



INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

We Protect Hoosiers and Our Environment.

Mitchell E. Daniels Jr.
Governor

Thomas W. Easterly
Commissioner

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

TO: Interested Parties / Applicant

DATE: December 5, 2008

RE: Bontrager & Sons Projects / 039-27103-00682

FROM: Matthew Stuckey, Branch 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, Suite N 501E, 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 1/2/08



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REGISTRATION OFFICE OF AIR QUALITY

**Bontrager & Sons Projects
14872 County Road 126
Goshen, Indiana 46528**

Pursuant to 326 IAC 2-5.1 (Construction of New Sources: Registrations) and 326 IAC 2-5.5 (Registrations), (herein known as the Registrant) is hereby authorized to construct and operate subject to the conditions contained herein, the source described in Section A (Source Summary) of this registration.

Registration No. 039-27103-00682	
Issued by/Original Signed By: Alfred C. Dumauval, Ph. D., Section Chief Permits Branch Office of Air Quality	Issuance Date: December 5, 2008

SECTION A

SOURCE SUMMARY

This registration is based on information requested by the Indiana Department of Environmental Management (IDEM), Office of Air Quality (OAQ). The information describing the source contained in conditions A.1 and A.2 is descriptive information and does not constitute enforceable conditions. However, the Registrant should be aware that a physical change or a change in the method of operation that may render this descriptive information obsolete or inaccurate may trigger requirements for the Registrant to obtain additional permits pursuant to 326 IAC 2.

A.1 General Information

The Registrant owns and operates a stationary unfinished wood furniture manufacturing operation.

Source Address:	14872 County Road 126, Goshen, Indiana 46528
Mailing Address:	14872 County Road 126, Goshen, Indiana 46528
General Source Phone Number:	(574) 825-3213
SIC Code:	2511
County Location:	Elkhart County
Source Location Status:	Attainment for all criteria pollutants
Source Status:	Registration

A.2 Emission Units and Pollution Control Equipment Summary

This stationary source consists of the following emission units and pollution control devices:

- (a) One (1) woodworking operation, identified as EU-1, constructed in 1996, with a maximum sawdust collection of 3700 pounds per week, using a cyclone, identified as C-1, and a baghouse, identified as B-1, as control, and exhausting indoors.
- (b) One (1) diesel-fired generator, identified as EU-2, constructed in 2000, with a maximum heat input of 150 horsepower per hour, exhausting through one (1) stack, identified as E-1.
- (c) One (1) wood-fired furnace, identified as EU-3, constructed in 1998, with a maximum heat input of 125,000 British thermal units (Btu) per hour, exhausting through one (1) stack, identified as S-1.
- (d) Unpaved roads.

SECTION B GENERAL CONDITIONS

B.1 Definitions [326 IAC 2-1.1-1]

Terms in this registration shall have the definition assigned to such terms in the referenced regulation. In the absence of definitions in the referenced regulation, the applicable definitions found in the statutes or regulations (IC 13-11, 326 IAC 1-2 and 326 IAC 2-1.1-1) shall prevail.

B.2 Effective Date of Registration [IC 13-15-5-3]

Pursuant to IC 13-15-5-3, this registration is effective immediately, unless a petition for stay of effectiveness is filed and granted according to IC 13-15-6-3, and may be revoked or modified in accordance with the provisions of IC 13-15-7-1.

B.3 Registration Revocation [326 IAC 2-1.1-9]

Pursuant to 326 IAC 2-1.1-9 (Revocation), this registration to operate may be revoked for any of the following causes:

- (a) Violation of any conditions of this registration.
- (b) Failure to disclose all the relevant facts, or misrepresentation in obtaining this registration.
- (c) Changes in regulatory requirements that mandate either a temporary or permanent reduction of discharge of contaminants. However, the amendment of appropriate sections of this registration shall not require revocation of this registration.
- (d) For any cause which establishes in the judgment of IDEM, the fact that continuance of this registration is not consistent with purposes of this article.

