

**CONSTRUCTION PERMIT  
OFFICE OF AIR MANAGEMENT**

**Paoli, Inc.  
201 E. Martin Street  
Orleans, Indiana 47452**

is hereby authorized to construct the addition of a UV coating system with support facilities, consisting of the following equipment:

- (a) One (1) natural gas-fired boiler, identified as B2, maximum heat input capacity: 3.6 million British thermal units per hour.
- (b) One (1) natural gas-fired drying oven, identified as O21, maximum heat input capacity: 0.5 million British thermal units per hour.
- (c) One (1) finish sander, identified as DC-UV, equipped with a dust collector, maximum capacity: 1,250 pounds of wood laminate and 61.8 pounds of coating per hour.
- (d) One (1) robotic spray paint booth, identified as U1, equipped with air assisted airless robotic spray guns and a water capture system for overspray control, capacity: 25 wood desk tops per hour.
- (e) Three (3) rollcoating booths, identified as U1a, U1b, and U1c, equipped with UV Cure Lamps, capacity: 25 wood desk tops per hour, each.
- (f) One (1) manual spray paint booth, identified as U2, equipped with high volume, low pressure (HVLP) manual spray guns and dry filters for overspray control, capacity: 25 wood desk tops per hour.
- (g) Seven (7) spray paint booths, identified as U3, U4, U5, U6, U7, U8 and U9, equipped with high volume, low pressure (HVLP) spray guns and dry filters for overspray control, capacity of U3, U4, U5, U6, U7 and U8: 25 wood desk tops per hour, each; capacity of U9: 1.25 wood desk tops per hour.

This permit is issued to the above mentioned company (herein known as the Permittee) under the provisions of 326 IAC 2-1 and 40 CFR 52.780, with conditions listed on the attached pages.

Construction Permit No.: CP 117-9309-00014	
Issued by:  Paul Dubenetzky, Branch Chief Office of Air Management	Issuance Date:

## Construction Conditions

### General Construction Conditions

1. The data and information supplied with the application shall be considered part of this permit. Prior to any proposed change in construction which may affect allowable emissions, the change must be approved by the Office of Air Management (OAM).
2. This permit 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.

### Effective Date of the Permit

3. Pursuant to IC 13-15-5-3, this permit becomes effective upon its issuance.
4. Pursuant to 326 IAC 2-1-9(b)(Revocation of Permits), the Commissioner may revoke this permit 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.
5. Notwithstanding Construction Condition No. 6, all requirements and conditions of this construction permit shall remain in effect unless modified in a manner consistent with procedures established for modifications of construction permits pursuant to 326 IAC 2 (Permit Review Rules).

### First Time Operation Permit

6. This document shall also become a first-time operation permit pursuant to 326 IAC 2-1-4 (Operating Permits) when, prior to start of operation, the following requirements are met:
  - (a) The attached affidavit of construction shall be submitted to the Office of Air Management (OAM), Permit Administration & Development Section, verifying that the facilities were constructed as proposed in the application. The facilities covered in the Construction Permit may begin operating on the date the Affidavit of Construction is postmarked or hand delivered to IDEM.
  - (b) If construction is completed in phases; i.e., the entire construction is not done continuously, a separate affidavit must be submitted for each phase of construction. Any permit conditions associated with operation start up dates such as stack testing for New Source Performance Standards (NSPS) shall be applicable to each individual phase.
  - (c) The Permittee shall receive an Operation Permit Validation Letter from the Chief of the Permit Administration & Development Section and attach it to this document.
  - (d) The operation permit will be subject to annual operating permit fees pursuant to 326 IAC 2-7-19 (Fees).
  - (e) Pursuant to 326 IAC 2-1-4, the Permittee shall apply for an operation permit renewal at least ninety (90) days prior to the expiration date established in the validation letter. The operation permit issued shall contain as a minimum the conditions in the Operation Conditions section of this permit.

- (f) The Permittee has submitted their Part 70 (T-117-6003-00014) application on May 31, 1996 for the existing source. The equipment being reviewed under this permit shall be incorporated in the submitted Part 70 application.

- 7. When the facility is constructed and placed into operation the following operation conditions shall be met:

### **Operation Conditions**

#### General Operation Conditions

- 1. The data and information supplied in the application shall be considered part of this permit. Prior to any change in the operation which may result in an increase in allowable emissions exceeding those specified in 326 IAC 2-1-1 (Construction and Operating Permit Requirements), the change must be approved by the Office of Air Management (OAM).
- 2. The Permittee shall 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.

#### Preventive Maintenance Plan

- 3. Pursuant to 326 IAC 1-6-3 (Preventive Maintenance Plans), the Permittee shall prepare and maintain a preventive maintenance plan, including the following information:
  - (a) Identification of the individual(s) responsible for inspecting, maintaining, and repairing emission control devices.
  - (b) A description of the items or conditions that will be inspected and the inspection schedule for said items or conditions.
  - (c) Identification of the replacement parts which will be maintained in inventory for quick replacement.

The preventive maintenance plan shall be submitted to IDEM, OAM upon request and shall be subject to review and approval.

#### Transfer of Permit

- 4. Pursuant to 326 IAC 2-1-6 (Transfer of Permits):
  - (a) In the event that ownership of this UV coating system with support facilities is changed, the Permittee shall notify OAM, Permit Branch, within thirty (30) days of the change. Notification shall include the date or proposed date of said change.
  - (b) The written notification shall be sufficient to transfer the permit from the current owner to the new owner.
  - (c) The OAM shall reserve the right to issue a new permit.

