



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: June 9, 2006  
RE: Carlisle Veneer / 153-19640-00030  
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  
Indianapolis, Indiana 46204-2251  
(317) 232-8603  
(800) 451-6027  
www.IN.gov/idem

Herb Manthei  
Carlisle Veneers, Inc.  
10228 South Old 41  
Carlisle, Indiana 47838

June 9, 2006

Re: Registered Operation Status  
No.: 153-19640-00030

Dear Mr. Manthei:

The application from Carlisle Veneers, Inc. received on July 02, 2004, has been reviewed. Based on the data submitted and the provisions in 326 IAC 2-5.5, it has been determined that the following wood veneer manufacturing plant located at 10228 South Old 41, Carlisle, Indiana, is classified as registered:

- (a) One (1) wood gasifier, with a maximum heat input capacity of 6.29 MMBtu per hour, burning wood chips and wood waste, controlled by a cyclonic separator, and exhausting at stack 001. This unit was installed in 2004.
- (b) One (1) woodworking facility, constructed in 1995, consisting of:
  - (1) One (1) veneer lathe with a maximum throughput rate of 15,250 pounds of veneer per hour;
  - (2) One (1) veneer hog with a maximum grinding rate of 1,380 pounds of wood chips per hour;
- (c) One (1) veneer dryer, used for drying cut-up logs, with a maximum throughput rate of 17,400 million square feet per year of wood veneer, with emissions exhausting at Stack 002. This unit was installed in 1995.

The following conditions shall be applicable:

- (a) 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:
  - (1) 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.
  - (2) Opacity shall not exceed sixty percent (60%) for more than a cumulative total of fifteen (15) minutes (sixty (60) readings 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.
- (b) Pursuant to 326 IAC 6-2-4(a), the PM emissions from facilities used for indirect heating purposes which were constructed after September 21, 1983 and having

a total source heat input capacity of less than ten (10) MMBtu per hour shall in no case exceed 0.60 pounds of particulate matter per million British thermal units heat input. Therefore, the one (1) 6.29 MMBtu per hour natural gas-fired wood gasifier shall be limited to 0.60 pounds of particulate matter per MMBtu heat input.

- (c) The cyclonic separator for particulate control shall be in operation and control emissions from the one (1) wood gasifier at all times that the one (1) wood gasifier is in operation.
- (d) Pursuant to 326 IAC 6-3-2 (Particulate Emission Limitations for Manufacturing Processes), the particulate emissions from the woodworking facility shall not exceed the pound per hour limit as shown in the table below:

Emission Unit	Process Weight Rate (lbs/hour)	Process Weight Rate (ton/hour)	Particulate Emission Limit (lb/hour)
Veneer Hog	1,380	0.69	3.20

The pounds per hour limitations were calculated using the following equation:

Interpolation of the data for the process weight rate up to 60,000 pounds per hour shall be accomplished by use of the equation:

$$E = 4.10 P^{0.67}$$

where E = rate of emission in pounds per hour;  
and P = process weight rate in tons per hour

This registration is the first air approval issued to this 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  
Indianapolis, Indiana 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.

Pursuant to Contract No. A305-5-65, IDEM, OAQ has assigned the processing of this application to Eastern Research Group, Inc., (ERG). Therefore, questions should be directed to Sanobar Durrani, ERG, 1600 Perimeter Park Drive, Morrisville, North Carolina 27560, or call (919) 468-7810 to speak directly to Ms. Durrani. Questions may also be directed to Duane Van Laningham at IDEM, OAQ, 100 North Senate Avenue, Indianapolis, Indiana, 46204-2251 or call (800) 451-6027, ask for Duane Van Laningham, or extension 3-6878, or dial (317) 233-6878.

