

Mr. Charles Schnurpel
Woodcrest Manufacturing, Inc.
P.O. Box 848
Peru, IN 46970

Re: **103-10720**
Significant Source Modification to:
Part 70 permit No.: T103-6056-00027

Dear Mr. Schnurpel:

Woodcrest Manufacturing, Inc. was issued a Part 70 operating permit T103-6056-00027 on October 7, 1998 for a wood furniture manufacturing plant. An application to modify the source was received on March 8, 1999. Pursuant to 326 IAC 2-7-10.5 the following emission units are approved for construction at the source:

- (a) One (1) flowcoater, identified as EU-02Q, and exhausting to one (1) stack, identified as S-02N.
- (b) One (1) spray booth, identified as EU-02R, utilizing an air assisted airless application system, with particulate matter emissions controlled by dry filters, and exhausting to one (1) stack, identified as S-02O.

The following construction conditions are applicable to the proposed project:

General Construction Conditions

1. The data and information supplied with the application shall be considered part of this source modification approval. Prior to any proposed change in construction which may affect the potential to emit (PTE) of the proposed project, the change must be approved by the Office of Air Management (OAM).
2. This approval to construct does not relieve the Permittee of the responsibility to comply with the provisions of the Indiana Environmental Management Law (IC 13-11 through 13-20; 13-22 through 13-25; and 13-30), the Air Pollution Control Law (IC 13-17) and the rules promulgated thereunder, as well as other applicable local, state, and federal requirements.
3. Effective Date of the Permit
Pursuant to IC 13-15-5-3, this approval becomes effective upon its issuance.
4. Pursuant to 326 IAC 2-1.1-9 and 326 IAC 2-7-10.5(i), the Commissioner may revoke this approval if construction is not commenced within eighteen (18) months after receipt of this approval or if construction is suspended for a continuous period of one (1) year or more.

Indiana Department of Environmental Management Office of Air Management

Technical Support Document (TSD) for a Source Modification to a Part 70 Operating Permit

Source Background and Description

Source Name:	Woodcrest Manufacturing, Inc.
Source Location:	150 East Washington Street, Peru, Indiana 46970
County:	Miami
SIC Code:	2512
Operation Permit No.:	T103-6056-00027
Operation Permit Issuance Date:	October 7, 1998
Source Modification No.:	103-10720-00027
Permit Reviewer:	Bryan Sheets

The Office of Air Management (OAM) has reviewed a modification application from Woodcrest Manufacturing, Inc., on March 8, 1999, relating to the operation of a new coating line, designated as SC4, consisting of the following equipment:

- (1) One (1) flowcoater, identified as EU-02Q, and exhausting to one (1) stack, identified as S-02N.
- (2) One (1) spray booth, identified as EU-02R, utilizing an air assisted airless application system, with particulate matter emissions controlled by dry filters, and exhausting to one (1) stack, identified as S-02O.

Existing Approvals

The source was issued a Part 70 Operating Permit T103-6056-00027) on October 7, 1998. The source has since received the following:

- (a) First Minor Permit Modification No.: 103-10266, issued on March 2, 1999.

Enforcement Issue

There are no enforcement actions pending.

Stack Summary

Stack ID	Operation	Height (feet)	Diameter (feet)	Flow Rate (acfm)	Temperature (°F)
S-02N	Flowcoater	35	2	6,500	70
S-02O	Spray Booth	35	2	6,500	70

Recommendation

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

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

An application for the purposes of this review was received on March 8, 1999. Additional information was received on March 22, 1999.

Emission Calculations

See Appendix A of this document for detailed emissions calculations.

Limited Potential To Emit

Pursuant to 326 IAC 2-1.1-1(16), Potential to Emit is defined as “the maximum capacity of a stationary source to emit any air pollutant under its physical and operational design. Any physical or operational limitation on the capacity of a source to emit an air pollutant, including air pollution control equipment and restrictions on hours of operation or type or amount of material combusted, stored, or processed shall be treated as part of its design if the limitation is enforceable by the US EPA.”

Pollutant	Potential Emissions (tons/year)	Limited Potential To Emit (tons/year)
PM	7.73	0.09
PM-10	7.73	0.09
SO ₂	0	0
VOC	148.8	39
CO	0	0
NO _x	0	0

Note: For the purpose of determining Title V applicability for particulates, PM-10, not PM, is the regulated pollutant in consideration.