B.4 Prior Permits Superseded [326 IAC 2-1.1-9.5]

- (a) All terms and conditions of permits established prior to Registration No. 039-27103-00682 and issued pursuant to permitting programs approved into the state implementation plan have been either:
 - (1) incorporated as originally stated,
 - (2) revised, or
 - (3) deleted.
- (b) All previous registrations and permits are superseded by this registration.

B.5 Annual Notification [326 IAC 2-5.1-2(f)(3)] [326 IAC 2-5.5-4(a)(3)]

Pursuant to 326 IAC 2-5.1-2(f)(3) and 326 IAC 2-5.5-4(a)(3):

- (a) An annual notification shall be submitted by an authorized individual to the Office of Air Quality stating whether or not the source is in operation and in compliance with the terms and conditions contained in this registration.
- (b) The annual notice shall be submitted in the format attached no later than March 1 of each year to:

Indiana Department of Environmental Management
Compliance Branch, Office of Air Quality
100 North Senate Avenue
MC 61-53 IGCN 1003

Indianapolis, IN 46204-2251

- (c) The notification shall be considered timely if the date postmarked on the envelope or certified mail receipt, or affixed by the shipper on the private shipping receipt, is on or before the date it is due. If the document is submitted by any other means, it shall be considered timely if received by IDEM, OAQ on or before the date it is due.

B.6 Source Modification Requirement [326 IAC 2-5.5-6(a)]

Pursuant to 326 IAC 2-5.5-6(a), 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.

B.7 Registrations [326 IAC 2-5.1-2(i)]

Pursuant to 326 IAC 2-5.1-2(i), this registration does not limit the source's potential to emit.

SECTION C

SOURCE OPERATION CONDITIONS

Entire Source

Emission Limitations and Standards [326 IAC 2-5.1-2(g)] [326 IAC 2-5.5-4(b)]

C.1 Opacity [326 IAC 5-1]

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, unless otherwise stated in this registration:

- (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.

C.2 Fugitive Dust Emissions [326 IAC 6-4]

The Registrant shall not allow fugitive dust to escape beyond the property line or boundaries of the property, right-of-way, or easement on which the source is located, in a manner that would violate 326 IAC 6-4 (Fugitive Dust Emissions).

SECTION D.1

OPERATION CONDITIONS

Facility Description [326 IAC 2-5.1-2(f)(2)] [326 IAC 2-5.5-4(a)(2)]:

- (a) One (1) woodworking operation, identified as EU-1, constructed in 1996, with a maximum sawdust collection of 3700 pounds per week, using a cyclone, identified as C-1, and a baghouse, identified as B-1, as control, and exhausting indoors.

(The information describing the process contained in this emissions unit description box is descriptive information and does not constitute enforceable conditions.)

Emission Limitations and Standards [326 IAC 2-5.1-2(f)(1)] [326 IAC 2-5.5-4(a)(1)]

D.1.1 Particulate Emission Limitation [326 IAC 6-3]

Pursuant to 326 IAC 6-3-2, the particulate matter (PM) from the woodworking operation, identified as EU-1, shall not exceed 1.14 pounds per hour when operating at a process weight rate of 0.1482 tons per hour. The pound per hour limitation was calculated with the following equation:

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

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

D.1.2 Particulate

Particulate from the woodworking operation shall be controlled by the baghouse at all times that the woodworking operation is in operation, and the Permittee shall operate the baghouse in accordance with manufacturer's specifications.

**INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
COMPLIANCE BRANCH**

**REGISTRATION
ANNUAL NOTIFICATION**

This form should be used to comply with the notification requirements under 326 IAC 2-5.1-2(f)(3) and 326 IAC 2-5.5-4(a)(3).

Company Name:	Bontrager & Sons Projects
Address:	14872 County Road 126
City:	Goshen, Indiana 46528
Phone Number:	(574) 825-3213
Registration No.:	039-27103-00682

I hereby certify that Bontrager & Sons Projects is :

- still in operation.
- no longer in operation.
- in compliance with the requirements of Registration No. 039-27103-00682.
- not in compliance with the requirements of Registration No. 039-27103-00682.