Sincerely,

Original Signed By:  
Nisha Sizemore, Chief  
Permits Branch  
Office of Air Quality

ERG/SD

cc: File – Sullivan County  
Sullivan County Health Department  
Air Compliance – Jim Thorpe  
Permit Tracking  
Compliance Data Section  
Office of Enforcement

<b>Registration Annual Notification</b>
---------------------------------------------

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

<b>Company Name:</b>	<b>Carlisle Veneers, Inc.</b>
<b>Address:</b>	<b>10228 South Old 41</b>
<b>City:</b>	<b>Carlisle, Indiana 47838</b>
<b>Authorized individual:</b>	<b>Herb Manthei</b>
<b>Phone #:</b>	<b>(812) 398-2225</b>
<b>Registration #:</b>	<b>153-19640-00030</b>

I hereby certify that Carlisle Veneers, Inc. is still in operation and is in compliance with the requirements of Registration No.: 153-19640-00030.

<b>Name (typed):</b>
<b>Title:</b>
<b>Signature:</b>
<b>Date:</b>

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

Technical Support Document (TSD) for a Registration

**Source Background and Description**

Source Name:	Carlisle Veneer, Inc.
Source Location:	10228 South Old 41, Carlisle, Indiana 47838
County:	Sullivan
SIC Code:	2435
Operation Permit No.:	153-19640-00030
Permit Reviewer:	ERG/SD

The Office of Air Quality (OAQ) has reviewed an application from Carlisle Veneers, Inc. relating to the operation of a stationary wood veneer manufacturing plant.

**Permitted Emission Units and Pollution Control Equipment**

There are no permitted emission units and pollution control devices at this source during this review process.

**Unpermitted Emission Units and Pollution Control Equipment**

The source consists of the following unpermitted emission units:

- (a) One (1) wood gasifier, with a maximum heat input capacity of 6.29 MMBtu per hour, burning wood chips and wood waste, controlled by a cyclonic separator, and exhausting at stack 001. This unit was installed in 2004.
- (b) One (1) woodworking facility, constructed in 1995, consisting of:
  - (1) One (1) veneer lathe with a maximum throughput rate of 15,250 pounds of veneer per hour.
  - (2) One (1) veneer hog with a maximum grinding rate of 1,380 pounds of wood chips per hour.
- (c) One (1) veneer dryer, used for drying cut-up logs, with a maximum throughput rate of 17,400 million square feet per year of wood veneer, with emissions exhausting at Stack 002. This unit was installed in 1995.
- (d) One (1) natural gas-fired boiler, with a maximum heat input capacity of 4.0 MMBtu per hour. This unit was installed in 1995. Note: the boiler was removed from service permanently in April 2006.

**Existing Approvals**

There are no previous approvals issued to this source.

### Enforcement Issue

- (a) IDEM is aware that equipment has been constructed and operated prior to receipt of the proper permit. The subject equipment is listed in this Technical Support Document under the condition entitled "Unpermitted Emission Units and Pollution Control Equipment".
- (b) IDEM is reviewing this matter and will take appropriate action. This proposed permit is intended to satisfy the requirements of the operation permit rules.

### Stack Summary

Stack ID	Operation	Height (ft)	Diameter (ft)	Flow Rate (acfm)	Temperature (°F)
001	Wood Gasifier	28	1.17	2,115	400

### Recommendation

The staff recommends to the Commissioner that the 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.

An application for the purposes of this review was received on July 2, 2004, with additional information received on August 10, 2004, August 24, 2004, November 3, 2005, and May 16, 2006.

### Emission Calculations

See Appendix A of this document for detailed emission calculations in Appendix A (Pages 1 through 5).

### Potential to Emit of the Source Before Controls

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."

