



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: February 20, 2012

RE: Genesis Products, Inc. / 039-31086-00656

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

Genesis Products, Inc.
2608 Almac Court, Elkhart, IN 46514
and
2702 Ada Drive, Elkhart, IN 46514

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. R039-31086-00656	
Issued by: Iryn Calilung, Section Chief Permits Branch Office of Air Quality	 Issuance Date: February 20, 2012

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 wood cabinet and door manufacturing plant.

Source Address:	2608 Almac Court, Elkhart, IN 46514 (Plants 1 and 2) 2702 Ada Drive, Elkhart, IN 46514 (Plant 5)
General Source Phone Number:	574-229-7646
SIC Code:	2434 (Wood Kitchen Cabinets)
County Location:	Elkhart
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:

Plant 1

- (a) one (1) Flow Lam wood laminator, identified as FL1, constructed in 2011, for applying decorative laminates to wood using roll application of a urethane adhesive, with a maximum capacity of 600 boards per hour (19200 square feet per hour, 8 pounds per board). Following lamination, the sides of the laminated boards are sanded by two (2) side sanders, with particulate matter emissions controlled by two (2) integral dust collection systems with baghouses, identified as D1 and D2, exhausting indoors.
- (b) one (1) Harlin wood laminator, identified as HL1, constructed in 2011, for applying decorative laminates to wood using roll application of a urethane adhesive, with a maximum capacity of 600 boards per hour (19200 square feet per hour, 8 pounds per board). Following lamination, the sides of the laminated boards are sanded by one (1) side sander, with particulate matter emissions controlled by one (1) integral dust collection system with baghouse, identified as D3, exhausting indoors.
- (c) one (1) hot melt wood laminator, identified as HML, constructed in 2011, for applying decorative laminates to wood using roll application of a urethane adhesive, with a maximum capacity of 60 boards per hour (1920 square feet per hour), exhausting indoors.
- (d) One (1) natural gas-fired building heater, constructed in 2002, with a maximum heat input capacity of 0.175 MMBtu per hour, exhausting indoors.
- (e) Ten (10) natural gas-fired space heaters, constructed in 2002, with a combined maximum heat input capacity of 1.87 MMBtu per hour, exhausting indoors.
- (f) Paved roads and parking lots with public access.

Plant 2

- (g) One (1) woodworking operation, identified as MWW, constructed in 2006, consisting of various woodworking equipment, with a maximum capacity of 9500 pounds of wood per

hour, with particulate matter emissions controlled by one (1) integral dust collection system with baghouse, identified as D4, exhausting indoors, including the following units:

- (1) Three (3) edge sanders;
 - (2) Two (2) shapers;
 - (3) One (1) chop saw;
 - (4) Three (3) table routers;
 - (5) Two (2) double-cut miter saws;
 - (6) One (1) panel saw;
 - (7) One (1) CNC machine; and
 - (8) One (1) mill taper.
- (h) one (1) surface coating spray booth, identified as SB, constructed in 2006, equipped with two (2) high-volume low-pressure (HVLP) spray guns for application of coatings to wood, at a maximum coating usage rate of 0.454 gallons of adhesive per hour, coating a maximum of 60 boards per hour (40 square feet per hour), using dry filters for particulate matter overspray control, and exhausting to stack SBV1.
- (i) one (1) roll coating operation, identified as RC, constructed in 2006, for the application of adhesive to wood, with a maximum capacity of 600 boards per hour (400 square feet per hour), and a maximum adhesive usage rate of 4.54 gallons of adhesive per hour, exhausting indoors.
- (j) Eight (8) natural gas-fired space heaters, constructed in 2002, with a combined maximum heat input capacity of 1.142 MMBtu per hour, exhausting indoors.
- (k) Paved roads and parking lots with public access.

Plant 5

- (l) One (1) PCM Mold Preparation and Cleanup Operation, identified as PCMMP, constructed in 2009, consisting hand application of mold release agent on plastic molds prior to use in the Polymer Cast Molding (PCM) Operation at a maximum mold release agent usage rate of 0.045 gallons of mold release agent per hour, with cleanup operations utilizing non-VOC containing solvents, and exhausting indoors.
- (m) One (1) Polymer Cast Molding Operation, identified as PCM1, constructed in 2009, consisting pouring of liquid polyester resin into plastic molds followed by baking and curing into a solid casting, with a maximum resin usage rate of 2.25 gallons per hour and a maximum methyl ethyl ketone peroxide catalyst usage rate of 0.053 gallons per hour. After baking and curing is complete, minor grinding and sanding is done on the plastic product to produce the final product, with particulate matter emissions controlled by one (1) dust collection system with baghouse, identified as D5, exhausting indoors.
- (n) One (1) natural gas-fired building heater, identified as ThermoCycler, constructed in 2009, with a maximum heat input capacity of 1.5 MMBtu per hour, exhausting indoors.
- (o) Ten (10) natural gas-fired space heaters, constructed in 2009, with a combined maximum heat input capacity of 0.85 MMBtu per hour, exhausting indoors.
- (p) Paved roads and parking lots with public access.

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. R039-31086-00656 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 and Enforcement 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.

B.8 Preventive Maintenance Plan [326 IAC 1-6-3]

- (a) If required by specific condition(s) in Section D of this registration, the Registrant shall prepare and maintain Preventive Maintenance Plans (PMPs) no later than ninety (90) days after issuance of this registration or ninety (90) days after initial start-up, whichever is later, including the following information on each facility:
- (1) Identification of the individual(s) responsible for inspecting, maintaining, and repairing emission control devices;
 - (2) A description of the items or conditions that will be inspected and the inspection schedule for said items or conditions; and
 - (3) Identification and quantification of the replacement parts that will be maintained in inventory for quick replacement.

If, due to circumstances beyond the Registrant's control, the PMPs cannot be prepared and maintained within the above time frame, the Registrant may extend the date an additional ninety (90) days provided the Registrant notifies:

Indiana Department of Environmental Management
Compliance and Enforcement Branch, Office of Air Quality
100 North Senate Avenue
MC 61-53 IGCN 1003
Indianapolis, Indiana 46204-2251

The Registrant shall implement the PMPs.

- (b) A copy of the PMPs shall be submitted to IDEM, OAQ upon request and within a reasonable time, and shall be subject to review and approval by IDEM, OAQ. IDEM, OAQ may require the Registrant to revise its PMPs whenever lack of proper maintenance causes or is the primary contributor to an exceedance of any limitation on emissions.
- (c) To the extent the Registrant is required by 40 CFR Part 60 or 40 CFR Part 63 to have an Operation Maintenance, and Monitoring (OMM) Plan for a unit, such OMM Plan is deemed to satisfy the PMP requirements of 326 IAC 1-6-3 for that unit.

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).

Corrective Actions and Response Steps [326 IAC 2-5.1-3(e)(2)] [326 IAC 2-5.5-4(b)]

C.3 Response to Excursions or Exceedances [326 IAC 2-5.1-3(e)(2)] [326 IAC 2-5.5-4(b)]

Upon detecting an excursion where a response step is required by the D Section or an exceedance of a limitation in this permit:

- (a) The Registrant shall take reasonable response steps to restore operation of the emissions unit (including any control device and associated capture system) to its normal or usual manner of operation as expeditiously as practicable in accordance with good air pollution control practices for minimizing excess emissions.
- (b) The response shall include minimizing the period of any startup, shutdown or malfunction. The response may include, but is not limited to, the following:
 - (1) initial inspection and evaluation;
 - (2) recording that operations returned or are returning to normal without operator action (such as through response by a computerized distribution control system);
or
 - (3) any necessary follow-up actions to return operation to normal or usual manner of operation.
- (c) A determination of whether the Registrant has used acceptable procedures in response to an excursion or exceedance will be based on information available, which may include, but is not limited to, the following:
 - (1) monitoring results;

- (2) review of operation and maintenance procedures and records; and/or
- (3) inspection of the control device, associated capture system, and the process.
- (d) Failure to take reasonable response steps shall be considered a deviation from the permit.
- (e) The Registrant shall record the reasonable response steps taken.

Record Keeping and Reporting Requirements [326 IAC 2-5.1-3(e)(2)] [326 IAC 2-5.5-4(b)]

C.4 General Record Keeping Requirements [326 IAC 2-5.1-3(e)(2)] [326 IAC 2-5.5-4(b)]

- (a) Records of all required monitoring data, reports and support information required by this permit shall be retained for a period of at least five (5) years from the date of monitoring sample, measurement, report, or application. These records shall be physically present or electronically accessible at the source location for a minimum of three (3) years. The records may be stored elsewhere for the remaining two (2) years as long as they are available upon request. If the Commissioner makes a request for records to the Registrant, the Registrant shall furnish the records to the Commissioner within a reasonable time.
- (b) Unless otherwise specified in this permit, for all record keeping requirements not already legally required, the Registrant shall be allowed up to ninety (90) days from the date of permit issuance or the date of initial start-up, whichever is later, to begin such record keeping.

SECTION D.1

OPERATION CONDITIONS

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

Plant 1

- (a) one (1) Flow Lam wood laminator, identified as FL1, constructed in 2011, for applying decorative laminates to wood using roll application of a urethane adhesive, with a maximum capacity of 600 boards per hour (19200 square feet per hour, 8 pounds per board). Following lamination, the sides of the laminated boards are sanded by two (2) side sanders, with particulate matter emissions controlled by two (2) integral dust collection systems with baghouses, identified as D1 and D2, exhausting indoors.
- (b) one (1) Harlin wood laminator, identified as HL1, constructed in 2011, for applying decorative laminates to wood using roll application of a urethane adhesive, with a maximum capacity of 600 boards per hour (19200 square feet per hour, 8 pounds per board). Following lamination, the sides of the laminated boards are sanded by one (1) side sander, with particulate matter emissions controlled by one (1) integral dust collection system with baghouse, identified as D3, exhausting indoors.

Plant 2

- (g) One (1) woodworking operation, identified as MWW, constructed in 2006, consisting of various woodworking equipment, with a maximum capacity of 9500 pounds of wood per hour, with particulate matter emissions controlled by one (1) integral dust collection system with baghouse, identified as D4, exhausting indoors, including the following units:
 - (1) Three (3) edge sanders;
 - (2) Two (2) shapers;
 - (3) One (1) chop saw;
 - (4) Three (3) table routers;
 - (5) Two (2) double-cut miter saws;
 - (6) One (1) panel saw;
 - (7) One (1) CNC machine; and
 - (8) One (1) mill taper.
- (h) one (1) surface coating spray booth, identified as SB, constructed in 2006, equipped with two (2) high-volume low-pressure (HVLP) spray guns for application of coatings to wood, at a maximum coating usage rate of 0.454 gallons of adhesive per hour, coating a maximum of 60 boards per hour (40 square feet per hour), using dry filters for particulate matter overspray control, and exhausting to stack SBV1.
- (i) one (1) roll coating operation, identified as RC, constructed in 2006, for the application of adhesive to wood, with a maximum capacity of 600 boards per hour (400 square feet per hour), and a maximum adhesive usage rate of 4.54 gallons of adhesive per hour, exhausting indoors.

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

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

Plant 5

- (m) One (1) Polymer Cast Molding Operation, identified as PCM1, constructed in 2009, consisting pouring of liquid polyester resin into plastic molds followed by baking and curing into a solid casting, with a maximum resin usage rate of 2.25 gallons per hour and a maximum methyl ethyl ketone peroxide catalyst usage rate of 0.053 gallons per hour. After baking and curing is complete, minor grinding and sanding is done on the plastic product to produce the final product, with particulate matter emissions controlled by one (1) dust collection system with baghouse, identified as D5, 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 Limitations [326 IAC 6-3-2]

Pursuant to 326 IAC 6-3 (Particulate Emission Limitations for Manufacturing Processes), particulate emissions from each of the following facilities shall not exceed the allowable emission rates listed in the following table:

Emission Unit/Activity	Process Weight Rate (tons per hour)	326 IAC 6-3-2 Allowable Particulate Emission Rate (pounds per hour)
Wood Laminator FL1 Side Sander 1 (Plant 1)	2.40	7.37
Wood Laminator FL1 Side Sander 2 (Plant 1)	2.40	7.37
Wood Laminator HL1 Side Sander (Plant 1)	0.24	1.58
Woodworking Operation (Plant 2)	4.75	11.65
Polymer Cast Molding PCM1 Grinding and Sanding (Plant 5)	0.011	0.551

These pounds per hour limitations were 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:

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

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.

