspray is not visibly detected at the exhaust or accumulates on the ground. These records must be maintained for five (5) years.

326 IAC 8-2-10 (Surface Coating Emission Limitations: Flat Wood Panels)

The surface coating booths are each constructed after July 1, 1990, and are each located in Elkhart County, apply surface coatings to flat wood panels, and have actual emissions of greater than fifteen pounds of volatile organic compounds per day before add-on controls. Pursuant to 326 IAC 8-2-10, the Permittee of a flatwood manufacturing facility subject to this section shall not emit volatile organic compounds from a coating line in excess of:

- (1) 2.9 kg per 100 square meters of coated finished product (6.0 lb/1,000 sq ft) from printed interior panels, regardless of the number of coats applied;
- (2) 5.8 kg per 100 square meters of coated finished product (12.0 lb/1,000 sq ft) from natural finish hardwood plywood panels, regardless of the number of coats applied; and
- (3) 4.8 kg per 100 square meters of coated finished product (10.0 lb/1,000 sq ft) from Class II finishes on hardboard panels, regardless of the number of coats applied.

Based on information provided by the source and the calculations, (see TSD, Appendix A, page 1) the Permittee is able to comply with the VOC limits.

State Rule Applicability - Woodworking Operations

326 IAC 6-3 (Particulate Emission Limitations for Manufacturing Processes)

Pursuant to 326 IAC 6-3-2(e), the particulate emissions from the woodworking operations (WO1), shall not exceed the following:

Baghouse ID Dust Collectors	Process Weight Rate (lbs/hr)	Allowable PM Emission Rate (lbs/hour)
DC1 (Delta Model)	52	0.551
DC2 (Delta Model)	133	0.67
DC3 (Delta Model)	133	0.67
DC4 (Delta Model)	133	0.67
DC5 (Delta Model)	133	0.67
DC6 (Dantherm Filtration)	133	0.67

Baghouse ID Dust Collectors	Process Weight Rate (lbs/hr)	Allowable PM Emission Rate (lbs/hour)
DC7 (Dantherm Filtration)	133	0.67

In order to comply with the allowable rate of emission, the baghouses for particulate control shall be in operation and control emissions from the woodworking operations at all times that the woodworking operations are in operation. The allowable rate of emission was calculated as follows:

Interpolation of the data in the table in 326 IAC 6-3-2(e)(2) for the process weight rates up to sixty thousand (60,000) pounds per hour shall be accomplished by use of the equation:

$$E = 4.10 P^{0.67} \quad \text{where } E = \text{rate of emission in pounds per hour and} \\ P = \text{process weight rate in tons per hour}$$

When the process weight rate is less than one hundred (100) pounds per hour, the allowable rate of emission is five hundred fifty-one thousandths (0.551) pound per hour.

State Rule Applicability – Natural Gas Combustion Sources

326 IAC 4-2-2 (Incinerators)

The natural gas-fired heaters, and air make-up unit are not incinerators, as defined by 326 IAC 1-2-34, since they do not burn waste substances. Therefore, these ovens are not subject to 326 IAC 4-2-2.

326 IAC 6-2 (Particulate Emissions from Indirect Heating Units)

The natural gas-fired heaters, and air make-up unit are not subject to 326 IAC 6-2 as they are not sources of indirect heating.

326 IAC 6-3 (Particulate Emission Limitations for Manufacturing Processes)

Pursuant to 326 IAC 6-3-1(b)(14), the natural gas-fired heaters, and air make-up unit are each exempt from the requirements of 326 IAC 6-3, because, pursuant to 326 IAC 1-2-59, liquid and gaseous fuels and combustion air are not considered as part of the process weight. In addition, each heater and air make-up unit has a potential emissions less than five hundred fifty one thousandths (0.551) pound per hour.

326 IAC 7-1 (Sulfur dioxide emission limitations: applicability)

The natural gas-fired heaters, and air make-up unit are each not subject to the requirements of 326 IAC 7-1, because the potential and the actual emissions are less than twenty-five (25) tons per year and ten (10) pounds per hour respectively.

Recommendation

The staff recommends to the Commissioner that the construction and operation be approved. This recommendation is based on the following facts and conditions:

Unless otherwise stated, information used in this review was derived from the application and additional information submitted by the applicant.

A complete application for the purposes of this review was received on June 8, 2007. Additional information was submitted by the source on July 17, 2007.

Conclusion

The construction and operation of this stationary custom finish wood panel manufacturing plant shall be subject to the conditions of the attached Registration Revision No.R039-24908-00645.