Pollutant	Potential to Emit (tons/year)
PM	14.0
PM10	12.9
SO <sub>2</sub>	0.69
VOC	1.06
CO	18.5
NO <sub>x</sub>	13.5

HAPs	Potential to Emit (tons/year)
Benzene	0.12
Dichlorobenzene	6.70E-05
Formaldehyde	0.14
Acrolein	0.11
Hydrogen Chloride	0.52
Styrene	0.05
Acetaldehyde	0.05
Methanol	0.08
Total	1.07

- (a) The potential to emit (as defined in 326 IAC 2-1.1-1(16)) of PM, PM10, VOC, NO<sub>x</sub>, and SO<sub>2</sub> are less than 25 tons per year and the potential to emit (as defined in 326 IAC 2-1.1-1(16)) of CO is less than 100 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 (as defined in 326 IAC 2-1.1-1(16)) of a combination of HAPs is less than twenty-five (25) tons per year.
- (c) **Fugitive Emissions**  
Since this type of operation is not one of the twenty-eight (28) listed source categories under 326 IAC 2-2 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.

### County Attainment Status

The source is located in Sullivan County.

Pollutant	Status
PM10	Attainment
PM 2.5	Attainment
SO <sub>2</sub>	Attainment
NO <sub>2</sub>	Attainment
1-hour Ozone	Attainment
8-hour Ozone	Attainment
CO	Attainment
Lead	Attainment

- (a) Sullivan County has been classified as 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.
- (b) Volatile organic compounds (VOC) and Nitrogen Oxides (NO<sub>x</sub>) emissions 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 NO<sub>x</sub> emissions are considered when evaluating the rule applicability relating to Ozone. Sullivan County has been designated as attainment or unclassifiable for Ozone. Therefore, VOC and NO<sub>x</sub> 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.
- (c) Sullivan 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 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, Part 70, or FESOP Definition (emissions after controls, based on 8760 hours of operation per year at rated capacity and/or as otherwise limited):

Pollutant	Emissions (tons/year)
PM	14.0
PM10	12.9
SO <sub>2</sub>	0.69
VOC	1.06
CO	18.5
NO <sub>x</sub>	13.5
Single HAP	<10
Combination HAPs	<25

- (a) This existing source is not a major stationary source because no attainment regulated pollutant is emitted at a rate of 250 tons per year or greater and it is not in one of the 28 listed source categories.
- (b) These emissions were based on the potential to emit calculations for the source (see Appendix A).

### Part 70 Permit Determination

#### 326 IAC 2-7 (Part 70 Permit Program)

This existing 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 is the first air approval issued to this source.

### Federal Rule Applicability

- (a) The requirements of New Source Performance Standard (NSPS), 40 CFR 60, Subpart Dc - Standards of Performance for Small Industrial-Commercial-Institutional Steam Generating Units (326 IAC 12) is not included in this registration for the natural gas-fired wood gasifier. This NSPS applies only to boilers or process heaters with a maximum heat input capacity greater than ten (10) MMBtu per hour. The one (1) wood gasifier at the source operates at a maximum heat input capacity of 6.29 MMBtu per hour.

There are no other New Source Performance Standards (NSPS) (326 IAC 12 and 40 CFR Part 60) included in this Registration.

- (b) The requirements of 40 CFR 63, Subpart DDDDD - National Emission Standards for Hazardous Air Pollutants for Industrial, Commercial, and Institutional Boilers and Process Heaters, are not included in this registration for the wood gasifier because this source is not a major source of HAPs.
- (c) The requirements of the National Emission Standards for Hazardous Air Pollutants (NESHAPs), 40 CFR 63, Subpart JJ - National Emission Standards for Wood Furniture Manufacturing Operations (326 IAC 20-14) are not included in this registration for this source. This NESHAP applies to sources that are major for HAPs as defined in 40 CFR

63, Subpart A and manufacture wood furniture or wood furniture components. The potential to emit of HAPs from this source are less than the major source thresholds.

There are no other National Emission Standards for Hazardous Air Pollutants (NESHAPs) (326 IAC 14 and 20) and 40 CFR Parts 61 and 63) included in this registration.