D.1.2 Particulate Emission Limitations [326 IAC 6-3-2]

Pursuant to 326 IAC 6-3-2(d) (Particulate Emission Limitations for Manufacturing Processes):

- (a) Particulate from the surface coating spray booth (SB) shall be controlled by a dry particulate filter, waterwash, or an equivalent control device, and the Permittee shall operate the control device in accordance with manufacturer's specifications at all times that the surface coating spray booth (SB) is in operation.

- (b) If overspray is visibly detected at the exhaust or accumulates on the ground, the source shall inspect the control device and do either of the following no later than four (4) hours after such observation:
 - (1) Repair the control device so that no overspray is visibly detectable at the exhaust or accumulates on the ground.
 - (2) Operate equipment so that no overspray is visibly detectable at the exhaust or accumulates on the ground.
- (c) If overspray is visibly detected, the Registrant 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.

D.1.3 Volatile Organic Compounds (VOC) [326 IAC 8-2-12]

Pursuant to 326 IAC 8-2-12 (Wood Furniture and Cabinet Coating), for the roll coating operation (RC), the Registrant shall perform surface coating of wood furniture and cabinets, with the exception of no more than ten (10) gallons of coating per day used for touch-up and repair operations, using one (1) or more of the following application systems:

Airless Spray Application
Air Assisted Airless Spray Application
Electrostatic Spray Application
Electrostatic Bell or Disc Application
Heated Airless Spray Application
Roller Coating
Brush or Wipe Application
Dip-and-Drain Application

High Volume Low Pressure (HVLP) Spray Application is an accepted alternative method of application for Air Assisted Airless Spray Application. HVLP spray is the technology used to apply coating to substrate by means of coating application equipment which operates between one-tenth (0.1) and ten (10) pounds per square inch gauge (psig) air pressure measured dynamically at the center of the air cap and at the air horns of the spray system.

D.1.4 Preventive Maintenance Plan [326 IAC 1-6-3]

A Preventive Maintenance Plan is required for these facilities and their control devices. Section B - Preventive Maintenance Plan contains the Registrant's obligation with regard to the preventive maintenance plan required by this condition.

Compliance Determination Requirements [326 IAC 2-5.1-2(g)] [326 IAC 2-5.5-4(b)]

D.1.5 Particulate Control [326 IAC 2-5.5]

- (a) In order to ensure compliance with 326 IAC 2-5.5 (Registrations) and to comply with D.1.1, each of the baghouses associated with the wood laminator side sanders and the woodworking operation (MWW) shall be in operation and control particulate emissions from the wood laminator side sanders and the woodworking operation (MWW) at all times that these processes are in operation.
- (b) In the event that bag failure is observed in a multi-compartment baghouse, if operations will continue for ten (10) days or more after the failure is observed before the failed units will be repaired or replaced, the Registrant shall promptly notify the IDEM, OAQ of the expected date the failed units will be repaired or replaced. The notification shall also

include the status of the applicable compliance monitoring parameters with respect to normal, and the results of any response actions taken up to the time of notification.

Compliance Monitoring Requirements [326 IAC 2-5.1-2(g)] [326 IAC 2-5.5-4(b)]

D.1.6 Baghouse Inspections

An inspection shall be performed semiannually of all bags controlling the wood laminator side sanders and the woodworking operation (MWW). All defective bags shall be replaced. A record shall be kept of the results of the inspection.

D.1.7 Broken or Failed Bag Detection

- (a) For a single compartment baghouse controlling emissions from a process operated continuously, a failed unit and the associated process shall be shut down immediately until the failed unit has been repaired or replaced. Operations may continue only if the event qualifies as an emergency and the Registrant satisfies the requirements of the emergency provisions of this permit (Section C - Response to Excursions or Exceedances).
- (b) For a single compartment baghouse controlling emissions from a batch process, the feed to the process shall be shut down immediately until the failed unit has been repaired or replaced. The emissions unit shall be shut down no later than the completion of the processing of the material in the emission unit. Operations may continue only if the event qualifies as an emergency and the Registrant satisfies the requirements of the emergency provisions of this permit (Section C - Response to Excursions or Exceedances).

Bag failure can be indicated by a significant drop in the baghouse's pressure reading with abnormal visible emissions, by an opacity violation, or by other means such as gas temperature, flow rate, air infiltration, leaks, dust traces or triboflows.

Record Keeping and Reporting Requirements [326 IAC 2-5.1-2(g)] [326 IAC 2-5.5-4(b)]

D.1.8 Record Keeping Requirements

- (a) To document the compliance status with Condition D.1.2(c), the Registrant shall maintain a record of any actions taken if overspray is visibly detected.
- (b) To document the compliance status with Condition D.1.6, the Registrant shall maintain records of the results of the inspections required under Condition D.1.6.
- (c) Section C - General Record Keeping Requirements of this permit contains the Registrant's obligations with regard to the records required by this condition.

**INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT
OFFICE OF AIR QUALITY
COMPLIANCE AND ENFORCEMENT 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:	Genesis Products, Inc.
Address:	2608 Almac Court, Elkhart, IN 46514 and 2702 Ada Drive, Elkhart, IN 46514
Phone Number:	574-229-7646
Registration No.:	R039-31086-00656

I hereby certify that Genesis Products, Inc. is:

still in operation.

I hereby certify that Genesis Products, Inc. is:

no longer in operation.

in compliance with the requirements
of Registration No. R039-31086-00656.

not in compliance with the requirements
of Registration No. R039-31086-00656.

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 Specific Operating Agreement (SSOA) Transitioning to a Registration

Source Description and Location

Source Name: Genesis Products, Inc.
Source Location: 2608 Almac Court, Elkhart, IN 46514 (Plants 1 and 2)
 2702 Ada Drive, Elkhart, IN 46514 (Plant 5)
County: Elkhart
SIC Code: 2434 (Wood Kitchen Cabinets)
Registration No.: R039-31086-00656
Permit Reviewer: Nathan C. Bell

On November 1, 2011, the Office of Air Quality (OAQ) received an application from Genesis Products, Inc., to construct and operate three (3) new wood laminators at its existing stationary wood cabinet and door manufacturing plant (located at 2608 Almac Court, Elkhart, IN 46514), to add an existing polymer casting operation located at 2702 Ada Drive, Elkhart, IN 46514 (Plant 5), and to transition from a SSOA to a Registration.

Existing Approvals

Plants 1 and 2 have been operating under Source Specific Operating Agreement (SSOA) No. 039-23582-00656, issued on November 21, 2006, as a stationary laminated panel and door manufacturing plant (surface coating operations, woodworking operations, and external combustion units).

Due to this application, the source is transitioning from a SSOA to a Registration.

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 PM _{2.5} .	

- (a) **Ozone Standards**
 Volatile organic compounds (VOC) and Nitrogen Oxides (NO_x) 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_x 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 NO_x emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2.

- (b) **PM_{2.5}**
Elkhart County has been classified as attainment for PM_{2.5}. On May 8, 2008 U.S. EPA promulgated the requirements for Prevention of Significant Deterioration (PSD) for PM_{2.5} emissions. These rules became effective on July 15, 2008. On May 4, 2011 the air pollution control board issued an emergency rule establishing the direct PM_{2.5} significant level at ten (10) tons per year. This rule became effective, June 28, 2011. Therefore, direct PM_{2.5} and SO₂ 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) **Other Criteria Pollutants**
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.

Fugitive Emissions

- (a) The fugitive emissions of criteria pollutants, hazardous air pollutants, and greenhouse gases are counted toward the determination of 326 IAC 2-5.5 (Registrations) applicability.

Background and Description of New Source Review

The Office of Air Quality (OAQ) has reviewed an application, submitted by Genesis Products, Inc., on November 1, 2011, to construct and operate three (3) new wood laminators at its existing stationary wood cabinet and door manufacturing plant, to add an existing polymer casting operation located at 2702 Ada Drive, Elkhart, IN 46514 (Plant 5), and to transition from a SSOA to a Registration.

The following is a list of the existing emission units and pollution control devices:

Plant 1

- (a) one (1) Flow Lam wood laminator, identified as FL1, constructed in 2011, for applying decorative laminates to wood using roll application of a urethane adhesive, with a maximum capacity of 600 boards per hour (19200 square feet per hour, 8 pounds per board). Following lamination, the sides of the laminated boards are sanded by two (2) side sanders, with particulate matter emissions controlled by two (2) integral dust collection systems with baghouses, identified as D1 and D2, exhausting indoors.
- (b) one (1) Harlin wood laminator, identified as HL1, constructed in 2011, for applying decorative laminates to wood using roll application of a urethane adhesive, with a maximum capacity of 600 boards per hour (19200 square feet per hour, 8 pounds per board). Following lamination, the sides of the laminated boards are sanded by one (1) side sander, with particulate matter emissions controlled by one (1) integral dust collection system with baghouse, identified as D3, exhausting indoors.
- (c) one (1) hot melt wood laminator, identified as HML, constructed in 2011, for applying decorative laminates to wood using roll application of a urethane adhesive, with a maximum capacity of 60 boards per hour (1920 square feet per hour), exhausting indoors.
- (d) One (1) natural gas-fired building heater, constructed in 2002, with a maximum heat input capacity of 0.175 MMBtu per hour, exhausting indoors.
- (e) Ten (10) natural gas-fired space heaters, constructed in 2002, with a combined maximum heat input capacity of 1.87 MMBtu per hour, exhausting indoors.
- (f) Paved roads and parking lots with public access.

Plant 2

- (g) One (1) woodworking operation, identified as MWW, constructed in 2006, consisting of various woodworking equipment, with a maximum capacity of 9500 pounds of wood per hour, with particulate matter emissions controlled by one (1) integral dust collection system with baghouse, identified as D4, exhausting indoors, including the following units:
- (1) Three (3) edge sanders;
 - (2) Two (2) shapers;
 - (3) One (1) chop saw;
 - (4) Three (3) table routers;
 - (5) Two (2) double-cut miter saws;
 - (6) One (1) panel saw;
 - (7) One (1) CNC machine; and
 - (8) One (1) mill taper.
- (h) one (1) surface coating spray booth, identified as SB, constructed in 2006, equipped with two (2) high-volume low-pressure (HVLP) spray guns for application of coatings to wood, at a maximum coating usage rate of 0.454 gallons of adhesive per hour, coating a maximum of 60 boards per hour (40 square feet per hour), using dry filters for particulate matter overspray control, and exhausting to stack SBV1.
- (i) one (1) roll coating operation, identified as RC, constructed in 2006, for the application of adhesive to wood, with a maximum capacity of 600 boards per hour (400 square feet per hour), and a maximum adhesive usage rate of 4.54 gallons of adhesive per hour, exhausting indoors.
- (j) Eight (8) natural gas-fired space heaters, constructed in 2002, with a combined maximum heat input capacity of 1.142 MMBtu per hour, exhausting indoors.
- (k) Paved roads and parking lots with public access.

Plant 5

- (l) One (1) PCM Mold Preparation and Cleanup Operation, identified as PCMMP, constructed in 2009, consisting hand application of mold release agent on plastic molds prior to use in the Polymer Cast Molding (PCM) Operation at a maximum mold release agent usage rate of 0.045 gallons of mold release agent per hour, with cleanup operations utilizing non-VOC containing solvents, and exhausting indoors.
- (m) One (1) Polymer Cast Molding Operation, identified as PCM1, constructed in 2009, consisting pouring of liquid polyester resin into plastic molds followed by baking and curing into a solid casting, with a maximum resin usage rate of 2.25 gallons per hour and a maximum methyl ethyl ketone peroxide catalyst usage rate of 0.053 gallons per hour. After baking and curing is complete, minor grinding and sanding is done on the plastic product to produce the final product, with particulate matter emissions controlled by one (1) dust collection system with baghouse, identified as D5, exhausting indoors.
- (n) One (1) natural gas-fired building heater, identified as ThermoCycler, constructed in 2009, with a maximum heat input capacity of 1.5 MMBtu per hour, exhausting indoors.
- (o) Ten (10) natural gas-fired space heaters, constructed in 2009, with a combined maximum heat input capacity of 0.85 MMBtu per hour, exhausting indoors.
- (p) Paved roads and parking lots with public access.