I hereby certify that Bontrager & Sons Projects is :

Authorized Individual (typed):
Title:
Signature:
Phone Number:
Date:

If there are any conditions or requirements for which the source is not in compliance, provide a narrative description of how the source did or will achieve compliance and the date compliance was, or will be achieved.

Noncompliance:

Indiana Department of Environmental Management Office of Air Quality

Technical Support Document (TSD) for a

Source Description and Location

Source Name:	Bontrager & Sons Projects
Source Location:	14872 County Road 126, Goshen, Indiana 46528
County:	Elkhart
SIC Code:	2511
Registration No.:	039-27103-00682
Permit Reviewer:	Anne-Marie C. Hart

On October 31, 2008, the Office of Air Quality (OAQ) has received an application from Bontrager & Sons Projects related to the operation of an existing unfinished wood furniture manufacturing operation.

Existing Approvals

There have been no previous approvals issued to this source.

County Attainment Status

The source is located in Elkhart County.

Pollutant	Designation
SO ₂	Better than national standards.
CO	Unclassifiable or attainment effective November 15, 1990.
O ₃	Attainment effective July 19, 2007, for the 8-hour ozone standard. ¹
PM ₁₀	Unclassifiable effective November 15, 1990.
NO ₂	Cannot be classified or better than national standards.
Pb	Not designated.
¹ Attainment effective October 18, 2000, for the 1-hour ozone standard for the South Bend-Elkhart area, including Elkhart County, and is a maintenance area for the 1-hour National Ambient Air Quality Standards (NAAQS) for purposes of 40 CFR 51, Subpart X*. The 1-hour standard was revoked effective June 15, 2005. Unclassifiable or attainment effective April 5, 2005, for PM2.5.	

- (a) **Ozone Standards**
 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 ozone. Elkhart County has been designated as attainment or unclassifiable for ozone. Therefore, VOC and NOx emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2.
- (b) **PM2.5**
 Elkhart County has been classified as attainment for PM2.5. On May 8, 2008 U.S. EPA promulgated the requirements for Prevention of Significant Deterioration (PSD) for PM2.5 emissions, and the effective date of these rules was July 15th, 2008. Indiana has three years from the publication of these rules to revise its PSD rules, 326 IAC 2-2, to include those requirements. The May 8, 2008 rule revisions require IDEM to regulate PM10 emissions as a surrogate for PM2.5 emissions until 326 IAC 2-2 is revised.

- (c) Other Criteria Pollutants
Elkhart County has been classified as attainment or unclassifiable in Indiana for all regulated criteria pollutants. Therefore, these emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2.

Fugitive Emissions

The fugitive emissions of criteria pollutants and hazardous air pollutants are counted toward the determination of 326 IAC 2-5.1-2 (Registrations) applicability.

Unpermitted Emission Units and Pollution Control Equipment

The source consists of the following unpermitted emission unit(s):

- (a) One (1) woodworking operation, identified as EU-1, constructed in 1996, with a maximum sawdust collection of 3700 pounds per week, using a cyclone, identified as C-1, and a baghouse, identified as B-1, as control, and exhausting indoors.
- (b) One (1) diesel-fired generator, identified as EU-2, constructed in 2000, with a maximum heat input of 150 horsepower per hour, exhausting through one (1) stack, identified as E-1.
- (c) One (1) wood-fired furnace, identified as EU-3, constructed in 1998, with a maximum heat input of 125,000 British thermal units (Btu) per hour, exhausting through one (1) stack, identified as S-1.
- (d) Unpaved roads.

Enforcement Issues

IDEM is aware that equipment has been constructed operated prior to receipt of the proper permit. IDEM is reviewing this matter and will take the appropriate action. This proposed approval is intended to satisfy the requirements of the construction permit rules.

Emission Calculations

See Appendix A of this TSD for detailed emission calculations.