**Appendix A: Emissions Calculations
Emission Summary**

Company Name: BriMAr Wood Innovations, Inc.
Address City IN Zip: 2108 Eisenhower Drive North, Goshen, Indiana 46526
Registration Revision No.: R039-24908-00645
Reviewer: Swarna Prabha

Category	Uncontrolled Potential Emissions (tons/year)				
	Pollutant	Air make-up unit Office Heaters H1,H2, H3	Spray Booth surface coatings SB1,SB2	Wood Working WO1	TOTAL
Criteria Pollutants	PM	0.04	5.88	8.28	14.20
	PM10	0.15	5.88	8.28	14.31
	SO2	0.01			0.01
	NOx	1.93			1.93
	VOC	0.11	23.80		23.90
	CO	1.62			1.62
Hazardous Air Pollutant	n-Hexane	3.6E-02			3.6E-02
	Chromium	2.7E-05			2.7E-05
	Manganese	7.3E-06			7.3E-06
	Nickel	4.0E-05			4.0E-05
	Toluene	6.6E-05			6.6E-05
	Benzene	4.0E-05			4.0E-05
	Dichlorobenzene	2.3E-05			2.3E-05
	Formaldehyde	1.4E-03	3.8E-02		4.0E-02
	Lead	9.6E-06			9.6E-06
	Cadmium	2.1E-05			2.1E-05
	Totals	3.8E-02	3.8E-02		7.6E-02

Total emissions based on rated capacity at 8,760 hours/year.

Category	Controlled Potential Emissions (tons/year)				
	Emissions Generating Activity				
Pollutant	Air make-up unit H1 Office Heaters H2, H3	Spray Booth surface coatings SB1,SB2	Wood Working WO1	TOTAL	
Criteria Pollutants	PM	0.04	1.18	0.42	1.63
	PM10	0.15	1.18	0.42	1.74
	SO2	0.01			0.01
	NOx	1.93			1.93
	VOC	0.11	23.80		23.90
	CO	1.62			1.62
Hazardous Air Pollutants	n-Hexane	3.6E-02			3.6E-02
	Chromium	2.7E-05			2.7E-05
	Manganese	7.3E-06			7.3E-06
	Nickel	4.0E-05			4.0E-05
	Toluene	6.6E-05			6.6E-05
	Benzene	4.0E-05			4.0E-05
	Dichlorobenzene	2.3E-05			2.3E-05
	Formaldehyde	1.4E-03	3.8E-02		4.0E-02
	Lead	9.6E-06			9.6E-06
	Cadmium	2.1E-05			2.1E-05
	Totals	3.8E-02	3.8E-02		7.6E-02

Emission Calculations
VOC and Particulate Emissions from Surface Coating Operations

Company Name: BriMar Wood Innovations, Inc.
Address: 2108 Eisenhower Drive North, Goshen, Indiana 46526
Registration Revision No.: R039-24908-00645
Reviewer: Swarna Prabha

Spray Booths #SB1, #SB2

Material	Density (lbs/gal)	Weight % Water	Weight % VOC	Weight % Solids	Maximum Usage * (gals/hour)	VOC (lbs/gal)	PTE of VOC (lbs/hour)	PTE of VOC (tons/year)	PTE of PM/PM10 Before Controls (tons/year)	PTE of PM/PM10 After Controls (tons/year)
Spray Booth #SB1										
Stain Blend 3032	6.38	0.0%	100%	0.0%	0.075	6.38	0.48	2.10	0.00	0.00
Stain Blend 3087	6.80	0.0%	100%	0.0%	0.075	6.80	0.51	2.23	0.00	0.00
Maximum PTE from stain							0.51	2.23		
Sher-Wood Hi-Bild Lacquer	7.81	0.0%	60.05%	33.00%	0.375	4.69	1.76	7.70	2.12	0.42
Sher-Wood Dry Vinyl Sealer	7.37	0.0%	27.00%	22.70%	0.225	1.99	0.45	1.96	0.82	0.16
Spray Booth #SB2										
Stain Blend 3032	6.38	0.0%	100%	0.0%	0.075	6.38	0.48	2.10	0.00	0.00
Stain Blend 3087	6.80	0.0%	100%	0.0%	0.075	6.80	0.51	2.23	0.00	0.00
Maximum PTE from stain							0.51	2.23		
Sher-Wood Hi-Bild Lacquer	7.81	0.0%	60.05%	33.00%	0.375	4.69	1.76	7.70	2.12	0.42
Sher-Wood Dry Vinyl Sealer	7.37	0.0%	27.00%	22.70%	0.225	1.99	0.45	1.96	0.82	0.16
						Worst case PTE	Totals	5.43	23.80	5.88
									5.88	1.18