“Integral Part of the Process” Determination

In October 1993 a Final Order Granting Summary Judgement was signed by Administrative Law Judge ("ALJ") Garrettson resolving an appeal filed by Kimball Hospitality Furniture (Cause Nos. 92-A-J-730 and 92-A-J-833) 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 are integral to the normal operation of the facility, and therefore, potential emissions should be calculated after controls. Based on this ruling, potential emissions for particulate matter from the wood laminator side sanders and the woodworking operations were calculated after consideration of the controls for purposes of determining permit level. However, for purposes of determining the applicability of Prevention of Significant Deterioration (PSD) and 326 IAC 6-3-2 (Particulate Emission Limitations for Manufacturing Processes), potential particulate matter emissions from the wood laminator side sanders and the woodworking operations were calculated before consideration of the baghouse controls.

Particulate from the wood laminator side sanders and the woodworking operations shall be controlled by their respective baghouses at all times the wood laminator side sanders and the woodworking operation are in operation.

Enforcement Issues

There are no enforcement actions pending.

Emission Calculations

See Appendix A of this TSD for detailed emission calculations.

Permit Level Determination – Registration

The following table reflects the unlimited potential to emit (PTE) of the entire source after integral baghouse controls for the wood laminator side sanders and the woodworking operations. Control equipment is not considered federally enforceable until it has been required in a federally enforceable permit.

Pollutant	Potential To Emit (tons/year)
PM	23.9
PM10 ⁽¹⁾	22.8
PM2.5	22.7
SO ₂	0.01
NO _x	2.38
VOC	15.3
CO	2.00
GHGs as CO ₂ e	2,871
Total HAPs	0.99
Worst Single HAP	0.91 (styrene)

(1) 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) of PM, PM10, and PM2.5 are within the ranges listed in 326 IAC 2-5.5-1(b)(1). The PTE of all other regulated criteria pollutants are less than the ranges listed in 326 IAC 2-5.5-1(b)(1). Therefore, the source is subject to the provisions of 326 IAC 2-5.5 (Registrations). A Registration will be issued.

Note: The baghouse controls for the wood laminator side sanders and the woodworking operations were determined to be integral to the normal operation of these facilities (see "Integral Part of the Process" Determination section above). Therefore, particulate from the wood laminator side sanders and the woodworking operations shall be controlled by their respective baghouses at all times the wood laminator side sanders and the woodworking operation are in operation.

- (b) The potential to emit (PTE) (as defined in 326 IAC 2-1.1-1) 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.
- (c) The potential to emit (PTE) (as defined in 326 IAC 2-1.1-1) greenhouse gases (GHGs) is less than the Title V subject to regulation threshold of one hundred thousand (100,000) tons of CO₂ equivalent emissions (CO₂e) per year. Therefore, the source is 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 (NSPS) for Small Industrial-Commercial-Institutional Steam Generating Units, 40 CFR 60, Subpart Dc (60.40c through 60.48c) (326 IAC 12), are not included in the permit, because each of the natural gas fired heaters at this source is not considered a steam generating unit as defined by 40 CFR 60.41c.
- (b) The requirements of the New Source Performance Standard (NSPS) for Volatile Organic Compound (VOC) Emissions from the Polymer Manufacturing Industry, 40 CFR 60, Subpart DDD (60.560 through 60.566) (326 IAC 12), are not included in the permit, because this source does not manufacture polypropylene, polyethylene, polystyrene, or poly (ethylene terephthalate) as defined in 40 CFR 60.561. The Polymer Cast Molding Operation (PCM1) at this source consists only pouring pre-manufactured liquid polyester resin into plastic molds followed by baking and curing into a solid casting.
- (c) The requirements of the New Source Performance Standard (NSPS) for Flexible Vinyl and Urethane Coating and Printing, 40 CFR 60, Subpart FFF (60.580 through 60.585) (326 IAC 12), are not included in the permit, because this source does not contain any rotogravure printing lines used to print or coat flexible vinyl or urethane products. The wood laminators (FL1, HL1, HML) at this source only apply urethane adhesive to wood.
- (d) There are no New Source Performance Standards (NSPS) (326 IAC 12 and 40 CFR Part 60) included in the permit.

National Emission Standards for Hazardous Air Pollutants (NESHAP)

- (e) The requirements of the National Emission Standards for Hazardous Air Pollutants (NESHAPs) for Halogenated Solvent Cleaning 40 CFR 63, Subpart T (63.460 through 63.470) (326 IAC 20-6), are not included in the permit, because this operation does not use a degreasing solvent that contains any of the halogenated compounds listed in 40 CFR 63.460(a).
- (f) The requirements of the National Emission Standards for Hazardous Air Pollutants (NESHAPs) for Wood Furniture Manufacturing Operations, 40 CFR 63, Subpart JJ (63.800 through 63.808) (326 IAC 20-14), are not included in the permit, since this source is not a major source of HAPs.
- (g) The requirements of the National Emission Standards for Hazardous Air Pollutants (NESHAPs) for Flexible Polyurethane Foam Production 40 CFR 63 Subpart III (63.1290 through 63.1309) (326 IAC 20-22) are not included in the permit, because the source does not produce flexible

- polyurethane or rebond foam, as defined by 63.1292, and this source is not a major source of HAPs, as defined in 40 CFR 63.2. The wood laminators (FL1, HL1, HML) at this source only apply urethane adhesive to wood.
- (h) The requirements of the National Emission Standards for Hazardous Air Pollutants (NESHAPs) for Polyether Polyols Production, 40 CFR 63, Subpart PPP (60.1420 through 60.1439) (326 IAC 20-59), because this source does not manufacture polyether polyol and this source is not a major source of HAPs, as defined in 40 CFR 63.2. The wood laminators (FL1, HL1, HML) at this source only apply urethane adhesive to wood.
 - (i) The requirements of the National Emission Standards for Hazardous Air Pollutants (NESHAPs) for Surface Coating of Miscellaneous Metal Parts and Products, 40 CFR 63, Subpart MMMM (63.3880 through 63.3981) (326 IAC 20-80), are not included in the permit, this source does not perform surface coating of miscellaneous metal parts and products and this source is not a major source of HAPs as defined in 40 CFR 63.2. This source only includes surface coating of wood.
 - (j) The requirements of the National Emission Standards for Hazardous Air Pollutants (NESHAPs) for Surface Coating of Plastic Parts and Products, 40 CFR 63, Subpart PPPP (63.4480 through 63.4581) (326 IAC 20-81), are not included in the permit, because this source does not perform surface coating of plastic parts and products and this source is not a major source of HAPs as defined in 40 CFR 63.2. This source only includes surface coating of wood.
 - (k) The requirements of the National Emission Standards for Hazardous Air Pollutants (NESHAPs) for Surface Coating of Wood Building Products, 40 CFR Part 63, Subpart QQQQ (63.4670 through 63.4781) (326 IAC 20-79), are not included in the permit, because this source is not a major source of HAPs as defined in 40 CFR 63.2.
 - (l) The requirements of the National Emission Standards for Hazardous Air Pollutants (NESHAPs) for Reinforced Plastic Composites Production, 40 CFR 63, Subpart WWWW (63.5780 through 63.5935) (326 IAC 20-56), are not included in the permit for the Polymer Cast Molding Operation (PCM1), because this source is not a major source of HAPs as defined in 40 CFR 63.2.
 - (m) The requirements of the National Emission Standards for Hazardous Air Pollutants (NESHAPs) for Industrial, Commercial, and Institutional Boilers and Process Heaters, 40 CFR 63, Subpart DDDDD (63.7480 through 63.7575) (326 IAC 20-95), are not included in this permit, because this source is not a major source of HAPs as defined in 40 CFR 63.2.
 - (n) The requirements of the National Emission Standards for Hazardous Air Pollutants (NESHAPs) for Flexible Polyurethane Foam Fabrication Operation, 40 CFR 63, Subpart MMMMM (63.8780 through 63.8830) (326 IAC 20-66), are not included in this permit, because this source does not perform fabrication of flexible polyurethane foam as defined by 40 CFR 63.8782 and this source is not a major source of HAPs as defined in 40 CFR 63.2. The wood laminators (FL1, HL1, HML) at this source only apply urethane adhesive to wood.
 - (o) The requirements of the National Emission Standards for Hazardous Air Pollutants (NESHAPs) for Paint Stripping and Miscellaneous Surface Coating Operations, 40 CFR 63, Subpart HHHHHH (63.11169 through 63.11180), are not included in this permit, since this source does not perform paint stripping using chemical strippers that contain methylene chloride in the removal of dried paint, does not perform spray application of coatings to motor vehicles or mobile equipments, and does not perform spray application of coating that contains chromium, lead, manganese, nickel, or cadmium to a plastic and/or metal substrates.
 - (p) The requirements of the National Emission Standards for Hazardous Air Pollutants (NESHAPs) for Industrial, Commercial, and Institutional Boilers Area Sources, 40 CFR 63, Subpart JJJJJJ (63.11193 through 63.11237), are not included in the permit, because the source does not contain boilers (as defined by 40 CFR 63.11237). This source only contains building heaters and space heaters.

- (q) 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)

- (r) 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 2-5.5 (Registrations)
Registration applicability is discussed under the Permit Level Determination – Registration section above.
- (b) 326 IAC 2-2 (Prevention of Significant Deterioration(PSD))
This source is not a major stationary source, under PSD (326 IAC 2-2), because the potential to emit of all attainment regulated criteria pollutants are less than 250 tons per year, the potential to emit greenhouse gases (GHGs) is less than 100,000 tons of CO₂e per year, and this source is not one of the twenty-eight (28) listed source categories, as specified in 326 IAC 2-2-1(gg)(1). Therefore, pursuant to 326 IAC 2-2, the PSD requirements do not apply.

Note: The PM PTE before control, even for the controls considered as integral, is less than 250 tons per year.

- (c) 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.
- (d) 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.
- (e) 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.
- (f) 326 IAC 6-4 (Fugitive Dust Emissions Limitations)
The source is subject to the requirements of 326 IAC 6-4, because the paved roads at this source have the potential to emit fugitive particulate emissions. 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.

- (g) 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.
- (h) 326 IAC 6.5 (PM Limitations Except Lake County)
 This source is not subject to 326 IAC 6.5 because it is not located in Clark, Dearborn, Dubois, Howard, Marion, St. Joseph, Vanderburgh, Vigo or Wayne County and it does not have the potential to emit particulate matter is equal to or greater than 10 tons per year.
- (i) 326 IAC 6.8 (PM Limitations for Lake County)
 This source is not subject to 326 IAC 6.8 because it is not located in Lake County and it does not have the potential to emit particulate matter is equal to or greater than 10 tons per year.
- (j) 326 IAC 12 (New Source Performance Standards)
 See Federal Rule Applicability Section of this TSD.
- (k) 326 IAC 20 (Hazardous Air Pollutants)
 See Federal Rule Applicability Section of this TSD.

Wood Laminator Side Sanders and Woodworking Operation (MWW)

- (l) 326 IAC 6-3-2 (Particulate Emission Limitations for Manufacturing Processes)
 Pursuant to 326 IAC 6-3-1(b), the requirements of 326 IAC 6-3-2 are applicable to each of the wood laminator side sanders and the woodworking operation (MWW), since each of these operations has potential particulate emissions greater than five hundred fifty-one thousandths (0.551) pound per hour. Pursuant to 326 IAC 6-3-2, particulate emissions from each of the following operations shall not exceed the allowable emission rates listed in the following table:

Emission Unit	Control Device	Process Weight Rate (tons/hr)	326 IAC 6-3-2 Allowable Particulate Emission Rate (lbs/hr)	Potential Emissions Before Control (lbs/hr)	Potential Emissions After Control (lbs/hr)	Is a Control Device Needed to Comply with 326 IAC 6-3-2?
Wood Laminator FL1 Side Sander 1 (Plant 1)	Baghouse D1	2.40	7.37	4.29	0.04	No
Wood Laminator FL1 Side Sander 2 (Plant 1)	Baghouse D2	2.40	7.37	6.00	0.06	No
Wood Laminator HL1 Side Sander (Plant 1)	Baghouse D3	0.24	1.58	4.29	0.04	Yes
Woodworking Operation (Plant 2)	Baghouse D4	4.75	11.65	17.14	0.17	Yes

These pounds per hour limitations were 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:

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

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 hourly potential particulate matter emissions before control for the wood laminator FL1 side sanders are less than the 326 IAC 6-3-2 allowable hourly rates. Therefore, wood laminator FL1 side sanders are able to comply with the 326 IAC 6-3 allowable emission rates without the use of baghouse controls.