HAP's	Potential Emissions (tons/year)	Limited Potential To Emit (tons/year)
Formaldehyde	0.08	0.02
Methyl Isobutyl Ketone	1.45	0.34
Toluene	18.37	4.36
Xylene	2.00	0.48
TOTAL	21.9	5.2

- (a) The potential to emit (as defined in 326 IAC 2-1.1-1(16)) of volatile organic compounds (VOC) are equal to or greater than 25 tons per year. Therefore, the source is required to obtain a significant source modification subject to the provisions of 326 IAC 2-7-10.5(f).

Actual Emissions

The following table shows the actual emissions from the source. This information reflects 1996 emission data for the HAPs and 1995 data for all other pollutants.

Pollutant	Actual Emissions (tons/year)
PM	< 10
PM-10	< 10
SO ₂	0
VOC	156.0
CO	0
Total HAPs	44.7
NO _x	0

County Attainment Status

The source is located in Miami County.

Pollutant	Status
PM-10	Attainment or Unclassifiable
SO ₂	Attainment or Unclassifiable
NO ₂	Attainment or Unclassifiable
Ozone	Attainment or Unclassifiable
CO	Attainment or Unclassifiable
Lead	Attainment or Unclassifiable

- (a) Volatile organic compounds (VOC) and oxides of nitrogen (NO_x) are precursors for the formation of ozone. Therefore, VOC and NO_x emissions are considered when evaluating the rule applicability relating to the ozone standards. Miami County has been designated as attainment or unclassifiable for ozone.

Proposed Modification

PTE from the proposed modification (based on 8,760 hours of operation per year at rated capacity including enforceable emission control and production limit, where applicable):

Pollutant	PM (ton/yr)	PM10 (ton/yr)	SO ₂ (ton/yr)	VOC (ton/yr)	CO (ton/yr)	NO _x (ton/yr)
Proposed Modification	0.09	0.09	0	39	0	0
Net Emissions	0.09	0.09	0	39	0	0
PSD Significant Level	25	15	40	40	100	40

Note: The VOC emissions will be limited to less than 40 tons per year to avoid review under the PSD rules, 326 IAC 2-2 and 40 CFR 52.21. Record keeping and reporting will be required to document compliance with the limit.

Also, the potential to emit particulate matter will be limited by making the use of dry filters federally enforceable.

This modification to an existing major stationary source is not major because the emissions increases are less than the PSD significant levels. Therefore, pursuant to 326 IAC 2-2 and 40 CFR 52.21, the Prevention of Significant Deterioration requirements do not apply.

Federal Rule Applicability

- (a) There are no New Source Performance Standards (NSPS)(326 IAC 12 and 40 CFR Part 60) applicable to this source.
- (b) Prior to this modification, the source was subject to the National Emission Standards for Hazardous Air Pollutants, 326 IAC 14, (40 CFR 63, Subpart JJ) because they are a major source of HAP emissions and are considered wood furniture manufacturer. This modification will also be subject to the requirements of Subpart JJ. The requirements of Subpart JJ include, but are not limited to, the following:
- (1) Limit the volatile hazardous air pollutant (VHAP) emissions from finishing operations to 1.0 pound VHAP per pound solids,

- (2) Limit VHAP emissions from foam adhesives to 1.8 pounds VHAP per pound solids, and
- (3) Limit VHAP emissions from contact adhesives to 1.0 pound VHAP per pound solids.

The provisions of 40 CFR 63 Subpart A - General Provisions, which are incorporated as 326 IAC 20-1-1, apply to the facility described in this section except when otherwise specified in 40 CFR 63 Subpart JJ.

State Rule Applicability - Entire Source

326 IAC 2-6 (Emission Reporting)

This source is subject to 326 IAC 2-6 (Emission Reporting), because it has the potential to emit more than one hundred (100) tons per year of VOC. Pursuant to this rule, the owner/operator of the source must annually submit an emission statement for the source. The annual statement must be received by July 1 of each year and contain the minimum requirement as specified in 326 IAC 2-6-4. The submittal should cover the period defined in 326 IAC 2-6-2(8)(Emission Statement Operating Year).