“Integral Part of the Process” Determination

In October 1993 a Final Order Granting Summary Judgment was signed by an Administrative Law Judge (“ALJ”) resolving an appeal of an IDEM permit related to the method by which IDEM calculated potential emissions from woodworking operations. In his findings, the ALJ determined that particulate controls were necessary for the facility to produce its normal product and is integral to the normal operation of the facility, and therefore, potential emissions were to be calculated after controls. Based on this ruling, potential emissions for particulate matter for the woodworking operation were calculated after consideration of the controls.

Particulate from the woodworking operation shall be controlled by the cyclone C-1 and baghouse B-1 at all times that the woodworking operation is in operation, and the Permittee shall operate the cyclone and baghouse in accordance with manufacturer’s specifications.

Permit Level Determination –Registration

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

Process/ Emission Unit	Potential To Emit of the Entire Source (tons/year)								
	PM	PM10 *	PM2.5	SO ₂	NO _x	VOC	CO	Total HAPs	Worst Single HAP
Woodworking Operation (EU-1)	3.79	3.79	3.79	0.00	0.00	0.00	0.00	0.00	0.00
Diesel-Fired Generator (EU-2)	1.45	1.45	1.45	1.35	20.37	1.65	4.39	0.00	0.00
Wood-Fired Furnace (EU-3)	0.22	0.21	0.18	0.01	0.27	0.01	0.33	0.02	0.01 HCl
Fugitive Emissions	0.23	0.06	0.06	0.00	0.00	0.00	0.00	0.00	0.00
Total PTE of Entire Source	5.69	5.50	5.47	1.36	20.64	1.66	4.72	0.02	0.01 HCl
Exemption Levels	5	5	5	10	10	5 or 10	25	25	10
Registration Levels	25	25	25	25	25	25	100	25	10
negl. = negligible * Under the Part 70 Permit program (40 CFR 70), particulate matter with an aerodynamic diameter less than or equal to a nominal 10 micrometers (PM10), not particulate matter (PM), is considered as a "regulated air pollutant".									

- (a) The potential to emit (PTE) (as defined in 326 IAC 2-1.1-1(16)) of PM, PM10 and NO_x are within the ranges listed in 326 IAC 2-5.1-2(a)(1). The PTE of all other regulated criteria pollutants are less than the ranges listed in 326 IAC 2-5.1-2(a)(1). Therefore, the source is subject to the provisions of 326 IAC 2-5.1-2 (Registrations). A Registration will be issued.
- (b) The potential to emit (PTE) (as defined in 326 IAC 2-1.1-1(16)) of any single HAP is less than ten (10) tons per year and the PTE of a combination of HAPs is less than twenty-five (25) tons per year. Therefore, this source is an area source under Section 112 of the Clean Air Act (CAA) and not subject to the provisions of 326 IAC 2-7.

Federal Rule Applicability Determination

New Source Performance Standards (NSPS)

- (a) The requirements of the New Source Performance Standard for Stationary Compression Ignition Internal Combustion Engines, 40 CFR 60, Subpart IIII, (326 IAC 12), are not included in the permit, since the diesel-fired generator was constructed before July 11, 2005, the applicability date for this rule.
- (b) The requirements of the New Source Performance Standard for New Residential Wood Heaters, 40 CFR 60, Subpart AAA (326 IAC 12), are not included in the permit, since the wood-fired furnace is considered a furnace as defined by this Subpart.

- (c) There are no New Source Performance Standards (NSPS)(40 CFR Part 60) included in the permit.

National Emission Standards for Hazardous Air Pollutants (NESHAP)

- (d) The requirements of the National Emission Standards for Hazardous Air Pollutants (NESHAPs) for Stationary Reciprocating Internal Combustion Engines, 40 CFR 63, Subpart ZZZZ (326 IAC 20-82, are not included in the permit. The diesel-fired emergency generator, identified as EU-2, is an existing compression ignition stationary reciprocating internal combustion engine and therefore does not have to meet the requirements of this Subpart (40 CFR 63.6590(b)(3)).
- (e) There are no National Emission Standards for Hazardous Air Pollutants (NESHAPs) (326 IAC 14, 326 IAC 20 and 40 CFR Part 63) included in the permit.