The hourly potential particulate matter emissions before control for the wood laminator HL1 side sander and the woodworking operation are greater than the 326 IAC 6-3-2 allowable hourly rates. Therefore, the baghouses must be in operation at all times that the wood laminator HL1 side sander and the woodworking operation are in operation in order to ensure compliance with 326 IAC 6-3-2.

Note: The baghouse controls for the wood laminator side sanders and the woodworking operations were determined to be integral to the normal operation of these facilities (see "Integral Part of the Process" Determination section above). Therefore, particulate from the wood laminator side sanders and the woodworking operations shall be controlled by their respective baghouses at all times the wood laminator side sanders and the woodworking operation are in operation.

Polymer Cast Molding Grinding and Sanding

- (m) 326 IAC 6-3-2 (Particulate Emission Limitations for Manufacturing Processes)
 Pursuant to 326 IAC 6-3-1(b), the requirements of 326 IAC 6-3-2 are applicable to the polymer cast molding grinding and sanding, since this operation has potential particulate emissions greater than five hundred fifty-one thousandths (0.551) pound per hour. Pursuant to 326 IAC 6-3-2, particulate emissions from the polymer cast molding grinding and sanding shall not exceed the allowable emission rates listed in the following table:

Emission Unit	Control Device	Process Weight Rate (tons/hr)*	326 IAC 6-3-2 Allowable Particulate Emission Rate (lbs/hr)	Potential Emissions Before Controls (lbs/hr)	Potential Emissions After Controls (lbs/hr)	Is a Control Device Needed to Comply with 326 IAC 6-3-2?
Polymer Cast Molding PCM1 Grinding and Sanding (Plant 5)	Baghouse D1	0.011	0.551	4.29	0.04	Yes
*The Process Weight Rate of 0.011 tons/hr corresponds to the total Maximum Material Usage of 22.13 lbs/hr for the Polymer Cast Molding Operation (PCM1) (see TSD Appendix A, Page 7 of 10)						

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 hourly potential particulate matter emissions before control for polymer cast molding grinding and sanding is greater than the 326 IAC 6-3-2 allowable particulate emission rate. Therefore, the baghouse must be in operation at all times that the polymer cast molding grinding and sanding is in operation in order to ensure compliance with 326 IAC 6-3-2.

Wood Laminators (FL1, HL1, HML), Surface Coating Spray Booth (SB), Roll Coating Operation (RC), PCM Mold Preparation/Cleanup (PCMMP), and Polymer Cast Molding Operation (PCM1)

- (n) 326 IAC 6-3-2 (Particulate Emission Limitations for Manufacturing Processes)
- (1) Pursuant to 326 IAC 6-3-1(b)(6), each of the wood laminators (FL1, HL1, HML) is not subject to the requirements of 326 IAC 6-3, since it utilizes roll coating application of adhesive.
 - (2) Pursuant to 326 IAC 6-3-1(b)(15), the surface coating spray booth (SB) is subject to the requirements of 326 IAC 6-3, since it has the potential to use equal to or greater than five (5) gallons per day of surface coatings.

Pursuant to 326 IAC 6-3-2(d), particulate from the surface coating spray booth (SB) shall be controlled by dry particulate filters, waterwash, or an equivalent control device, and the Registrant 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 Registrant shall inspect the control device and do either of the following no later than four (4) hours after such observation:

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

If overspray is visibly detected, the Registrant 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.

Since the surface coating spray booth (SB) uses dry filters to control particulate overspray, it is able to comply with 326 IAC 6-3-2.

- (3) Pursuant to 326 IAC 6-3-1(b)(6), the roll coating operation (RC) is not subject to the requirements of 326 IAC 6-3, since it utilizes roll coating application of adhesive.
 - (4) Pursuant to 326 IAC 6-3-1(b)(6) and 326 IAC 6-3-1(b)(8), the PCM mold preparation/cleanup (PCMMP) is not subject to the requirements of 326 IAC 6-3, since it utilizes hand application (roll or brush coating) of mold release agent onto molds.
 - (5) Pursuant to 326 IAC 6-3-1(b)(7), polymer cast molding operation (PCM1) is not subject to the requirements of 326 IAC 6-3, since it utilizes pouring (flow coating) of polyester resin into molds.
- (o) 326 IAC 8-1-6 (VOC Rules: General Reduction Requirements for New Facilities)
Each of the wood laminators (FL1, HL1, HML), the surface coating spray booth (SB), the roll coating operation (RC), the PCM mold preparation/cleanup (PCMMP), and the polymer cast molding operation (PCM1) are each not subject to the requirements of 326 IAC 8-1-6, since each has unlimited VOC potential emissions of less than twenty-five (25) tons per year.
- (p) 326 IAC 8-2-9 (Miscellaneous Metal Coating)
Each of the wood laminators (FL1, HL1, HML), the surface coating spray booth (SB), the roll coating operation (RC), the PCM mold preparation/cleanup (PCMMP), and the polymer cast molding operation (PCM1) are each not subject to 326 IAC 8-2-9, because each does not perform

metal coat surface coating of any of the items listed under 326 IAC 8-2-9(a)(1) and this source does not operate any of the Standard Industrial Classification (SIC) Codes listed under 326 IAC 8-2-9(a)(1)(E). This process operates under SIC Code 2434 and consists of the following:

- (1) Each of the wood laminators (FL1, HL1, HML) consist of application of decorative laminates (made of woodgrain, vinyl, or paper) to wood using a urethane adhesive.
- (2) The surface coating spray booth (SB) consists of application of surface coatings to wood cabinet components and wood interior passage door components.
- (3) The roll coating operation (RC) consists of application of adhesives to wood cabinet components and wood interior passage door components.
- (4) The PCM mold preparation/cleanup (PCMMP) consists of application of mold release agent onto molds and cleanup using acetone.
- (5) The polymer cast molding operation (PCM1) consists of pouring of polyester resin into molds.

- (q) 326 IAC 8-2-10 (Flat wood panels; manufacturing operations)
This rule applies to facilities located in Elkhart County, existing as of July 1, 1990, and facilities located in any county, constructed after July 1, 1990, that perform surface finishing of flat wood panels, as defined by 326 IAC 8-2-10(a), and which have actual emissions of greater than fifteen (15) pounds of VOC per day before add-on controls.

The requirements of 326 IAC 8-2-10 are not applicable to each of the operations at this source, since they do not perform surface finishing of flat wood panels, as defined by 326 IAC 8-2-10(a). These processes consist of the following:

- (1) Each of the wood laminators (FL1, HL1, HML) consist of application of decorative laminates (made of woodgrain, vinyl, or paper) to wood using a urethane adhesive. The laminated wood panels manufactured at this site are not one of the flat wood panel types listed under 326 IAC 8-2-10(a).
- (2) The surface coating spray booth (SB) consists of application of surface coatings to wood cabinet components and wood interior passage door components.
- (3) The roll coating operation (RC) consists of application of adhesives to wood cabinet components and wood interior passage door components.
- (4) The PCM mold preparation/cleanup (PCMMP) consists of application of mold release agent onto molds and cleanup using acetone.
- (5) The polymer cast molding operation (PCM1) consists of pouring of polyester resin into molds.

- (r) 326 IAC 8-2-12 (Wood Furniture and Cabinet Coating)
This rule applies to facilities located in Elkhart County, existing as of July 1, 1990, and facilities located in any county, constructed after July 1, 1990, that perform surface coating of wood furniture (or wood furniture components), including cabinets (kitchen, bath, and vanity), tables, beds, chairs, sofas (nonupholstered), art objects, and any other coated furnishings made of solid wood, wood composition, or simulated wood material and which have actual emissions of greater than fifteen (15) pounds of VOC per day before add-on controls.

- (1) Each of the wood laminators (FL1, HL1, HML) is not subject to the requirements of 326 IAC 8-2-12, since it has potential VOC emissions of less than fifteen (15) pounds of VOC per day.

- (2) The surface coating spray booth (SB) is not subject to the requirements of 326 IAC 8-2-12, since it has potential VOC emissions of less than fifteen (15) pounds of VOC per day.
- (3) The roll coating operation (RC) is subject to the requirements of 326 IAC 8-2-12, since it has potential VOC emissions of greater than fifteen (15) pounds of VOC per day.

Pursuant to 326 IAC 8-2-12 (Wood Furniture and Cabinet Coating), for the roll coating operation (RC), the Registrant shall perform surface coating of wood furniture and cabinets, with the exception of no more than ten (10) gallons of coating per day used for touch-up and repair operations, using one (1) or more of the following application systems:

- Airless Spray Application
- Air Assisted Airless Spray Application
- Electrostatic Spray Application
- Electrostatic Bell or Disc Application
- Heated Airless Spray Application
- Roller Coating
- Brush or Wipe Application
- Dip-and-Drain Application

High Volume Low Pressure (HVLP) Spray Application is an accepted alternative method of application for Air Assisted Airless Spray Application. HVLP spray is the technology used to apply coating to substrate by means of coating application equipment which operates between one-tenth (0.1) and ten (10) pounds per square inch gauge (psig) air pressure measured dynamically at the center of the air cap and at the air horns of the spray system.

The roll coating operation (RC) is in compliance with 326 IAC 8-2-12, since it uses roll coating application.

- (4) The PCM mold preparation/cleanup (PCMMP) and the polymer cast molding operation (PCM1) and are each not subject to the requirements of 326 IAC 8-2-12, since they do not perform surface coating of wood furniture (or wood furniture components) and each unit has potential VOC emissions of less than fifteen (15) pounds of VOC per day. These processes consist of application of mold release agent onto molds, pouring of polyester resin into molds, and cleanup using acetone.
- (s) 326 IAC 8-6 (VOC Rules: Organic Solvent Emission Limitations)
Pursuant to 326 IAC 8-6-1, this rule applies to sources commencing operation after October 7, 1974 and prior to January 1, 1980, located anywhere in the state, with potential VOC emissions of 100 tons per year or more, and not regulated by any other provision of Article 8. Pursuant to 326 IAC 8-6-1, this source is not subject to the requirements 326 IAC 8-6, because this source, which is located in Elkhart County, did not commence operation after October 7, 1974 and prior to January 1, 1980, and does not have potential VOC emissions of 100 tons per year or more.
- (t) 326 IAC 8-7 (VOC Rules: Specific VOC Reduction Requirements for Lake, Porter, Clark, and Floyd Counties)
Pursuant to 326 IAC 8-7-2(a), this source is not subject to the requirements of 326 IAC 8-7, since it is not located in Lake, Porter, Clark, or Floyd County.
- (u) 326 IAC 8-11-3 (VOC Rules: Wood Furniture Coatings)
The requirements of 326 IAC 8-11-3 are not applicable to this source, since this source is not located in Lake, Porter, Clark, or Floyd County.