326 IAC 4-1 (Open Burning)

Pursuant to 326 IAC 4-1-2, the applicant shall not open burn any material, except as provided in 326 IAC 4-1-3, 326 IAC 4-1-4 or 326 IAC 4-1-6.

326 IAC 5-1 (Visible Emissions Limitations)

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

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

326 IAC 6-4 (Fugitive Dust Emissions)

Pursuant to 326 IAC 6-4, fugitive dust shall not be visibly crossing the property lines except as provided in 326 IAC 6-4-6 (Exceptions).

State Rule Applicability - Individual Facilities

326 IAC 2-2 (Prevention of Significant Deterioration)

The VOC emissions from coating line SC4, which includes flowcoater EU-02Q and spray booth EU-02R, will be limited to less than 40 tons per year. This will be accomplished through coating and solvent usage record keeping which demonstrates compliance. Therefore, the requirements of 326 IAC 2-2 and 40 CFR 52.21 will not apply.

326 IAC 6-3-2 (Process Operations)

Pursuant to 326 IAC 6-3-2 (Process Operations), the particulate matter (PM) overspray from the surface coating booth EU-02R shall be limited by the following:

Interpolation and extrapolation 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:

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

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

The dry filters shall be in operation at all times the spray booth is in operation, in order to comply with this limit.

326 IAC 8-2-12 (Wood Furniture and Cabinet Coating)

The spray booth and flowcoater are subject to the requirements of 326 IAC 8-2-12 since actual VOC emissions are greater than 15 pounds per day. Pursuant to 326 IAC 8-2-12 (Wood Furniture and Cabinet Coating), the surface coating applied to wood furniture and cabinets shall utilize one of the following application methods:

- 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.

Compliance Requirements

Permits issued under 326 IAC 2-7 are required to ensure that sources can demonstrate compliance with applicable state and federal rules on a more or less continuous basis. All state and federal rules contain compliance provisions, however, these provisions do not always fulfill the requirement for a more or less continuous demonstration. When this occurs IDEM, OAM, in conjunction with the source, must develop specific conditions to satisfy 326 IAC 2-7-5. As a result, compliance requirements are divided into two sections: Compliance Determination Requirements and Compliance Monitoring Requirements.

Compliance Determination Requirements in Section D of the permit are those conditions that are found more or less directly within state and federal rules and the violation of which serves as grounds for enforcement action. If these conditions are not sufficient to demonstrate continuous compliance, they will be supplemented with Compliance Monitoring Requirements, also Section D of the permit. Unlike Compliance Determination Requirements, failure to meet Compliance Monitoring conditions would serve as a trigger for corrective actions and not grounds for enforcement action. However, a violation in relation to a compliance monitoring condition will arise through a source's failure to take the appropriate corrective actions within a specific time period.

The spray booth has applicable compliance monitoring conditions as specified below:

- (1) Daily inspections shall be performed to verify the placement, integrity and particle loading of the filters. To monitor the performance of the dry filters, daily observations shall be made of the overspray while one or more of the booths are in operation. Weekly inspections shall be performed of the coating emissions from the stack and the presence of overspray on the rooftops and the nearby ground.

The Preventive Maintenance Plan for this unit shall contain troubleshooting contingency and corrective actions for when an overspray emission, evidence of overspray emission, or other abnormal emission is observed. Additional inspections and preventive measures shall be performed as prescribed in the Preventive Maintenance Plan.

These monitoring conditions are necessary because the dry filters for the spray booth must operate properly to ensure compliance with 326 IAC 6-3 (Process Operations), 326 IAC 5-1 (Opacity Limitations) and 326 IAC 2-7 (Part 70).

Air Toxic Emissions

Indiana presently requests applicants to provide information on emissions of the 188 hazardous air pollutants (HAPs) set out in the Clean Air Act Amendments of 1990. These pollutants are either carcinogenic or otherwise considered toxic and are commonly used by industries. They are listed as air toxics on the Office of Air Management (OAM) Part 70 Application Form GSD-08.

- (a) This modification will emit levels of air toxics less than those which constitute a major source according to Section 112 of the 1990 Clean Air Act Amendments. However, the source does emit levels of air toxics greater than those that constitutes major source applicability according to Section 112 of the 1990 Clean Air Act Amendments.
- (b) See attached calculations for detailed air toxic calculations.