Compliance Assurance Monitoring (CAM)

- (f) Pursuant to 40 CFR 64.2, Compliance Assurance Monitoring (CAM) is not included in the permit, because the unlimited potential to emit of the source is less than the Title V major source thresholds and the source is not required to obtain a Part 70 or Part 71 permit.

State Rule Applicability Determination

The following state rules are applicable to the source:

- (a) 326 IAC 2-5.1-2 (Registrations)
Registration applicability is discussed under the Permit Level Determination – Registration section above.
- (b) 326 IAC 2-4.1 (Major Sources of Hazardous Air Pollutants (HAP))
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. Therefore, this source is an area source under Section 112 of the Clean Air Act (CAA) and not subject to the provisions of 326 IAC 2-4.1.
- (c) 326 IAC 2-6 (Emission Reporting)
Pursuant to 326 IAC 2-6-1, this source is not subject to this rule, because it is not required to have an operating permit under 326 IAC 2-7 (Part 70), it is not located in Lake, Porter, or LaPorte County, and it does not emit lead into the ambient air at levels equal to or greater than 5 tons per year. Therefore, 326 IAC 2-6 does not apply.
- (d) 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:
- (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.
- (e) 326 IAC 6-4 (Fugitive Dust Emissions Limitations)
Pursuant to 326 IAC 6-4 (Fugitive Dust Emissions Limitations), the source shall not allow fugitive dust to escape beyond the property line or boundaries of the property, right-of-way, or easement

on which the source is located, in a manner that would violate 326 IAC 6-4.

- (f) 326 IAC 6-5 (Fugitive Particulate Matter Emission Limitations)
The source is not subject to the requirements of 326 IAC 6-5, because the source does not have potential fugitive particulate emissions greater than 25 tons per year. Therefore, 326 IAC 6-5 does not apply.
- (g) 326 IAC 8-1-6 (VOC Rules: General Reduction Requirements for New Facilities)
Each of the emission units at this source is not subject to the requirements of 326 IAC 8-1-6, since the unlimited VOC potential emissions from each emission unit is less than twenty-five (25) tons per year.

Woodworking Operation

- (h) 326 IAC 6-3-2 (Particulate Emission Limitations for Manufacturing Processes)
Pursuant to 326 IAC 6-3-2, the particulate matter (PM) from the woodworking operation, identified as EU-1, shall not exceed 1.14 pounds per hour when operating at a process weight rate of 0.1482 tons per hour. The pound per hour limitation was calculated with the following equation:

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

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

IDEM, OAQ has agreed that the cyclone C-1 and baghouse B-1 associated with the woodworking operation will be considered as an integral part of the woodworking operation and the potential to emit particulate (PM/PM10) will be determined after the cyclone and baghouse.

Since the cyclone and baghouse are considered an integral part of the woodworking operation, particulate from the woodworking operation shall be controlled by the cyclone C-1 and baghouse B-1 at all times that the woodworking operation is in operation, and the Permittee shall operate the cyclone and baghouse in accordance with manufacturer's specifications.

Diesel-Fired Generator

- (i) 326 IAC 6-2 (Particulate Emission Limitations for Sources of Indirect Heating)
The diesel-fired generator, identified as EU-2, is not a source of indirect heating. Therefore, the diesel-fired generator, identified as EU-2, is not subject to 326 IAC 6-2.
- (j) 326 IAC 7-1.1 (Sulfur Dioxide Emission Limitations)
The potential to emit sulfur dioxide from the diesel-fired generator, identified as EU-2, is less than twenty-five (25) tons per year and less than ten (10) pounds per hour. Therefore, the diesel-fired generator, identified as EU-2, is not subject to 326 IAC 7-1.1.

Wood-Fired Furnace

- (k) 326 IAC 6-2 (Particulate Emission Limitations for Sources of Indirect Heating)
The wood-fired furnace, identified as EU-3, is not a source of indirect heating. Therefore, the wood-fired furnace, identified as EU-3, is not subject to 326 IAC 6-2.
- (l) 326 IAC 7-1.1 (Sulfur Dioxide Emission Limitations)
The potential to emit sulfur dioxide from the wood-fired furnace, identified as EU-3, is less than twenty-five (25) tons per year and less than ten (10) pounds per hour. Therefore, the wood-fired furnace, identified as EU-3, is not subject to 326 IAC 7-1.1.