- (v) 326 IAC 8-14 (VOC Rules: Architectural and Industrial Maintenance (AIM) Coatings)
Pursuant to 326 IAC 8-14, this source is not subject to the requirements of 326 IAC 8-14, because this source does not apply any architectural coating or industrial maintenance coating as defined by 326 IAC 8-14-2.
- (w) 326 IAC 8-15 (VOC Rules: Standards for Consumer and Commercial Products)
Pursuant to 326 IAC 8-15, this source is not subject to the requirements of 326 IAC 8-15, because this source does not manufacture any chemically formulated consumer products listed under any of the product categories in 326 IAC 8-15-3(a).
- (x) 326 IAC 8-17 (VOC Rules: Industrial Solvent Cleaning Operations)
Pursuant to 326 IAC 8-17-1, this source is not subject to the requirements of 326 IAC 8-17, since it is not located in Lake or Porter County, and it does not have the potential to emit VOC equal to or greater than 3 tons per rolling 12 month period from solvent cleaning operations.
- (y) 326 IAC 8-19 (VOC Rules: Control of Volatile Organic Compound Emissions from Process Vents in Batch Operations)
Pursuant to 326 IAC 8-19-1, this source is not subject to the requirements of 326 IAC 8-18, since it is not located in Lake or Porter County, it does not have the potential to emit VOC greater than or equal to one hundred (100) tons per year, and it does not have a batch process train associated with any of the SIC Codes listed under 326 IAC 8-19-1(a).
- (z) 326 IAC 8-20 (VOC Rules: Industrial Wastewater)
Pursuant to 326 IAC 8-20-1, this source is not subject to the requirements of 326 IAC 8-20, since it is not located in Lake or Porter County, it does not have the potential to emit VOC greater than or equal to one hundred (100) tons per year from emission sources listed under 326 IAC 8-20-1(a)(2), and it does not facility operations specifically listed under any of the SIC Codes listed under 326 IAC 8-20-1(a)(3).
- (aa) 326 IAC 8-22 (VOC Rules: Miscellaneous Industrial Adhesives)
Pursuant to 326 IAC 8-22-1, the application of adhesive at this source is not subject to the requirements of 326 IAC 8-22, since it is not located in Lake or Porter County.
- (bb) There are no other 326 IAC 8 Rules that are applicable to each of the wood laminators (FL1, HL1, HML), the surface coating spray booth (SB), the roll coating operation (RC), the PCM mold preparation/cleanup (PCMMP), and the polymer cast molding operation (PCM1) at this source.

Natural Gas-Fired Heaters

- (cc) 326 IAC 6-2 (Particulate Emissions from Indirect Heating Units)
The natural gas-fired building heaters and space heaters are each not subject to 326 IAC 6-2 as they are not sources of indirect heating.
- (dd) 326 IAC 6-3 (Particulate Emission Limitations for Manufacturing Processes)
The natural gas-fired building heaters and space heaters are each not subject to the requirements of 326 IAC 6-3, since they each are not a "manufacturing process" as defined by 326 IAC 6-3-1.5.
- (ee) 326 IAC 7-1.1 (Sulfur Dioxide Emission Limitations)
Pursuant to 326 IAC 7-1.1-1, the natural gas-fired building heaters and space heaters are each not subject to the requirements of 326 IAC 7-1, since each has unlimited sulfur dioxide (SO₂) emissions less than twenty-five (25) tons per year and ten (10) pounds per hour respectively.
- (ff) 326 IAC 8-1-6 (VOC Rules: General Reduction Requirements for New Facilities)
Each of the natural gas-fired building heaters and space heaters is not subject to the requirements of 326 IAC 8-1-6, since each has unlimited VOC potential emissions of less than twenty-five (25) tons per year.

Compliance Determination, Monitoring and Testing Requirements

- (a) The compliance determination and monitoring requirements applicable to this source are as follows.

Emission Unit	Control Device	Monitoring	Frequency
Wood Laminator FL1 Side Sander 1 (Plant 1)	Baghouse D1	Bag Inspections	Semi-Annual
Wood Laminator FL1 Side Sander 2 (Plant 1)	Baghouse D2	Bag Inspections	Semi-Annual
Wood Laminator HL1 Side Sander (Plant 1)	Baghouse D3	Bag Inspections	Semi-Annual
Woodworking Operation (Plant 2)	Baghouse D4	Bag Inspections	Semi-Annual
Polymer Cast Molding PCM1 Grinding and Sanding (Plant 5)	Baghouse D5	Bag Inspections	Semi-Annual

These monitoring conditions are necessary, because the baghouses must operate properly to ensure compliance with 326 IAC 6-3-2 and to ensure compliance with 326 IAC 2-5.5 (Registrations).

- (b) There are no testing requirements applicable to this source.

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 November 1, 2011. Additional information was submitted on January 3, 2012, January 5, 2012, January 6, 2012, and January 18, 2012.

The construction and operation of this source shall be subject to the conditions of the attached proposed Registration No. R039-31086-00656. The staff recommends to the Commissioner that this Registration be approved.

IDEM Contact

- (a) Questions regarding this proposed permit can be directed to Nathan Bell 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) 233-5670 or toll free at 1-800-451-6027 extension 35670.
- (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

**TSD Appendix A: Emission Calculations
Emissions Summary**

Company Name: Genesis Products, Inc.
Source Address: 2608 Almac Court, Elkhart, IN 46514 (Plant 1 and 2)
 2702 Ada Drive, Elkhart, IN 46514 (Plant 5)
Registration No.: R039-31086-00656
Reviewer: Nathan C. Bell

Unlimited Potential to Emit (PTE) (tons/year) Before Integral Controls*											
Emission Unit/Activity	PM	PM10	PM2.5	SO2	NOx	VOC	CO	GHGs as CO2e	Total HAPs	Worst Single HAP	
Wood Laminators (FL1, HL1, HML)	0.0	0.0	0.0	0.0	0.0	4.6E-04	0.0	0.0	4.6E-04	4.6E-04	MDI
Wood Laminator Side Sanders and Woodworking Operation (MWW)*	138.9	138.9	138.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	---
Surface Coating Spray Booth (SB)	1.40	1.40	1.40	0.0	0.0	1.86	0.0	0.0	0.0	0.0	---
Roll Coating Operation (RC)	0.0	0.0	0.0	0.0	0.0	10.85	0.0	0.0	0.0	0.0	---
PCM Mold Preparation and Cleanup Operation (PCMMP)	0.0	0.0	0.0	0.0	0.0	1.24	0.0	0.0	0.0	0.0	---
Polymer Cast Molding Operation (PCM1)	0.0	0.0	0.0	0.0	0.0	1.26	0.0	0.0	0.94	0.91	styrene
Polymer Cast Molding (PCM1) Grinding and Sanding	19.7	19.7	19.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	---
Natural Gas-Fired Heaters	0.05	0.04	0.18	0.014	2.38	0.13	2.00	2871	0.04	0.04	hexane
Paved Roads (fugitive)	1.4	0.28	0.07	0.0	0.0	0.0	0.0	0.0	0.0	0.0	---
Totals	161.4	160.3	160.3	0.01	2.38	15.3	2.00	2871	0.99	0.91	styrene

Unlimited Potential to Emit (PTE) (tons/year) After Integral Controls*											
Emission Unit/Activity	PM	PM10	PM2.5	SO2	NOx	VOC	CO	GHGs as CO2e	Total HAPs	Worst Single HAP	
Wood Laminators (FL1, HL1, HML)	0.0	0.0	0.0	0.0	0.0	4.6E-04	0.0	0.0	4.6E-04	4.6E-04	MDI
Wood Laminator Side Sanders and Woodworking Operation (MWW)*	1.39	1.39	1.39	0.0	0.0	0.0	0.0	0.0	0.0	0.0	---
Surface Coating Spray Booth (SB)	1.40	1.40	1.40	0.0	0.0	1.86	0.0	0.0	0.0	0.0	---
Roll Coating Operation (RC)	0.0	0.0	0.0	0.0	0.0	10.85	0.0	0.0	0.0	0.0	---
PCM Mold Preparation and Cleanup Operation (PCMMP)	0.0	0.0	0.0	0.0	0.0	1.24	0.0	0.0	0.0	0.0	---
Polymer Cast Molding Operation (PCM1)	0.0	0.0	0.0	0.0	0.0	1.26	0.0	0.0	0.94	0.91	styrene
Polymer Cast Molding (PCM1) Grinding and Sanding	19.7	19.7	19.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	---
Natural Gas-Fired Heaters	0.05	0.04	0.18	0.014	2.38	0.13	2.00	2871	0.04	0.04	hexane
Paved Roads (fugitive)	1.4	0.28	0.07	0.0	0.0	0.0	0.0	0.0	0.0	0.0	---
Totals	23.9	22.8	22.7	0.01	2.38	15.3	2.00	2871	0.99	0.91	styrene

*In October 1993 a Final Order Granting Summary Judgement was signed by Administrative Law Judge ("ALJ") Garretson resolving an appeal filed by Kimball Hospitality Furniture (Cause Nos. 92-A-J-730 and 92-A-J-833) 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 are integral to the normal operation of the facility, and therefore, potential emissions should be calculated after controls. Based on this ruling, potential emissions for particulate matter from the wood laminator side sanders and the woodworking operations were calculated after consideration of the controls for purposes of determining permit level. However, for purposes of determining the applicability of Prevention of Significant Deterioration (PSD) and 326 IAC 6-3-2 (Particulate Emission Limitations for Manufacturing Processes), potential particulate matter emissions from the wood laminator side sanders and the woodworking operations were calculated before consideration of the baghouse controls.

TSD Appendix A: Emission Calculations
Wood Laminators (FL1, HL1, HML)
Volatile Organic Compounds (VOC) and Hazardous Air Pollutants (HAPs)

Company Name: Genesis Products, Inc.
Source Address: 2608 Almac Court, Elkhart, IN 46514 (Plant 1 and 2)
 2702 Ada Drive, Elkhart, IN 46514 (Plant 5)
Registration No.: R039-31086-00656
Reviewer: Nathan C. Bell

During the application of urethane adhesives, component A (isocyanate) and component B (polyols) are mixed together and the components react quickly (in approximately 5 seconds) to form urethane with minimal emission of methylene diphenyl diisocyanate (MDI) (VOC/HAP). As a worst case scenario, the potential to emit VOC/HAP was estimated assuming that each organic compound is spilled and allowed to evaporate at the maximum evaporation rate for one (1) minute before reacting, with surface area equal to the surface area coated each minute.

Potential to Emit Volatile Organic Compounds (VOC) and Hazardous Air Pollutants (HAPs)

Guidance Document: Risk Management Program Guidance for Offsite Consequence Analysis, EPA 550-B-99-009, April 1999, Appendix D, Section D.2.1, Equation D-1

Equation D-1*: $QR = 0.284 * U^{0.78} * MW^{2/3} * A * VP_{mdi} / (82.05 * T_{proc})$

where: QR = Evaporation Rate (lbs/minute)
 U = Wind Speed (m/s) in the vicinity of the process
 MW = Molecular Weight (g/mol) of organic compound
 A = Exposed Surface Area (ft²)
 VP = Vapor Pressure (mmHg) of organic compound at 25oC (or 77oF)
 T_{proc} = Process Temperature (Kelvin)
 82.05 = Universal Gas Constant (atm cm³/gmol K)

Exposed Surface Area

Operation	Surface Coating Material	Maximum Capacity (units/hour)**	Maximum Surface Area per unit (ft ² /unit)**	Maximum Surface Area Coated (ft ² /hour)	Maximum Surface Area Coated (ft ² /minute)
Wood Laminator (FL1)	Urethane Adhesive	600	32	19200	320.0
Wood Laminator (HL1)	Urethane Adhesive	600	32	19200	320.0
Wood Laminator (HML)	Urethane Adhesive	60	32	1920	32.0

Potential to Emit (PTE) of VOC and HAP

Operation	Surface Coating Material	Organic Compound	U** (m/s)	MW (g/mol)	A (ft ² /minute)	VP (mmHg)	Process Temperature (oF)**	T _{proc} ** (Kelvin)	QR (lb/minute)	QR (lb/hour)	PTE of VOC/HAP (lbs/day)	PTE of VOC/HAP (tons/year)
Wood Laminator (FL1)	Urethane Adhesive	methylene diphenyl diisocyanate (MDI)	0.508	250.26	320.0	1.0E-05	110.0	316.48	8.4E-07	5.0E-05	1.2E-03	2.2E-04
Wood Laminator (HL1)	Urethane Adhesive	methylene diphenyl diisocyanate (MDI)	0.508	250.26	320.0	1.0E-05	110.0	316.48	8.4E-07	5.0E-05	1.2E-03	2.2E-04
Wood Laminator (HML)	Urethane Adhesive	methylene diphenyl diisocyanate (MDI)	0.508	250.26	32.0	1.0E-05	110.0	316.48	8.4E-08	5.0E-06	1.2E-04	2.2E-05
Potential to Emit VOC/HAP =									1.8E-06	1.1E-04	2.5E-03	4.6E-04