### **State Rule Applicability – Entire Source**

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

Carlisle Veneer, Inc. was constructed in 1995 and is not one (1) of the twenty-eight (28) source categories. At the time of construction, the potential to emit of each criteria pollutant before control was less than the two hundred and fifty (250) tons per year PSD threshold. After each modification since its construction, the potential to emit of each criteria pollutant before control was less than the 250 tons per year PSD threshold. Therefore, the source is a minor source under PSD and the requirements of 326 IAC 2-2(PSD) do not apply either to the initial construction of the source in 1995 or to the 2004 modification. The one (1) 4.0 MMBtu per hour natural gas-fired boiler was permanently removed from service in April 2006.

#### **326 IAC 2-6 (Emission Reporting)**

This source is not required to operate under a Part 70 permit. Therefore, the requirements of 326 IAC 2-6 (Emission Reporting) do not apply.

#### **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 the 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 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.

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

The source was constructed prior to the July 27, 1997 applicability date for this rule and has not constructed or reconstructed a major source of HAPs after this date. Therefore, the provisions of 326 IAC 2-4.1 do not apply.

### **State Rule Applicability - Wood Gasifier, Natural Gas-Fired Boiler**

#### **326 IAC 4-2 (Incinerators)**

The one (1) wood gasifier is not subject to 326 IAC 4-2 (Incinerators) because this unit does not burn solid waste, that is, refuse more than 50% of which consists of a mixture of paper, wood, yard wastes, food wastes, plastics, etc. This unit burns wood chips generated onsite from the woodworking operations.

#### **326 IAC 6-2-4 (Particulate Emissions Limitations for Sources of Indirect Heating)**

The wood gasifier burns woodwaste and woodchips generating steam which is directed into the veneer dryer used to dry the veneers. Pursuant to 326 IAC 6-2-4(a), the PM emission limit from the natural gas-fired wood gasifier which was constructed after September 21, 1983 are as follows:

Emission Unit	Fuel Used	Year of Installation	Maximum Heat Input Capacity (MMBtu per hour)	* Calculated PM Limit (lbs per MMBtu)	Applicable 326 IAC 6-2-4 PM Limit (lb per MMBtu)
Wood Gasifier	Wood-waste and Woodchips	2004	6.29	0.59	0.67

\* These limitations are based on the following equation:

$$Pt = \frac{1.09}{Q^{0.26}}$$

Where:

Pt = emission rate limit (lbs/MMBtu)

Q = total source heat input capacity rating in million Btu per hour (MMBtu/hour)

\*\* However, 326 IAC 6-2-4(a) also states that an indirect heating unit having a total source heat input capacity less than ten (10) MMBtu per hour shall in no case exceed 0.6 pounds of PM per MMBtu heat input. Since the 0.6 pounds PM per MMBtu emission limit is less than the limit calculated above for the 6.29 MMBtu per hour natural gas-fired wood gasifier, the natural gas-fired wood gasifier shall be limited to 0.6 pounds of PM per MMBtu heat input.

### State Rule Applicability - Woodworking Facility

326 IAC 6-3-2 (Particulate Emission Limitations for Manufacturing Processes)

- (a) Pursuant to 326 IAC 6-3-2 (Particulate Emission Limitations for Manufacturing Processes), particulate emissions from the woodworking facility consisting of one (1) veneer hog shall not exceed the pound per hour limit as shown in the table below:

Emission Unit	Process Weight Rate (lbs/hour)	Process Weight Rate (ton/hour)	Particulate Emission Limit (lb/hour)
Veneer Hog	1,380	0.69	3.20

The pounds per hour limitations were calculated with the following equation:

Interpolation of the data for the process weight rate up to 60,000 pounds per hour shall be accomplished by use of the equation:

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

Based on the potential to emit calculations for the source, the woodworking facility (consisting of one (1) veneer hog) is in compliance with this rule (See Appendix A, page 8 of 9).

- (b) The one (1) veneer lathe is not subject to the provisions of 326 IAC 6-3 (Particulate Emission Limitations for Manufacturing Processes) because according to 326 IAC 6-3-1(b)(14) manufacturing processes with potential emissions less than five hundred fifty-one thousandths (0.551) pounds per hour are exempt from the provisions of this rule. The particulate emissions from the one (1) veneer lathe are negligible since the logs are pre-soaked and no wood is removed during its operation.