Conclusion and Recommendation

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 October 31, 2008.

The operation of this source shall be subject to the conditions of the attached proposed Registration No. 039-27103-00682. The staff recommends to the Commissioner that this Registration be approved.

IDEM Contact

- (a) Questions regarding this proposed permit can be directed to Anne-Marie C. Hart at the Indiana Department Environmental Management, Office of Air Quality, Permits Branch, 100 North Senate Avenue, MC 61-53 IGCN 1003, Indianapolis, Indiana 46204-2251 or by telephone at (317) 234-5401 or toll free at 1-800-451-6027 extension 4-5401.
- (b) A copy of the findings is available on the Internet at: <http://www.in.gov/ai/appfiles/idem-caats/>
- (c) For additional information about air permits and how the public and interested parties can participate, refer to the IDEM's Guide for Citizen Participation and Permit Guide on the Internet at: www.idem.in.gov

Appendix A: Emission Calculations

Company Name: Bontrager & Sons Projects
Address City IN Zip: 14872 County Road 126, Goshen, Indiana 46528
Permit Number: 039-27103-00682
Plt ID: 039-00682
Reviewer: Anne-Marie C. Hart
Date: November 24, 2008

Process/Emission Unit	Tons/Year									
	PM	PM10	PM2.5	SO2	NOx	VOC	CO	HAP	Worst-Case HAP	
Woodworking Operation (EU-1)*	3.79	3.79	3.79	0.00	0.00	0.00	0.00	0.00	0.00	
Diesel Generator (EU-2)	1.45	1.45	1.45	1.35	20.37	1.65	4.39	0.00	0.00	
Wood-Fired Furnace (EU-3)	0.22	0.21	0.18	0.01	0.27	0.01	0.33	0.02	0.01	HCl
Unpaved Roads (Fugitive Emissions)	0.23	0.06	0.06	0.00	0.00	0.00	0.00	0.00	0.00	
Total	5.69	5.50	5.47	1.36	20.64	1.66	4.72	0.02	0.01	HCl

*The dust collector controlling particulate emissions from the woodworking operation is considered integral to the process.

Appendix A: Emission Calculations

Woodworking Operation

Company Name: Bontrager & Sons Projects
Address City IN Zip: 14872 County Road 126, Goshen, Indiana 46528
Permit Number: 039-27103-00682
Plt ID: 039-00682
Reviewer: Anne-Marie C. Hart
Date: November 24, 2008

Amount of Sawdust Collected	3700 pounds/week
Hours of Operation	45 hours/week
Efficiency of Cyclone (C-1)	80%
Efficiency of Baghouse (B-1)	95%
Hourly Uncontrolled Emissions:	86.55 lb/hour
Cyclone Emissions	17.31 lb/hour
Baghouse Emissions	0.87 lb/hour
Potential Emissions	3.79 tons/year

The dust collector controlling particulate emissions from the woodworking operation is considered integral to the process.

**Appendix A: Emission Calculations
Internal Combustion Engines - Diesel Fuel**

Reciprocating

Company Name: Bontrager & Sons Projects
Address City IN Zip: 14872 County Road 126, Goshen, Indiana 46528
Permit Number: 039-27103-00682
Plt ID: 039-00682
Reviewer: Anne-Marie C. Hart
Date: November 24, 2008

Heat Input Capacity
Horsepower (hp)

Potential Throughput
hp-hr/yr

150.0

1314000.0

Emission Factor in lb/hp-hr	Pollutant					
	PM*	PM10/PM2.5*	SO2	NOx	VOC	CO
	0.0022	0.0022	0.0021	0.0310	0.0025	0.0067
Potential Emission in tons/yr	1.45	1.45	1.35	20.37	1.65	4.39