Methodology

*Evaporation Rate (QR) equation from EPA Guidance Document entitled "Risk Management Program Guidance for Offsite Consequence Analysis", EPA 550-B-99-009, April 1999, Appendix D, Section D.:

Chapters 1-12: <http://www.epa.gov/emergencies/docs/chem/oca-chps.pdf>

Appendices: <http://www.epa.gov/emergencies/docs/chem/oca-apds.pdf>

**Information provided by source

Methylene diphenyl diisocyanate (MDI) is a VOC and a HAF

Maximum Surface Area Coated (ft²/hour) = [Maximum Capacity (units/hour)] * [Maximum Surface Area per unit (ft²/unit)]

Maximum Surface Area Coated (ft²/minute) = [Maximum Surface Area Coated (ft²/hour)] * [hour/60 minutes]

T_{proc} (Kelvin) = [Process Temperature (oF) - 32oF] * (5/9) + 273.15K

Evaporation Rate (QR) (lb/minute) = $0.284 * U^{0.78} * MW^{2/3} * A * VP_{mdi} / (82.05 * T_{proc})$

Evaporation Rate (QR) (lb/hour) = [Evaporation Rate (QR) (lb/minute)] * [60 minutes/hour]

PTE of VOC/HAP (lbs/day) = [Evaporation Rate (QR) (lbs/hour)] * [24 hours/day]

PTE of VOC/HAP (tons/year) = [Evaporation Rate (QR) (lbs/hour)] * [8760 hours/year] * [ton/2000 lbs]

Note: Each of the wood laminators (FL1, HL1, HML) do not emit particulate, since each utilizes roll coating application of adhesive with 100% transfer efficiency

**TSD Appendix A: Emission Calculations
Wood Laminator Side Sanders (for FL1 and HL1) and
Woodworking Operation (MWW)**

Company Name: Genesis Products, Inc.
Source Address: 2608 Almac Court, Elkhart, IN 46514 (Plant 1 and 2)
 2702 Ada Drive, Elkhart, IN 46514 (Plant 5)
Registration No.: R039-31086-00656
Reviewer: Nathan C. Bell

Potential to Emit (PTE) of PM/PM10/PM2.5

Process	Baghouse ID	Pollutants	Design Outlet Grain Loading (grains/acfm)	Flowrate (acfm)	Control Efficiency (%)	Controlled PTE (lb/hr)	Controlled PTE (ton/yr)	Uncontrolled PTE (lb/hr)	Uncontrolled PTE (ton/yr)
Wood Laminator FL1 Side Sander 1 (Plant 1)	D1	PM/PM10/PM2.5	0.001	5,000	99.0%	0.04	0.19	4.29	18.77
Wood Laminator FL1 Side Sander 2 (Plant 1)	D2	PM/PM10/PM2.5	0.001	7,000	99.0%	0.06	0.26	6.00	26.28
Wood Laminator HL1 Side Sander (Plant 1)	D3	PM/PM10/PM2.5	0.001	5,000	99.0%	0.04	0.19	4.29	18.77
Woodworking Operation (Plant 2)	D4	PM/PM10/PM2.5	0.001	20,000	99.0%	0.17	0.75	17.14	75.09
Totals						0.32	1.39	31.71	138.91

Methodology

Controlled PTE (lb/hr) = [Design Outlet Grain Loading (grains/acfm)] * [Flowrate (acfm)] * [60 min/hr] * [lb/7000 grains]
 Controlled PTE (tpy) = [Controlled PTE (lb/hr)] * [8,760 hours/year] * [ton/2000 lb]
 Uncontrolled PTE (lb/hr) = [Controlled PTE (lb/hr)] / [1 - Control Efficiency %]
 Uncontrolled PTE (tpy) = [Uncontrolled PTE (lb/hr)] * [8,760 hours/year] * [ton/2000 lb]

In October 1993 a Final Order Granting Summary Judgement was signed by Administrative Law Judge ("ALJ") Garrettson resolving an appeal filed by Kimball Hospitality Furniture (Cause Nos. 92-A-J-730 and 92-A-J-833) 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 are integral to the normal operation of the facility, and therefore, potential emissions should be calculated after controls. Based on this ruling, potential emissions for particulate matter from the wood laminator side sanders and the woodworking operations were calculated after consideration of the controls for purposes of determining permit level. However, for purposes of determining the applicability of Prevention of Significant Deterioration (PSD) and 326 IAC 6-3-2 (Particulate Emission Limitations for Manufacturing Processes), potential particulate matter emissions from the wood laminator side sanders and the woodworking operations were calculated before consideration of the baghouse controls.

326 IAC 6-3-2 Allowable PM Emission Rate

Process	Baghouse ID	Weight of Boards Processed (lbs/board)*	Maximum Production Rate (boards/hr)*	Process Weight Rate (lbs/hr)*	Process Weight Rate (tons/hr)	326 IAC 6-3-2 Allowable PM Emission Rate (lbs/hr)	Uncontrolled PTE of PM (lb/hr)	Controlled PTE of PM (lb/hr)
Wood Laminator FL1 Side Sander 1 (Plant 1)	D1	8.0	600	4800	2.40	7.37	4.29	0.04
Wood Laminator FL1 Side Sander 2 (Plant 1)	D2	8.0	600	4800	2.40	7.37	6.00	0.06
Wood Laminator HL1 Side Sander (Plant 1)	D3	8.0	60	480	0.24	1.58	4.29	0.04
Woodworking Operation (Plant 2)	D4	---	---	9500	4.75	11.65	17.14	0.17

The baghouses must be in operation at all times that the wood laminators and the woodworking operation are in operation in order to ensure compliance with 326 IAC 6-3-2

Methodology

*Based on information provided by the source.
 Process Weight Rate (lbs/hr) = [Weight of Boards Processed (lbs/board)] * [Maximum Production Rate (boards/hr)]
 Process Weight Rate (tons/hr) = [Process Weight Rate (lbs/hr)] * [ton/2000 lbs]
 326 IAC 6-3-2 Allowable PM Emission Rate = 4.10 * [Process Weight Rate (tons/hr)]^{0.67}

**TSD Appendix A: Emission Calculations
VOCs, Particulate, HAPs
Surface Coating Spray Booth (SB)**

Company Name: Genesis Products, Inc.
Source Address: 2608 Almac Court, Elkhart, IN 46514 (Plant 1 and 2)
 2702 Ada Drive, Elkhart, IN 46514 (Plant 5)
Registration No.: R039-31086-00656
Reviewer: Nathan C. Bell

Potential to Emit (PTE) of Volatile Organic Compounds (VOC) and PM/PM10/PM2.5

Operation and Material	Primary Type of Surface Coated	Density (lb/gal)	Weight % Volatile (H2O & Organics)	Weight % Water + Non-VOCs	Weight % Solids	Weight % VOCs	Volume % Water + Non-VOCs	Volume % Solids	Usage (gal/unit)	Maximum Capacity (unit/hr)	Maximum Usage (gal/hour)	Maximum Usage (gal/day)	Maximum Usage (lb/hr)	per gallon of coating less water and non-VOCs	Pounds VOC per gallon of coating	PTE of VOC (lb/hr)	PTE of VOC (lb/day)	PTE of VOC (tons/yr)	PTE of PM/PM10/PM2.5 (lb/hr)	PTE of PM/PM10/PM2.5 (tons/yr)	lb VOC per gal solids	Transfer Efficiency
Black Top Coat	Wood	8.52	67.0%	56.0%	33.0%	11.0%	59.50%	29.0%	0.00757	60.0	0.454	10.90	3.87	2.31	0.94	0.43	10.22	1.86	0.32	1.40	3.23	75%
Acetone (clean up)*	Wood	6.59	100.0%	100.0%	0.0%	0.0%	100.00%	0.0%	2.0E-05	60.0	0.0012	0.03	0.01	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	100%

Total Uncontrolled Potential to Emit (PTE) =															0.43	10.2	1.86	0.32	1.40
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Dry Filter Control Efficiency =		90.0%
Total Controlled Potential to Emit (PTE) (tons/yr) =		0.14

Methodology

*Acetone is not a volatile organic compound (VOC) as defined by 40 CFR 51 Subpart F, Section 51.100.
 Maximum Usage (gal/hour) = [Usage (gal/unit)] * [Maximum Capacity (units/hour)]
 Maximum Usage (gal/day) = [Maximum Usage (gal/hour)] * [24 hours/day]
 Maximum Usage (lbs/hr) = [Maximum Usage (gal/hour)] * [Density (lb/gal)]
 Pounds of VOC per Gallon Coating less Water and non-VOCs = [Density (lb/gal)] * [Weight % VOCs] / [1 - (Volume % water and non-VOCs)]
 Pounds of VOC per Gallon Coating = [Density (lb/gal)] * [Weight % VOCs]
 PTE of VOC (lbs/hr) = [Maximum Usage (lbs/hr)] * [Weight % VOCs]
 PTE of VOC (lbs/day) = [PTE of VOC (lbs/hr)] * [24 hours/day]
 PTE of VOC (tons/yr) = [PTE of VOC (lbs/day)] * [(365 days/yr)] * [1 ton/2000 lbs]
 PTE of PM/PM10 (tons/yr) = [Density (lbs/gal)] * [Maximum Usage (gal/day)] * [(Weight % Solids)] * [1 - Transfer efficiency)] * [365 days/yr] * [1 ton/2000 lbs]
 Pounds VOC per Gallon of Solids = [Density (lbs/gal)] * [Weight % VOCs] / [Volume % solids]
 Controlled PTE = [Uncontrolled PTE] * [1 - Control Efficiency]

Potential to Emit (PTE) of Hazardous Air Pollutants (HAPs)

Operation and Material	PTE of VOC	Weight % HAP*	PTE of HAP (tons/yr)
Black Top Coat	1.86	0.0%	0.0
Acetone (clean up)*	0.0	0.0%	0.0
TOTAL (tons/year)			0.0

Methodology

*Acetone is not a hazardous air pollutant (HAP) as defined by Section 112(b)(1) of the Clean Air Act.
 PTE of HAP (tons/yr) = [PTE of VOC (tons/yr)] * [Weight % HAP]

**TSD Appendix A: Emission Calculations
VOCs, Particulate, HAPs
Roll Coating Operation (RC)**

Company Name: Genesis Products, Inc.
Source Address: 2608 Almac Court, Elkhart, IN 46514 (Plant 1 and 2)
 2702 Ada Drive, Elkhart, IN 46514 (Plant 5)
Registration No.: R039-31086-00656
Reviewer: Nathan C. Bell

Potential to Emit (PTE) of Volatile Organic Compounds (VOC) and PM/PM10/PM2.5

Operation and Material	Primary Type of Surface Coated	Density (lb/gal)	Weight % Volatile (H2O & Organics)	Weight % Water + Non-VOCs	Weight % Solids	Weight % VOCs	Volume % Water + Non-VOCs	Volume % Solids	Usage (gal/unit)	Maximum Capacity (unit/hr)	Maximum Usage (gal/hour)	Maximum Usage (gal/day)	Maximum Usage (lb/hr)	per gallon of coating less water and non-VOCs	Pounds VOC per gallon of coating	PTE of VOC (lb/hr)	PTE of VOC (lb/day)	PTE of VOC (tons/yr)	PTE of PM/PM10/PM2.5 (lb/hr)	PTE of PM/PM10/PM2.5 (tons/yr)	lb VOC per gal solids	Transfer Efficiency
Adhesive (SWIFT)	Wood	9.09	41.0%	35.0%	59.0%	6.0%	38.50%	53.1%	0.00757	600.0	4.54	109.01	41.29	0.89	0.55	2.48	59.5	10.85	0.0	0.0	1.03	100%

Total Uncontrolled Potential to Emit (PTE) =																2.48	59.5	10.85	0.0	0.0
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Methodology