326 IAC 8-2-10 (Flat Wood Panels; Manufacturing Operations)

The provisions of 326 IAC 8-2-10 (Flat Wood Panels; Manufacturing Operations) are not applicable to this source because there are no surface finishing operations performed at this source.

**State Rule Applicability - Veneer Dryer**

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

The veneer dryer is not subject to the provisions of 326 IAC 6-3 (Particulate Emission Limitations for Manufacturing Processes) because according to 326 IAC 6-3-1(b)(14) manufacturing processes with potential emissions less than five hundred fifty-one thousandths (0.551) pounds per hour are exempt from the provisions of this rule.

326 IAC 8-1-6 (New Facilities)

The Permittee is not subject to the provisions of 326 IAC 8-1-6, because the potential emissions of VOC from the one (1) veneer dryer are less than twenty-five (25) tons per year.

**Conclusion**

The operation of this stationary wood veneer manufacturing plant shall be subject to the conditions of the Registration No.: 153-19640-00030.

**Appendix A: Emissions Calculations  
One (1) Veneer Dryer**

**Company Name:** Carlisle Veneers, Inc.  
**Address:** 10228 South Old 41, Carlisle, Indiana 47838  
**Registration:** 153-19640  
**Plt ID:** 153-00030  
**Reviewer:** ERG/SD  
**Date:** May 2, 2006

**Max. Throughput**  
(MSF/year)

**17,400**

**Pollutant**

	PM	PM10	SO <sub>2</sub>	NOx	VOC	CO
*Emission Factor (lb/MSF)	NA	NA	NA	NA	0.068	0.23
Potential To Emit (tons/year)	NA	NA	NA	NA	0.59	2.00

\*Emission factors are from AP-42 Chapter 10.5 (Plywood Manufacturing), Tables 10.5-2 and 10.5-3. SCC # 3-07-007-34, SCC # 3-07-007-35 (01/02).

**Note:** When estimating total emissions from direct-fired hardwood drying process, emissions from heated zone and cooling section of the veneer dryer were combined.

Since there are no emission factors listed in AP-42, Chapter 10.5 for direct-fired hardwood drying process using natural gas, wood-fired emission factors were used to estimate worst case emissions.

**METHODOLGY**

PTE (tons/year) = Max. Throughput (MSF/year) \* Emission Factor (lb/MSF of 3/8 inch thick veneer) \* 1ton/2000 lbs

**HAPs**

	Acetaldehyde	Formaldehyde	Methanol
*Emission Factor (lb/MSF)	0.0052	0.0025	0.0095
Potential To Emit (tons/year)	0.05	0.022	0.08

Methodology is the same as above.

**Appendix A: Emissions Calculations  
One (1) Wood Gasifier (Burner)**

**Company Name:** Carlisle Veneers, Inc.  
**Address:** 10228 South Old 41, Carlisle, Indiana 47838  
**Registration:** 153-19640  
**Pit ID:** 153-00030  
**Reviewer:** ERG/SD  
**Date:** May 2, 2006

**Heat Input Capacity (MMBtu/hour)** 6.29

	Pollutant					
	PM	PM10	SO <sub>2</sub>	NOx	VOC	CO
*Emission Factor (lb/MMBtu)	0.40	0.36	0.025	0.49	0.017	0.60
Potential To Emit (tons/year)	11.0	9.92	0.69	13.5	0.47	16.5

\*Emission factors are from AP-42 Chapter 1.6 (Wood Residue Combustion Boilers), Tables 1.6-1, 1.6-2 and 1.6-3 (September, 2003).  
 Note: This source burns only dry wood (less than 20% moisture content) in this boiler and uses a cyclone for dust collection.