Conclusion

The construction of this coating line SC4 shall be subject to the conditions of the attached proposed Part 70 Significant Source Modification No. 103-10720-00027.

Operation of coating line SC4 may not commence until Administrative Amendment No. 103-10816-00027 is issued.

5. All requirements and conditions of this construction approval shall remain in effect unless modified in a manner consistent with procedures established pursuant to 326 IAC 2.
6. Pursuant to 326 IAC 2-7-10.5(l) the emission units constructed under this approval shall not be placed into operation prior to revision of the source's Part 70 Operating Permit to incorporate the required operation conditions.

The proposed operating conditions applicable to these emission units are listed below. These proposed operating conditions shall be incorporated into the Part 70 operating permit as an administrative amendment in accordance with 326 IAC 2-7-10.5(l)(1) and 326 IAC 2-7-11.

The following operation conditions are applicable to the proposed project:

1. Volatile Organic Compounds (VOC) [326 IAC 8-2-12]
Pursuant to 326 IAC 8-2-12 (Wood Furniture and Cabinet Coating), the surface coating applied to wood furniture in lines SC1, SC2, SC3 and SC4 shall utilize one of the following application methods:

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.

2. PSD Minor Limit [326 IAC 2-2] [40 CFR 52.21]
Coating line SC4 (EU-02Q and EU-02R) shall use less than 40 tons of VOC, including coatings, dilution solvents, and cleaning solvents, per twelve (12) consecutive month period. Compliance with this limit makes 326 IAC 2-2 (Prevention of Significant Deterioration) and 40 CFR 52.21 not applicable.

3. Particulate Matter (PM) [326 IAC 6-3-2(c)]
Pursuant to 326 IAC 6-3-2, the PM from the spray booth EU-02R shall not exceed the pound per hour emission rate established as E in the following formula:

Interpolation and extrapolation 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:

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

Wood Furniture NESHAP [40 CFR 63, Subpart JJ]

4. Pursuant to 40 CFR 63, Subpart JJ, the wood furniture coating operations shall comply with the following conditions:

- (a) Limit the Volatile Hazardous Air Pollutants (VHAP) emissions from finishing operations as follows:
 - (1) Achieve a weighted average volatile hazardous air pollutant (VHAP) content across all coatings of one (1.0) pound VHAP per pound solids; or
 - (2) Use compliant finishing materials in which all stains, washcoats, sealers, topcoats, basecoats and enamels have a maximum VHAP content of one (1.0) pound VHAP per pound solid, as applied. Thinners used for on-site formulation of washcoats, basecoats, and enamels have a three percent (3.0%) maximum VHAP content by weight. All other thinners have a ten percent (10.0%) maximum VHAP content by weight; or
 - (3) Use a control device to limit emissions to one (1.0) pound VHAP per pound solids; or
 - (4) Use a combination of (A), (B), and (C).
- (b) Limit VHAP emissions contact adhesives as follows:
 - (1) For foam adhesives used in products that meet the upholstered seating flammability requirements, the VHAP content shall not exceed 1.8 pounds VHAP per pound solids.
 - (2) For all other contact adhesives (except aerosols and contact adhesives applied to nonporous substrates) the VHAP content shall not exceed one (1.0) pound VHAP per pound solids.
 - (3) Use a control device to limit emissions to one (1.0) pound VHAP per pound solids.
- (c) The strippable spray booth material shall have a maximum VOC content of eight-tenths (0.8) pounds VOC per pound solids.

Work Practice Standards [40 CFR 63.803]

5. The owner or operator of an affected source subject to this subpart shall prepare and maintain a written work practice implementation plan within sixty (60) calendar days after the compliance date. The work practice implementation plan must define environmentally desirable work practices for each wood furniture manufacturing operation and at a minimum address each of the following work practice standards as defined under 40 CFR 63.803:
- (a) Operator training course.
 - (b) Leak inspection and maintenance plan.
 - (c) Cleaning and washoff solvent accounting system.
 - (d) Chemical composition of cleaning and washoff solvents.
 - (e) Spray booth cleaning.
 - (f) Storage requirements.

- (g) Conventional air spray guns shall only be used under the circumstances defined under 40 CFR 63.803(h).
- (h) Line cleaning.
- (i) Gun cleaning.
- (j) Washoff operations.
- (k) Formulation assessment plan for finishing operations.