Methodology

Potential Throughput (hp-hr/yr) = hp * 8760 hr/yr

Use a conversion factor of 7,000 Btu per hp-hr to convert from horsepower to Btu/hr, unless the source gives you a source-specific brake-specific fuel consumption. (AP-42, Footnote a, Table 3.3-1)

Emission Factors are from AP42 (Supplement B 10/96), Table 3.3-2

Emission (tons/yr) = [Heat input rate (MMBtu/hr) x Emission Factor (lb/MMBtu)] * 8760 hr/yr / (2,000 lb/ton)

Emission (tons/yr) = [Potential Throughput (hp-hr/yr) x Emission Factor (lb/hp-hr)] / (2,000 lb/ton)

*PM emission factors are assumed to be equivalent to PM10/PM2.5 emission factors. No information was given regarding which method was used to determine the factor or the fraction of PM10 which is condensable.

**Appendix A: Emissions Calculations
External Combustion Boiler
Wood Waste Combustion (uncontrolled)
Dry Wood**

**Company Name: Bontrager & Sons Projects
Address City IN Zip: 14872 County Road 126, Goshen, Indiana 46528
Permit Number: 039-27103-00682
Plt ID: 039-00682
Reviewer: Anne-Marie C. Hart
Date: November 24, 2008**

Capacity (MMBtu/hr) 0.125

Emission Factor in lb/MMBtu	Pollutant						
	PM*	PM10*	PM2.5*	SO2	NOx	VOC	CO**
	0.4	0.377	0.327	0.025	0.49	0.017	0.6
Potential Emissions in tons/yr	0.219	0.206408	0.1790325	0.0136875	0.268275	0.009308	0.3285

Wet wood is considered to be greater than or equal to 20% moisture content. Dry wood is considered to be less than 20% moisture content.
*The PM10 and PM2.5 emission factors include the condensable PM emission factor of 0.017 lb/MMBtu, measured by EPA Method 202 (or equivalent) and the appropriate filterable PM emission factor, measured by EPA Method 5 (or equivalent). The PM emission factor is filterable PM measured by EPA Method 5 (or equivalent).

**The CO emission factor is for stokers and dutch ovens/fuel cells.

Emission Factor in lb/MMBtu	Selected Hazardous Air Pollutants				
	Acrolein	Benzene	Formaldehyde	Hydrogen Chloride	Styrene
	4.0E-03	4.2E-03	4.4E-03	1.9E-02	1.9E-03
Potential Emissions in tons/yr	2.2E-03	2.3E-03	2.4E-03	1.0E-02	1.0E-03
	Total HAP				1.8E-02

Methodology

Emission Factors are from AP-42 Chapter 1.6 (revised 9/03)

Emissions (tons/yr) = Capacity (MMBtu/hr) x Emission Factor (lb/MMBtu) x 8760hrs/yr x 1ton/2000lbs

These factors include the five HAPs with the highest AP-42 emission factors.

**Appendix A: Emission Calculations
Fugitive Dust Emissions - Unpaved Roads**

Company Name: Bontrager & Sons Projects
Address City IN Zip: 14872 County Road 126, Goshen, Indiana 46528
Permit Number: 039-27103-00682
Plt ID: 039-00682
Reviewer: Anne-Marie C. Hart
Date: November 24, 2008

Unpaved Roads at Industrial Site

The following calculations determine the amount of emissions created by unpaved roads, based on 8,760 hours of use and AP-42, Ch 13.2.2 (12/2003).

Vehicle Information (provided by source)

Type	Maximum number of vehicles	Number of one-way trips per day per vehicle	Maximum trips per day (trip/day)	Maximum Weight Loaded (tons/trip)	Total Weight driven per day (ton/day)	Maximum one-way distance (feet/trip)	Maximum one-way distance (mi/trip)	Maximum one-way miles (miles/day)	Maximum one-way miles (miles/yr)
Pickup Truck (entering plant) (one-way trip)	1.0	2.4	2.4	5.0	12.0	211	0.040	0.1	35.0
Pickup Truck (leaving plant) (one-way trip)	1.0	2.4	2.4	2.5	6.0	211	0.040	0.1	35.0
Tractor Trailer (entering plant) (one-way trip)	1.0	2.4	2.4	33.8	81.1	211	0.040	0.1	35.0
Tractor Trailer (leaving plant) (one-way trip)	1.0	2.4	2.4	11.0	26.4	211	0.040	0.1	35.0
Total			9.6		125.5			0.4	140.1