**METHODOLGY**

Uncontrolled PTE (tons/year) = Heat Input Capacity (MMBtu/hour) \* Emission Factor (lb/MMBtu) \* 8760 hours/year \* 1ton/2000 lbs

**Appendix A: Emissions Calculations  
One (1) Wood Gasifier (Burner)**

**Company Name:** Carlisle Veneers, Inc.  
**Address:** 10228 South Old 41, Carlisle, Indiana 47838  
**Registration:** 153-19640  
**Plt ID:** 153-00030  
**Reviewer:** ERG/SD  
**Date:** May 2, 2006

**Heat Input Capacity (MMBtu/hour)** 6.29

Emission Factor (lb/MMBtu)	Selected Hazardous Air Pollutants				
	Acrolein	Benzene	Formaldehyde	Hydrogen Chloride	Styrene
Potential To Emit (tons/year)	0.11	0.12	0.12	0.52	0.05
<b>TOTAL HAPS (tons/year) =</b>					<b>0.92</b>

\* Emission factors are from AP-42, Chapter 1.6 (Wood Residue Combustion Boilers), Table 1.6-1, 1.6-2, and 1.6-3 (September, 2003). These factors include the five (5) HAPs with the highest AP-42 emission factors.

Note: This source burns only dry wood (less than 20 weight % moisture) in this boiler and uses a cyclone for dust collection.

**METHODOLGY**

Uncontrolled PTE (tons/year) = Heat Input Capacity (MMBtu/hour) \* Emission Factor (lb/MMBtu) \* 8760 hour/year \* 1ton/2000 lbs

**Appendix A: Emission Calculations  
Particulate Emissions  
From Veneer Hog and Veneer Lathe**

**Company Name:** Carlisle Veneers, Inc.  
**Address:** 10228 South Old 41, Carlisle, Indiana 47838  
**Registration:** 153-19640  
**Plt ID:** 153-00030  
**Reviewer:** ERG/SD  
**Date:** May 2, 2006

Emission Unit	Max. Throughput Rate (lb/hour)	Max. Throughput Rate (ton/hour)	* Emission Factor (lb/ton)	PTE of PM/PM10 (tons/year)	PTE of PM/PM10 (lbs/hour)
Veneer Hog/Dust Handling	1380	0.69	1.00	3.02	0.69
Veneer Lathe	15250	7.63	0.00	0.0	0.00
<b>TOTAL</b>				3.02	

\* Since there is no collection data available for the veneer hog/dust handling and it is uncontrolled, the potential to emit were estimated based on the emission factor obtained from a 1985 edition of AP-42, Table 10.3-21 for log sawing and dust handling. This emission factor is worst case assumption and are valid for dry wood.

The veneer lathe is a unit in which pre-soaked logs are sliced by a slow moving knife into veneer strips and the knife moves too slow to generate particulate. There are negligible emissions associated with the operation of veneer lathe because the logs are pre-soaked.

**METHODOLOGY**

PTE (tons/year) = Max. Throughput Rate (ton/hour) \* Emission Factor (lb/ton) \* 8760 hours/year \* 1 ton/2000 lbs

**Appendix A: Emission Calculations  
Summary**

**Company Name:** Carlisle Veneers, Inc.  
**Address:** 10228 South Old 41, Carlisle, Indiana 47838  
**Registration:** 153-19640  
**Pit ID:** 153-00030  
**Reviewer:** ERG/SD  
**Date:** May 2, 2006

**UNCONTROLLED POTENTIAL TO EMIT IN TONS PER YEAR**

<b>Emission Unit</b>	<b>PM</b>	<b>PM10</b>	<b>SO<sub>2</sub></b>	<b>NOx</b>	<b>VOC</b>	<b>CO</b>	<b>HAPs</b>
One Veneer Dryer					0.59	2.00	0.15
One Wood Gasifier (Burner)	11.0	9.92	0.69	13.5	0.47	16.5	0.92
Wood Working Facility	3.02	3.02					
<b>TOTAL</b>	14.0	12.9	0.69	13.5	1.06	18.5	1.07