Particulate Matter (PM)

6. The dry filters for PM control shall be in operation at all times when the spray booth EU-02R is in operation.

Monitoring

7. Daily inspections shall be performed to verify the placement, integrity and particle loading of the filters. To monitor the performance of the dry filters, daily observations shall be made of the overspray from the booth stacks while the associated booth is in operation. The Compliance Response Plan shall be followed whenever a condition exists which should result in a response step. Failure to take response steps in accordance with Section C - Compliance Monitoring Plan - Failure to Take Response Steps, shall be considered a violation of this permit.

Weekly inspections shall be performed of the coating emissions from the stack and the presence of overspray on the rooftops and the nearby ground. The Compliance Response Plan for this unit shall contain troubleshooting contingency and response steps for when a noticeable change in overspray emission, or evidence of overspray emission is observed. The Compliance Response Plan shall be followed whenever a condition exists which should result in a response step. Failure to take response steps in accordance with Section C - Compliance Monitoring Plan - Failure to Take Response Steps, shall be considered a violation of this permit.

Record Keeping Requirements

8. To document compliance with VOC usage limitation in Operation Condition 2, the Permittee shall maintain records in accordance with (a) through (e) below.

- (a) The amount and VOC content of each coating material and solvent used. Records shall include purchase orders, invoices, and material safety data sheets (MSDS) necessary to verify the type and amount used. Solvent usage records shall differentiate between those added to coatings and those used as cleanup solvents;
- (b) A log of the dates of use;
- (c) The cleanup solvent usage for each month;
- (d) The total VOC usage for each month; and
- (e) The weight of VOCs emitted for each compliance period.

To document compliance with Operation Condition 4, the Permittee shall maintain records in accordance with (a) through (d) below.

- (a) Certified Product Data Sheet for each finishing material and thinner.
- (b) The HAP content in pounds of VHAP per pounds of solids, as applied, for all finishing materials.

- (c) The VHAP content in weight percent of each thinner used.
- (d) When the averaging compliance method is used, copies of the averaging calculations for each month as well as the data on the quantity of coating and thinners used to calculate the average.

To document compliance with Operation Condition 5, the Permittee shall maintain records demonstrating actions have been taken to fulfill the Work Practice Implementation Plan.

To document compliance with Operation Condition 7, the Permittee shall maintain a log of daily overspray observations, daily and weekly inspections, and those additional inspections prescribed by the Preventive Maintenance Plan.

Reporting Requirements

- 9. A quarterly summary of the information to document compliance with Operation Condition 2 shall be submitted to IDEM, OAM, within thirty (30) days after the end of the quarter being reported.

A semi-annual Continuous Compliance Report to document compliance with Operation Condition 4 shall be submitted to IDEM, OAM, and U.S. EPA within thirty (30) days after the end of the six (6) months being reported.

The six (6) month periods shall cover the following months:

- (1) January 1 through June 30.
- (2) July 1 through December 31.

Operation of the equipment listed in this significant source modification cannot commence until the Administrative Amendment No. 103-10816-00027, which will incorporate these limitations into the Part 70 operating permit, has been issued.

This decision is subject to the Indiana Administrative Orders and Procedures Act - IC 4-21.5-3-5. If you have any questions on this matter call (800) 451-6027, press 0 and ask for Bryan Sheets or extension 3-0431, or dial (317) 233-0431.

Sincerely,

Paul Dubenetzky, Chief
Permits Branch
Office of Air Management

Attachments

bjs

cc: File - Miami County
U.S. EPA, Region V
Miami County Health Department
Air Compliance Section Inspector - Ryan Hillman
Compliance Data Section - Mindy Jones
Administrative and Development - Janet Mobley
Technical Support and Modeling - Michele Boner

**Appendix A: Emissions Calculations
VOC and Particulate
From Surface Coating Operations**

Company Name: Woodcrest Manufacturing
Address City IN Zip: 150 Washington Avenue, Peru, IN 46970
Source Modification No.: 103-10720
Pit ID: 103-00027
Reviewer: Bryan Sheets
Date: 03-26-99