Maximum Usage (gal/hour) = [Usage (gal/unit)] * [Maximum Capacity (units/hour)]
 Maximum Usage (gal/day) = [Maximum Usage (gal/hour)] * [24 hours/day]
 Maximum Usage (lbs/hr) = [Maximum Usage (gal/hour)] * [Density (lb/gal)]
 Pounds of VOC per Gallon Coating less Water and non-VOCs = [Density (lb/gal)] * [Weight % VOCs] / [1 - (Volume % water and non-VOCs)]
 Pounds of VOC per Gallon Coating = [Density (lb/gal)] * [Weight % VOCs]
 PTE of VOC (lbs/hr) = [Maximum Usage (lbs/hr)] * [Weight % VOCs]
 PTE of VOC (lbs/day) = [PTE of VOC (lbs/hr)] * [24 hours/day]
 PTE of VOC (tons/yr) = [PTE of VOC (lbs/day)] * [(365 days/yr)] * [1 ton/2000 lbs]
 PTE of PM/PM10 (tons/yr) = [Density (lbs/gal)] * [Maximum Usage (gal/day)] * [(Weight % Solids)] * [1 - Transfer efficiency]] * [365 days/yr] * [1 ton/2000 lbs]
 Pounds VOC per Gallon of Solids = [Density (lbs/gal)] * [Weight % VOCs] / [Volume % solids]

Potential to Emit (PTE) of Hazardous Air Pollutants (HAPs)

Operation and Material	PTE of VOC	Weight % HAP*	PTE of HAP (tons/yr)
Adhesive (SWIFT)	10.85	0.0%	0.0
TOTAL (tons/year)			0.0

Methodology

PTE of HAP (tons/yr) = [PTE of VOC (tons/yr)] * [Weight % HAP]

TSD Appendix A: Emission Calculations
VOCs, Particulate, HAPs
PCM Mold Preparation and Cleanup Operation (PCMMP)

Company Name: Genesis Products, Inc.
Source Address: 2608 Almac Court, Elkhart, IN 46514 (Plant 1 and 2)
 2702 Ada Drive, Elkhart, IN 46514 (Plant 5)
Registration No.: R039-31086-00656
Reviewer: Nathan C. Bell

Potential to Emit (PTE) of Volatile Organic Comounds (VOC) and PM/PM10/PM2.5

Operation and Material	Density (lb/gal)	Weight % Volatile (H2O & Organics)	Weight % Water + Non-VOCs	Weight % Solids	Weight % VOCs	Volume % Water + Non-VOCs	Volume % Solids	Usage (gal/unit)	Maximum Capacity (unit/hr)	Maximum Usage (gal/hour)	Maximum Usage (gal/day)	Maximum Usage (lb/hr)	per gallon of coating less water and non-VOCs	Pounds VOC per gallon of coating	PTE of VOC (lb/hr)	PTE of VOC (lb/day)	PTE of VOC (tons/yr)	PTE of PM/PM10/PM2.5 (lb/hr)	PTE of PM/PM10/PM2.5 (tons/yr)	lb VOC per gal solids	Transfer Efficiency**
Freekote 700-NC Release Agent	6.34	99.0%	0.0%	1.0%	99.0%	0.0%	0.9%	0.03	1.50	0.045	1.08	0.29	6.28	6.28	0.28	6.78	1.24	0.00	0.00	697.22	100%
Acetone (clean up)*	6.59	100.0%	100.0%	0.0%	0.0%	100.00%	0.0%	0.50	1.50	0.75	18.0	4.94	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	100%

Total Uncontrolled Potential to Emit (PTE) =															0.28	6.78	1.24	0.00	0.00
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Methodology

*Acetone acetone is not a volatile organic compound (VOC) as defined by 40 CFR 51 Subpart F, Section 51.100.

**Transfer Efficiency is 100% for Hand Applied Materials.

Maximum Usage (gal/hour) = [Usage (gal/unit)] * [Maximum Capacity (units/hour)]

Maximum Usage (gal/day) = [Maximum Usage (gal/hour)] * [24 hours/day]

Maximum Usage (lbs/hr) = [Maximum Usage (gal/hour)] * [Density (lb/gal)]

Pounds of VOC per Gallon Coating less Water and non-VOCs = [Density (lb/gal)] * [Weight % VOCs] / [1 - (Volume % water and non-VOCs)]

Pounds of VOC per Gallon Coating = [Density (lb/gal)] * [Weight % VOCs]

PTE of VOC (lbs/hr) = [Maximum Usage (lbs/hr)] * [Weight % VOCs]

PTE of VOC (lbs/day) = [PTE of VOC (lbs/hr)] * [24 hours/day]

PTE of VOC (tons/yr) = [PTE of VOC (lbs/day)] * [(365 days/yr)] * [1 ton/2000 lbs]

PTE of PM/PM10 (tons/yr) = [Density (lbs/gal)] * [Maximum Usage (gal/day)] * [(Weight % Solids)] * [1 - Transfer efficiency]] * [365 days/yr] * [1 ton/2000 lbs]

Pounds VOC per Gallon of Solids = [Density (lbs/gal)] * [Weight % VOCs] / [Volume % solids]

Potential to Emit (PTE) of Hazardous Air Pollutants (HAPs)

Operation and Material	PTE of VOC (tons/yr)	Weight % HAP*	PTE of HAP (tons/yr)
Freekote 700-NC Release Agent	1.24	0.0%	0.0
Acetone (clean up)*	0.00	0.0%	0.0
TOTAL (tons/year)			0.0

Methodology

*Acetone acetone is not a hazardous air pollutant (HAP) as defined by Section 112(b)(1) of the Clean Air Act.

PTE of HAP (tons/yr) = [PTE of VOC (tons/yr)] * [Weight % HAP]

TSD Appendix A: Emission Calculations
VOCs, Particulate, HAPs
Polymer Cast Molding Operation (PCM1)

Company Name: Genesis Products, Inc.
Source Address: 2608 Almac Court, Elkhart, IN 46514 (Plant 1 and 2)
 2702 Ada Drive, Elkhart, IN 46514 (Plant 5)
Registration No.: R039-31086-00656
Reviewer: Nathan C. Bell

Potential to Emit (PTE) of Volatile Organic Compounds (VOC) and PM/PM10/PM2.5

Unit	Application Method ¹	Material ¹	Density (lbs/gal)	Maximum Production Rate (unit/hr)	Maximum Material Usage (gal/unit)	Maximum Material Usage (gal/hr)	Maximum Material Usage (lbs/hr)	VOC Emission Factor (weight % of starting monomer emitted) ²	VOC Content of Material (% by weight) ¹	VOC Emission Factor (lbs/ton)	PTE of VOC (lbs/hour)	PTE of VOC (lbs/day)	PTE of VOC (ton/yr)	PTE of PM/PM10/PM2.5 Before Controls (lbs/hr) ³	PTE of PM/PM10/PM2.5 Before Controls (tons/yr) ³	Transfer Efficiency ⁴
PCM1	Polymer Cast Molding	Polyester Resin	9.62	1.50	1.50	2.25	21.65	3.0%	42.00%	25.20	0.27	6.55	1.19	0.0	0.0	100%
PCM1	Polymer Cast Molding	Methyl Ethyl Ketone Peroxide (MEKP) catalyst	9.26	1.50	0.04	0.053	0.49	3.0%	100.0%	60.00	0.015	0.35	0.06	0.0	0.0	100%
Totals							2.30	22.13			0.29	6.90	1.26	0.0		

Potential to Emit (PTE) of Hazardous Air Pollutants (HAPs)

Unit	Application Method ¹	Material ¹	Density (lbs/gal)	Maximum Production Rate (unit/hr)	Maximum Material Usage (gal/unit)	Maximum Material Usage (gal/hr)	Maximum Material Usage (lbs/hr)	HAP Emission Factor (weight % of starting monomer emitted) ²	Styrene Content of Material (% by weight) ¹	Styrene Emission Factor (lbs/ton)	PTE of Styrene (tons/yr)	DMP Content of Material (% by weight) ⁵	DMP Emission Factor (lbs/ton)	PTE of DMP (tons/yr)	Total HAPs (tons/yr)
PCM1	Polymer Cast Molding	Polyester Resin	9.62	1.50	1.50	2.25	21.65	3.0%	32.00%	19.20	0.91	0.00%	0.00	0.00	0.91
PCM1	Polymer Cast Molding	Methyl Ethyl Ketone Peroxide (MEKP) catalyst	9.26	1.50	0.04	0.053	0.49	3.0%	0.0%	0.0	0.0	49.00%	29.40	0.03	0.03
Totals											0.91	0.03	0.94		

Notes:

- This operation consists of pouring polyester resin into molds and baking into a solid casting. The polyester resin contains styrene (32% by weight), alpha-methylstyrene (1 to 5%), and ethenylmethyl benzene (1 to 5%). As a worst case assumption, the polyester resin is assumed to have a VOC content of 42% by weight. For this operation, the liquid polyester resin is mixed with the MEKP catalyst to initiate polymerization into solid thermoset plastic products.
- The VOC emission factor is from AP-42 Chapter 4.4, Polyester Resin Plastic Products Fabrication, Table 4.4-2 (Marble Casting). For these calculations, it is assumed that the VOC emission factor is the sum of styrene, alpha-methylstyrene, and ethenylmethyl benzene emissions.
- Assume PM, PM10, and PM2.5 emissions are equal.
- The transfer efficiency is based upon material pouring.
- The chemical dimethyl phthalate (DMP) is a plasticizer used as a stabilizing carrier solvent in methyl ethyl ketone peroxide and reacts to become a part of the plastic product. The vapor pressure of DMP is far less than styrene which is additionally reactive. Therefore, DMP potential emissions are calculated in the same manner as styrene (3.0% of monomer emitted) to assess the worst case scenario.

Methodology

Maximum Material Usage (gal/hr) = [Maximum Material Usage (gal/unit)] * [Maximum Production Rate (unit/hr)]
 Maximum Material Usage (lbs/hr) = [Density (lbs/gal)] * [Maximum Material Usage (gal/unit)] * [Maximum Production Rate (unit/hr)]
 VOC Emission Factor (lbs/ton) = [VOC Content of Material (% by weight)] * [VOC Emission Factor (weight % of starting monomer emitted)]
 PTE of VOC (lbs/hr) = [Maximum Material Usage (lbs/hr)] * [ton/2000 lbs] * [VOC Emission Factor (lbs/ton)]
 PTE of VOC (lbs/day) = [PTE of VOC (lbs/hr)] * [24 hours/day]
 PTE of VOC (tons/yr) = [PTE of VOC (lbs/hr)] * [8760 hours/year] * [ton/2000 lbs]
 PTE of PM/PM10/PM2.5 Before Controls (lbs/hr) = [Maximum Material Usage (lbs/hr)] * [1 - VOC Content of Material] * [1 - Transfer Efficiency]
 PTE of PM/PM10/PM2.5 Before Controls (tons/yr) = [PTE of PM/PM10/PM2.5 Before Controls (lbs/hr)] * [8760 hours/year] * [ton/2000 lbs]
 HAP Emission Factor (lbs/ton) = [HAP Content of Material (% by weight)] * [HAP Emission Factor (weight % of starting monomer emitted)]
 PTE of HAP (tons/yr) = [Maximum Material Usage (lbs/hr)] * [ton/2000 lbs] * [HAP Emission Factor (lbs/ton)] * [8760 hours/year] * [ton/2000 lbs]

**TSD Appendix A: Emission Calculations
Polymer Cast Molding Grinding and Sanding (for PCM1)**

Company Name: Genesis Products, Inc.
Source Address: 2608 Almac Court, Elkhart, IN 46514 (Plant 1 and 2)
 2702 Ada Drive, Elkhart, IN 46514 (Plant 5)
Registration No.: R039-31086-00656
Reviewer: Nathan C. Bell

Potential to Emit (PTE) of PM/PM10/PM2.5

Process	Baghouse ID	Mass Loss Due to Grinding and Sanding (lbs/unit)*	Maximum Production Rate (units/hr)	PTE of PM/PM10/PM2.5 Before Controls (lbs/hr)	PTE of PM/PM10/PM2.5 Before Controls (tons/year)	Control Efficiency (%)	PTE of PM/PM10/PM2.5 After Controls (lbs/hr)	PTE of PM/PM10/PM2.5 After Controls (tons/year)
Polymer Cast Molding PCM1 Grinding and Sanding (Plant 5)	D5	3.000	1.50	4.50	19.71	99.0%	0.05	0.20
Totals				4.50	19.71		0.05	0.20

Methodology

*Based on information provided by the source.