* Maximum Usage as reported by source, based on materials used during an actual production run. Operator applies stain, sealer and topcoat to the wood panels in sequence to produce the finished product. Only one stain is used on any panel. Worst case stain is reflected in totals.
Assume transfer efficiency of 50% for air atomization guns and control efficiency of 80% for dry filters.
Assume all VOC is emitted.
Acetone is used for cleaning and thinning. Acetone is not considered as HAP or VOC

METHODOLOGY

VOC (lbs/gal) = Density (lbs/gal) x Weight % VOC (%)

PTE of VOC (lbs/hour) = Density (lbs/gal) x Weight % VOC x Maximum Usage (gals/hour)

PTE of VOC (tons/year) = Density (lbs/gal) x Weight % VOC x Maximum Usage (gals/hour) x 8760 (hours/year) x 1 ton/2000 lbs

PTE of PM/PM10 Before Controls (tons/year) = Density (lbs/gal) x Weight % Solids x Maximum Usage (gals/hour) x 8760 (hours/year) x 1 ton/2000 lbs x (1 - Transfer Efficiency %)

PTE of PM/PM10 After Controls (tons/year) = PTE PM/PM10 Before Controls (tons/year) x (1 - Control Efficiency %)

Compliance with 326 IAC 8-2-10:

The Permittee coats 850 pounds of panels per hour. Each 4' x 8' panel weighs approximately 20 pounds.
850 pounds wood per hour / 20 pounds wood per panel x 32 square feet per panel = 1360 square feet of panels per hour.
5.43 pounds of VOC per hour / 1360 square feet of panels per hour = 4 pounds of VOC per 1,000 square feet of panels.

**Appendix A: Emission Calculations
HAP Emissions From Surface Coating Operations**

**Company Name: BriMar Wood Innovations, Inc.
Address: 2108 Eisenhower Drive North, Goshen, Indiana 46526
Registration Revision No.: R039-24908-00645
Reviewer: Swarna Prabha**

Spray Booths #SB1, SB#2

Material	Density (lbs/gal)	Maximum Usage (gal/hour)	Weight % Formaldehyde
Stain Blend 3032	6.38	0.075	0.00%
Stain Blend 3087	6.80	0.075	0.00%
Sher-Wood Hi-Bild PreCa Lacqer	7.81	0.375	0.19%
Sher-Wood Dry Vinyl Sealer	7.37	0.225	0.19%

Material	Density (lbs/gal)	Maximum Usage (gals/hour)	PTE of Formaldehyde (tons/year)
Stain Blend 3032	6.38	0.075	0.000
Stain Blend 3087	6.80	0.075	0.000
Sher-Wood Hi-Bild PreCa Lacqer	7.81	0.375	0.024
Sher-Wood Dry Vinyl Sealer	7.37	0.225	0.014
		Totals	0.038

METHODOLOGY

PTE HAPS (tons/year) = Density (lbs/gal) x Max. Usage (gals/hour) x Weight % HAP x 8760 (hrs/year) x 1 ton/2000 lbs

**Appendix A: Emission Calculations
Combustion Emissions from the Natural Gas-fired Air-Makeup Unit**

Company Name: BriMar Wood Innovations, Inc.
Address: 2108 Eisenhower Drive North, Goshen, Indiana 46526
Registration Revision No.: R039-24908-00645
Reviewer: Swarna Prabha

Description	Total Heat Input Capacity (MMBtu/hr)	Total Max. Potential Throughput (MMCF/yr)
Air Make up Unit H1, Office Heaters H2, H3	4.4	38.5

Pollutant Emission Factors (lbs/MMCF)						
PM	PM10*	SO ₂	NO _x **	CO	VOC	HAPs
1.9	7.6	0.6	100	84.0	5.5	1.89

Emission Unit ID	Potential To Emit (tons/yr)						
	PM	PM10	SO ₂	NO _x	CO	VOC	HAPs
Air Make up Unit H1, Office Heaters H2, H3	0.04	0.15	0.01	1.9	1.6	0.11	0.036

Hazardous Air Pollutanta (HAPs)

Pollutant	Benzene	DCB	Formaldehyde	Hexane	Toluene	Pb	Cd	Cr	Mn	Ni
Emission Factor (lb/MMCF)	2.1E-03	1.2E-03	7.5E-02	1.8E+00	3.4E-03	5.0E-04	1.1E-03	1.4E-03	3.8E-04	2.1E-03
Emission Unit	Potential Emission tons/yr									
	Benzene	DCB	Formaldehyde	Hexane	Toluene	Pb	Cd	Cr	Mn	Ni
Air Make up Unit H1, Office Heaters H2, H3	4.0E-05	2.3E-05	1.4E-03	3.5E-02	6.6E-05	9.6E-06	2.1E-05	2.7E-05	7.3E-06	4.0E-05
Totals	4.0E-05	2.3E-05	1.4E-03	3.5E-02	6.6E-05	9.6E-06	2.1E-05	2.7E-05	7.3E-06	4.0E-05

*PM emission factor is filterable PM only. PM10 emission factor is filterable and condensable PM10 combined.