Material	Density (Lb/Gal)	Weight % Volatile (H2O& Organics)	Weight % Water	Weight % Organics	Volume % Water	Volume % Non-Vol (solids)	Gal of Mat (gal/unit)	Maximum (unit/hour)	Pounds VOC per gallon of coating less water	Pounds VOC per gallon of coating	VOC Emissions			PM Emissions ton/yr	lb VOC /gal solids	Transfer Efficiency
											(lb/hr)	(lb/day)	(ton/yr)			
Flowcoater EU-02Q																
Hazelwood Stain	6.78	90.86%	0.0%	90.9%	0.0%	5.37%	0.04350	30.000	6.16	6.16	8.04	192.93	35.21	0.00	114.71	100%
Mineral Spirits	6.42	100.00%	0.0%	100.0%	0.0%	0.00%	0.06380	30.000	6.42	6.42	12.29	294.91	53.82	0.00	ERR	100%
Spray Booth EU-02R																
Sealer	7.39	68.06%	0.0%	68.1%	0.0%	27.40%	0.04550	30.000	5.03	5.03	6.87	164.77	30.07	3.53	18.36	75%
Varnish	7.6	63.86%	0.0%	63.9%	0.0%	27.66%	0.04650	30.000	4.86	4.86	6.78	162.70	29.69	4.20	17.57	75%

Potential Emissions 33.97 815.31 148.79 7.73

METHODOLOGY

Actual Emissions 33.97 271.77 35.33 0.09 with 95% control for dry filters

Actual Emissions are based on 8 hour days and 5 days per week.

Pounds of VOC per Gallon Coating less Water = (Density (lb/gal) * Weight % Organics) / (1-Volume % water)

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

Potential VOC Pounds per Hour = Pounds of VOC per Gallon coating (lb/gal) * Gal of Material (gal/unit) * Maximum (units/hr)

Potential VOC Pounds per Day = Pounds of VOC per Gallon coating (lb/gal) * Gal of Material (gal/unit) * Maximum (units/hr) * (24 hr/day)

Potential VOC Tons per Year = Pounds of VOC per Gallon coating (lb/gal) * Gal of Material (gal/unit) * Maximum (units/hr) * (8760 hr/yr) * (1 ton/2000 lbs)

Particulate Potential Tons per Year = (units/hour) * (gal/unit) * (lbs/gal) * (1- Weight % Volatiles) * (1-Transfer efficiency) *(8760 hrs/yr) *(1 ton/2000 lbs)

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

Total = Worst Coating + Sum of all solvents used

Appendix A: Emissions Calculations

HAP Emissions

From Surface Coating Operations

Company Name: Woodcrest Manufacturing
Address City IN Zip: 150 Washington Avenue, Peru, IN 46970
Source Modification No.: 103-10720
Plt ID: 103-00027
Reviewer: Bryan Sheets
Date: 03-26-99

Material	Density (Lb/Gal)	Gal of Mat (gal/unit)	Maximum (unit/hour)	Weight % Xylene	Weight % Toluene	Weight % Formaldehyde	Weight % Methyl Isobutyl Ketone	Xylene Emissions (ton/yr)	Toluene Emissions (ton/yr)	Formaldehyde Emissions (ton/yr)	Methyl Isobutyl Ketone Emissions (ton/yr)
Flowcoater EU-02Q											
Hazelwood Stain	6.78	0.04350	30.000	5.17%	0.00%	0.00%	0.00%	2.00	0.00	0.00	0.00
Mineral Spirits	6.42	0.06380	30.000	0.00%	0.00%	0.00%	0.00%	0.00	0.00	0.00	0.00
Spray Booth EU-02R											
Sealer	7.39	0.04550	30.000	0.00%	21.34%	0.00%	3.28%	0.00	9.43	0.00	1.45
Varnish	7.6	0.04650	30.000	0.00%	19.24%	0.18%	0.00%	0.00	8.95	0.08	0.00

Potential Emissions 2.00 18.37 0.08 1.45

Actual Emissions 0.48 4.36 0.02 0.34

METHODOLOGY

HAPS emission rate (tons/yr) = Density (lb/gal) * Gal of Material (gal/unit) * Maximum (unit/hr) * Weight % HAP * 8760 hrs/yr * 1 ton/2000 lbs

Actual Emissions are based on 8 hour days and 5 days per week.