PTE of PM/PM10/PM2.5 Before Controls (lbs/hr) = [Mass Loss Due to Grinding and Sanding (lbs/unit)] * [Maximum Production Rate (units/hr)]

PTE of PM/PM10/PM2.5 Before Controls (tons/year) = [PTE of PM/PM10/PM2.5 Before Controls (lbs/hr)] * [8,760 hours/year] * [ton/2000 lb]

PTE of PM/PM10/PM2.5 After Controls (lbs/hr) = [PTE of PM/PM10/PM2.5 Before Controls (lbs/hr)] * [1 - Control Efficiency %]

PTE of PM/PM10/PM2.5 After Controls (tons/year) = [PTE of PM/PM10/PM2.5 After Controls (lbs/hr)] * [8,760 hours/year] * [ton/2000 lb]

326 IAC 6-3-2 Allowable PM Emission Rate

Process	Baghouse ID	Process Weight Rate (lbs/hr)*	Process Weight Rate (tons/hr)	326 IAC 6-3-2 Allowable PM Emission Rate (lbs/hr)**	PTE of PM Before Controls (lbs/hr)	PTE of PM After Controls (lbs/hr)
Polymer Cast Molding PCM1 Grinding and Sanding (Plant 5)	D5	22.13	0.011	0.551	4.50	0.05

The baghouse must be in operation at all times that the polymer cast molding (PCM1) sawing and grinding are in operation in order to ensure compliance with 326 IAC 6-3-2

Methodology

Process Weight Rate (tons/hr) = [Process Weight Rate (lbs/hr)] * [ton/2000 lbs]

*The Process Weight Rate of 22.13 lbs/hour corresponds to the total Maximum Material Usage (lbs/hr) of the Polymer Cast Molding Operation (PCM1) (see TSD Appendix A, Page 7 of 10)

**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

**TSD Appendix A: Emission Calculations
Natural Gas Combustion Only
Capacity <100 MMBtu/hr
Heaters**

Company Name: Genesis Products, Inc.
Source Address: 2608 Almac Court, Elkhart, IN 46514 (Plant 1 and 2)
 2702 Ada Drive, Elkhart, IN 46514 (Plant 5)
Registration No.: R039-31086-00656
Reviewer: Nathan C. Bell

Unit	Maximum Heat Input Capacity (MMBtu/hr)	High Heat Value (MMBtu/MMcf)	Potential Throughput (MMcf/yr)
Building Heater (Plant 1)	0.175	1020	1.50
Ten (10) Space Heaters (Plant 1)	1.870	1020	16.06
Eight (8) Space Heaters (Plant 2)	1.142	1020	9.81
ThermoCycler Building Heater (Plant 5)	1.500	1020	12.88
Ten (10) Space Heaters (Plant 5)	0.850	1020	7.30
Totals	5.54		47.55

Criteria Pollutants	Pollutant						
	PM*	PM10*	PM2.5*	SO2	NOx	VOC	CO
Emission Factor in lb/MMcf	1.9	7.6	7.6	0.6	100 **see below	5.5	84
Potential Emission in tons/yr	0.045	0.04	0.181	1.4E-02	2.38	0.131	2.00

*PM emission factor is filterable PM only. PM10 emission factor is filterable and condensable PM10 combined. PM2.5 assumed equal to PM10
 **Emission Factors for NOx: Uncontrolled = 100, Low NOx Burner = 50, Low NOx Burners/Flue gas recirculation = 32

Hazardous Air Pollutants	HAPs - Organics*					HAPs - Metals*				
	Benzene	DCB	Formaldehyde	Hexane	Toluene	Pb	Cd	Cr	Mn	Ni
Emission Factor in 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
Potential Emission in tons/yr	5.0E-05	2.9E-05	1.8E-03	4.3E-02	8.1E-05	1.2E-05	2.6E-05	3.3E-05	9.0E-06	5.0E-05

*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 to Emit Total HAPs (tons/year) = 4.5E-02

All emission factors are based on normal firing.
 MMBtu = 1,000,000 Btu
 MMCF = 1,000,000 Cubic Feet of Gas
 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
 Potential Throughput (MMcf/yr) = [Maximum Heat Input Capacity (MMBtu/hr)] * [8,760 hours/year] * [MMcf/1,020 MMBtu]
 Potential Emissions (tons/yr) = [Potential Throughput (MMcf/yr)] * [Emission Factor (lb/MMcf)] * [ton/2,000 lbs]

Greenhouse Gases (GHGs)	Greenhouse Gas (GHG)		
	CO2	CH4	N2O
Emission Factor in lb/MMcf	120000	2.3	2.2
Potential Emission in tons/yr	2853.18	5.5E-02	5.2E-02
Summed Potential Emissions in tons/yr	2853.29		
CO2e Total in tons/yr	2870.55		

Methodology

The N2O Emission Factor for uncontrolled is 2.2. The N2O Emission Factor for low Nox burner is 0.64.
 Emission Factors are from AP 42, Table 1.4-2 SCC #1-02-006-02, 1-01-006-02, 1-03-006-02, and 1-03-006-03.
 Greenhouse Warming Potentials (GWP) from Table A-1 of 40 CFR Part 98 Subpart A.
 Potential Emissions (tons/yr) = [Potential Throughput (MMcf/yr)] * [Emission Factor (lb/MMcf)] * [ton/2,000 lbs]
 CO2e Total (tons/yr) = [CO2 Potential Emissions (ton/yr) * CO2 GWP (1)] + [CH4 Potential Emissions (ton/yr) * CH4 GWP (21)] + [N2O Potential Emissions (ton/yr) * N2O GWP (310)]

Abbreviations

PM = Particulate Matter	DCB = Dichlorobenzene	CO2 = Carbon Dioxide
PM10 = Particulate Matter (<10 um)	Pb = Lead	CH4 = Methane
SO2 = Sulfur Dioxide	Cd = Cadmium	N2O = Nitrous Oxide
NOx = Nitrous Oxides	Cr = Chromium	CO2e = CO2 equivalent emissions
VOC = Volatile Organic Compounds	Mn = Manganese	
CO = Carbon Monoxide	Ni = Nickel	

**TSD Appendix A: Emission Calculations
Fugitive Dust Emissions - Paved Roads**

Company Name: Genesis Products, Inc.
Source Address: 2608 Almac Court, Elkhart, IN 46514 (Plant 1 and 2)
 2702 Ada Drive, Elkhart, IN 46514 (Plant 5)
Registration No.: R039-31086-00656
Reviewer: Nathan C. Bell

Paved Roads at Industrial Site

The following calculations determine the amount of emissions created by paved roads, based on 8,760 hours of use and AP-42, Ch 13.2.1 (1/2011).

Vehicle Information (provided by source)

Type of Traffic	Vehicle Type	Maximum number of vehicles per day	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)
Passenger Vehicle (entering plant) (one-way trip)	Passenger Vehicle	35.0	1.0	35.0	4.0	140.0	450	0.085	3.0	1088.8
Passenger Vehicle (leaving plant) (one-way trip)	Passenger Vehicle	35.0	1.0	35.0	4.0	140.0	450	0.085	3.0	1088.8
Shipping/Receiving Truck (entering plant) (one-way trip)	Freight Truck (5 axles)	3.0	3.0	9.0	40.0	360.0	600	0.114	1.0	373.3
Shipping/Receiving Truck (leaving plant) (one-way trip)	Freight Truck (5 axles)	3.0	3.0	9.0	40.0	360.0	600	0.114	1.0	373.3
Total				88.0		1000.0			8.0	2924.1

Average Vehicle Weight Per Trip = 11.4 tons/trip
 Average Miles Per Trip = 0.09 miles/trip

Unmitigated Emission Factor, $E_f = [k * (sL)^{0.91} * (W)^{1.02}]$ (Equation 1 from AP-42 13.2.1)

	PM	PM10	PM2.5	
where k =	0.011	0.0022	0.00054	lb/VMT = particle size multiplier (AP-42 Table 13.2.1-1)
W =	11.4	11.4	11.4	tons = average vehicle weight (provided by source)
sL =	9.7	9.7	9.7	g/m ² = silt loading value for paved roads at iron and steel production facilities - Table 13.2.1-3

Taking natural mitigation due to precipitation into consideration, Mitigated Emission Factor, $E_{ext} = E * [1 - (p/4N)]$ (Equation 2 from AP-42 13.2.1)

Mitigated Emission Factor, $E_{ext} = E_f * [1 - (p/4N)]$
 where p = 125 days of rain greater than or equal to 0.01 inches (see Fig. 13.2.1-2)
 N = 365 days per year

	PM	PM10	PM2.5	
Unmitigated Emission Factor, $E_f =$	1.037	0.207	0.0509	lb/mile
Mitigated Emission Factor, $E_{ext} =$	0.949	0.190	0.0466	lb/mile

Type of Traffic	Vehicle Type	Unmitigated PTE of PM (tons/yr)	Unmitigated PTE of PM10 (tons/yr)	Unmitigated PTE of PM2.5 (tons/yr)	Mitigated PTE of PM (tons/yr)	Mitigated PTE of PM10 (tons/yr)	Mitigated PTE of PM2.5 (tons/yr)
Passenger Vehicle (entering plant) (one-way trip)	Passenger Vehicle	0.56	0.11	0.03	0.52	0.10	0.03
Passenger Vehicle (leaving plant) (one-way trip)	Passenger Vehicle	0.56	0.11	0.03	0.52	0.10	0.03
Shipping/Receiving Truck (entering plant) (one-way trip)	Freight Truck (5 axles)	0.19	0.04	0.01	0.18	0.04	0.01
Shipping/Receiving Truck (leaving plant) (one-way trip)	Freight Truck (5 axles)	0.19	0.04	0.01	0.18	0.04	0.01
		1.52	0.30	0.07	1.39	0.28	0.07

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)
 PM2.5 = Particulate Matter (<2.5 um)
 PTE = Potential to Emit



INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT

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TO: Nate Rhoden
Genesis Products, Inc
2608 Almac Dr
Elkhart, IN 46514

DATE: February 20, 2012

FROM: Matt Stuckey, Branch Chief
Permits Branch
Office of Air Quality

SUBJECT: Final Decision
Registration
039-31086-00656

Enclosed is the final decision and supporting materials for the air permit application referenced above. Please note that this packet contains the original, signed, permit documents.

The final decision is being sent to you because our records indicate that you are the contact person for this application. However, if you are not the appropriate person within your company to receive this document, please forward it to the correct person.

A copy of the final decision and supporting materials has also been sent via standard mail to:
Nate Black (D & B Environmental)
OAQ Permits Branch Interested Parties List

If you have technical questions regarding the enclosed documents, please contact the Office of Air Quality, Permits Branch at (317) 233-0178, or toll-free at 1-800-451-6027 (ext. 3-0178), and ask to speak to the permit reviewer who prepared the permit. If you think you have received this document in error, please contact Joanne Smiddie-Brush of my staff at 1-800-451-6027 (ext 3-0185), or via e-mail at jbrush@idem.IN.gov.

Final Applicant Cover letter.dot 11/30/07

Mail Code 61-53

IDEM Staff	CDENNY 02/20/2012 Genesis Products, Inc 039-31086-00656 (final)		Type of Mail: CERTIFICATE OF MAILING ONLY	AFFIX STAMP HERE IF USED AS CERTIFICATE OF MAILING
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											Remarks
1		Nate Rhoden Genesis Products, Inc 2608 Almac Dr Elkhart IN 46514 (Source CAATS)									
2		Elkhart City Council and Mayors Office 229 South Second Street Elkhart IN 46516 (Local Official)									
3		Elkhart County Health Department 608 Oakland Avenue Elkhart IN 46516 (Health Department)									
4		Laurence A. McHugh Barnes & Thornburg 100 North Michigan South Bend IN 46601-1632 (Affected Party)									
5		Elkhart County Board of Commissioners 117 North Second St. Goshen IN 46526 (Local Official)									
6		Mark Zeltwanger 26545 CR 52 Nappanee IN 46550 (Affected Party)									
7		Mr. Nate Black D & B Environmental Services, Inc. 401 Lincolnway W Osceola IN 46561 (Consultant)									
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