**Emission Factors for NO_x: Uncontrolled = 100, Low NO_x Burner = 50, Low NO_x Burners/Flue gas recirculation = 32

The five highest organic and metal HAPs emission factors are provided above. Additional HAPs emission factors are available in AP-42, Chapter 1.4.

Methodology

Potential Throughput (MMCF) = Combined Total Heat Input Capacity (MMBtu/hr) * 8,760 hrs/yr * 1 MMCF/1,000 MMBtu

Emission (tons/yr) = Throughput (MMCF/yr) * Emission Factor (lb/MMCF) / 2,000 lb/ton

Emission Factors are from AP 42, Chapter 1.4, Tables 1.4-1, 1.4-2, 1.4-3, SCC #1-02-006-02, 1-01-006-02, 1-03-006-02, and 1-03-006-03 (SUPPLEMENT D 3/98)

All emission factors are based on normal firing.

MMBtu = 1,000,000 Btu, MMCF = 1,000,000 Cubic Feet of Gas

Abbreviations

PM = Particulate Matter

NO_x = Nitrous Oxides

DCB = Dichlorobenzene

Cr = Chromium

PM10 = Particulate Matter (<10 um)

VOC - Volatile Organic Compounds

Pb = Lead

Mn = Manganese

SO₂ = Sulfur Dioxide

CO = Carbon Monoxide

Cd = Cadmium

Ni = Nickel

MMBtu = 1,000,000 Btu

MMCF - 1,000,000 Cubic Feet of Gas

1000 Btu per cubic foot of natural gas

**Appendix A: Emission Calculations
Particulate Emissions From Woodworking Operations**

**Company Name: BriMar Wood Innovations, Inc.
Address: 2108 Eisenhower Drive North, Goshen, Indiana 46526
Registration Revision No.: R039-24908-00645
Reviewer: Swarna Prabha**

Woodworking Operations WO1

Baghouse ID Dust Collectors	Process Weight Rate (lbs/hour)	Sawdust Collected* (lbs/hour)	Collection/ Control Efficiency (%)	Uncontrolled PTE of PM/PM10 (tons/year)	Uncontrolled PTE of PM/PM10 (lbs/hour)	Controlled PTE of PM/PM10 (tons/year)	Controlled PTE of PM/PM10 (lbs/hour)	326 IAC 6-3-2 Allowable PM Emission Rate (lbs/hour)
DC1 (Delta Model)	52	0.11	90.0%	0.54	0.12	0.05	0.01	0.551
DC2 (Delta Model)	133	0.28	95.0%	1.29	0.29	0.06	0.01	0.67
DC3 (Delta Model)	133	0.28	95.0%	1.29	0.29	0.06	0.01	0.67
DC4 (Delta Model)	133	0.28	95.0%	1.29	0.29	0.06	0.01	0.67
DC5 (Delta Model)	133	0.28	95.0%	1.29	0.29	0.06	0.01	0.67
DC6 (Dantherm Filtration)	133	0.28	95.0%	1.29	0.29	0.06	0.01	0.67
DC7 (Dantherm Filtration)	133	0.28	95.0%	1.29	0.29	0.06	0.01	0.67
Worst Case PTE (tons/yr)	850		TOTALS	8.28		0.42		

*Based on reported amount of sawdust collected from 8 hours of operations per day
Assume all PM is equal to PM10. Assume all sawdust collected is PM / PM10.
The dust collectors exhaust inside the building.

Methodology

PTE of PM/PM10 Uncontrolled (tons/year) = Sawdust Collected (lbs/hour) / (Control Efficiency %) x 8760 (hours/year) x 1 ton/2000 lbs
PTE of PM/PM10 Uncontrolled (lbs/hour) = Sawdust Collected (lbs/hour) / (Control Efficiency %)
PTE of PM/PM10 Controlled (tons/year) = Sawdust Collected (lbs/hour) x (1 - Control Efficiency %) x 8760 (hours/year) x 1 ton/2000 lbs
PTE of PM/PM10 Controlled (lbs/hour) = Sawdust Collected (lbs/hour) x (1 - Control Efficiency %)
326 IAC 6-3-2 Allowable PM Emission Rate (lbs/hour) = 4.1 x process weight rate (tons/hour)^{0.67}