Average Vehicle Weight Per Trip = $\frac{13.1}{0.04}$ tons/trip
 Average Miles Per Trip = $\frac{0.04}{13.1}$ miles/trip

Unmitigated Emission Factor, $E_f = k \cdot [(s/12)^a] \cdot [(W/3)^b]$ (Equation 1a from AP-42 13.2.2)

	PM	PM10	
where k =	4.9	1.5	lb/mi = particle size multiplier (AP-42 Table 13.2.2-2 for Industrial Roads)
s =	4.8	4.8	% = mean % silt content of unpaved roads (AP-42 Table 13.2.2-3 Sand/Gravel Processing Plant Road)
a =	0.7	0.9	= constant (AP-42 Table 13.2.2-2)
W =	13.1	13.1	tons = average vehicle weight (provided by source)
b =	0.45	0.45	= constant (AP-42 Table 13.2.2-2)

Taking natural mitigation due to precipitation into consideration, Mitigated Emission Factor, $E_{ext} = E \cdot [(365 - P)/365]$

Mitigated Emission Factor, $E_{ext} = E \cdot [(365 - P)/365]$
 where P = 125 days of rain greater than or equal to 0.01 inches (see Fig. 13.2.2-1)

	PM	PM10	
Unmitigated Emission Factor, $E_f =$	5.00	1.28	lb/mile
Mitigated Emission Factor, $E_{ext} =$	3.29	0.84	lb/mile
Dust Control Efficiency =	50%	50%	(pursuant to control measures outlined in fugitive dust control plan)

Process	Unmitigated PTE of PM (tons/yr)	Unmitigated PTE of PM10 (tons/yr)	Mitigated PTE of PM (tons/yr)	Mitigated PTE of PM10 (tons/yr)	Controlled PTE of PM (tons/yr)	Controlled PTE of PM10 (tons/yr)
Pickup Truck (entering plant) (one-way trip)	0.09	0.02	0.06	0.01	0.03	0.01
Pickup Truck (leaving plant) (one-way trip)	0.09	0.02	0.06	0.01	0.03	0.01
Tractor Trailer (entering plant) (one-way trip)	0.09	0.02	0.06	0.01	0.03	0.01
Tractor Trailer (leaving plant) (one-way trip)	0.09	0.02	0.06	0.01	0.03	0.01
Total	0.35	0.09	0.23	0.06	0.12	0.03

Methodology

Total Weight driven per day (ton/day) = [Maximum Weight Loaded (tons/trip)] * [Maximum trips per day (trip/day)]
 Maximum one-way distance (mi/trip) = [Maximum one-way distance (feet/trip)] / [5280 ft/mile]
 Maximum one-way miles (miles/day) = [Maximum trips per year (trip/day)] * [Maximum one-way distance (mi/trip)]
 Average Vehicle Weight Per Trip (ton/trip) = SUM[Total Weight driven per day (ton/day)] / SUM[Maximum trips per day (trip/day)]
 Average Miles Per Trip (miles/trip) = SUM[Maximum one-way miles (miles/day)] / SUM[Maximum trips per year (trip/day)]
 Unmitigated PTE (tons/yr) = (Maximum one-way miles (miles/yr)) * (Unmitigated Emission Factor (lb/mile)) * (ton/2000 lbs)
 Mitigated PTE (tons/yr) = (Maximum one-way miles (miles/yr)) * (Mitigated Emission Factor (lb/mile)) * (ton/2000 lbs)
 Controlled PTE (tons/yr) = (Mitigated PTE (tons/yr)) * (1 - Dust Control Efficiency)

Abbreviations

PM = Particulate Matter
 PM10 = Particulate Matter (<10 um)
 PTE = Potential to Emit