#### Permit Revocation

- 5. Pursuant to 326 IAC 2-1-9(a)(Revocation of Permits), this permit to construct and operate may be

revoked for any of the following causes:

- (a) Violation of any conditions of this permit.
- (b) Failure to disclose all the relevant facts, or misrepresentation in obtaining this permit.
- (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 permit shall not require revocation of this permit.
- (d) Noncompliance with orders issued pursuant to 326 IAC 1-5 (Episode Alert Levels) to reduce emissions during an air pollution episode.
- (e) For any cause which establishes in the judgment of IDEM, the fact that continuance of this permit is not consistent with purposes of 326 IAC 2-1 (Permit Review Rules).

Availability of Permit

6. Pursuant to 326 IAC 2-1-3(l), the Permittee shall maintain the applicable permit on the premises of this source and shall make this permit available for inspection by the IDEM, or other public official having jurisdiction.

Malfunction Condition

7. Pursuant to 326 IAC 1-6-2 (Records; Notice of Malfunction):
- (a) A record of all malfunctions, including startups or shutdowns of any facility or emission control equipment, which result in violations of applicable air pollution control regulations or applicable emission limitations shall be kept and retained for a period of three (3) years and shall be made available to the Indiana Department of Environmental Management (IDEM), Office of Air Management (OAM) or appointed representative upon request.
  - (b) When a malfunction of any facility or emission control equipment occurs which lasts more than one (1) hour, said condition shall be reported to OAM, using the Malfunction Report Forms (2 pages). Notification shall be made by telephone or facsimile, as soon as practicable, but in no event later than four (4) daytime business hours after the beginning of said occurrence.
  - (c) Failure to report a malfunction of any emission control equipment shall constitute a violation of 326 IAC 1-6, and any other applicable rules. Information of the scope and expected duration of the malfunction shall be provided, including the items specified in 326 IAC 1-6-2(a) (1) through (6).
  - (d) Malfunction is defined as any sudden, unavoidable failure of any air pollution control equipment, process, or combustion or process equipment to operate in a normal and usual manner. [326 IAC 1-2-39]

PSD Synthetic Minor Limit

8. (a) The input of VOC to the applicators, including cleanup solvents, at the combination of the one (1) robotic spray paint booth (U1), three (3) rollcoating booths (U1a, U1b and U1c), one (1) manual spray paint booth (U2), and seven (7) spray paint booths (U3, U4, U5, U6, U7,

U8, and U9) shall be limited to 3.24 tons per month, equivalent to 38.9 tons per year. This production limitation is equivalent to VOC emissions from the entire modification of no more than 3.25 tons per month, equivalent to 39.0 tons per year from the entire modification. Therefore, the Prevention of Significant Deterioration (PSD) rules, 326 IAC 2-2 and 40 CFR 52.21, will not apply.

- (b) Pursuant to 326 IAC 2-1-3(i)(8), records of surface coating quantities and organic solvent contents shall be maintained for a minimum period of 36 months and made available upon request of the Office of Air Management (OAM). Any change or modification which may increase VOC emissions to 40.0 tons per year from the equipment covered in this permit shall obtain a PSD permit pursuant to 326 IAC 2-2 before such change may occur.

Annual Emission Reporting

9. Pursuant to 326 IAC 2-6 (Emission Reporting), the Permittee must annually submit an emission statement for the source. This statement must be received by July 1 of each year and must comply with the minimum requirements specified in 326 IAC 2-6-4. A copy of this rule is enclosed. The annual statement must be submitted to:

Indiana Department of Environmental Management  
Technical Support and Modeling Section, Office of Air Management  
100 North Senate Avenue, P. O. Box 6015  
Indianapolis, Indiana 46206-6015

The annual emission statement covers the twelve (12) consecutive month time period starting January 1 and ending December 31.

Opacity Limitations

10. Pursuant to 326 IAC 5-1-2 (Visible Emission Limitations) except as provided in 326 IAC 5-1-3 (Temporary Exemptions), the visible emissions shall meet the following:
- (a) Visible emissions shall not exceed an average of 40 percent opacity in 24 consecutive readings.
- (b) Visible emissions shall not exceed 60 percent opacity for more than a cumulative total of 15 minutes (60 readings) in a 6-hour period.

Particulate Matter (PM) Limitation

11. Pursuant to 326 IAC 6-2-4 (Particulate Emission Limitations for Sources of Indirect Heating), particulate matter (PM) emissions from 3.6 million British thermal units per hour boiler shall not exceed 0.506 pounds per million British thermal units heat input. This allowable emission rate is based on the following equation:

$Pt = 1.09 / Q^{0.26}$  where: Pt = Pounds of particulate matter emitted per million British thermal units, and  
Q = Total source maximum operating capacity rating in million British thermal units per hour heat input.

Particulate Matter (PM) Limitation

12. (a) Pursuant to 326 IAC 6-3-2(c) (Process Operations), the dust collector shall be in operation

at all times when Finish Sander is in operation, and shall not exceed the allowable particulate matter (PM) emission rate of 3.09 pounds per hour when operating at a process weight rate of 1,312 pounds per hour. This allowable emission rate is based on the following equation:

$$E = 4.10P^{0.67} \quad \text{where: } E = \text{rate of emission in pounds per hour, and}$$
$$P = \text{process weight in tons per hour for } P \text{ less than 60,000}$$
$$\text{pounds per hour.}$$

(b) Pursuant to 326 IAC 6-3 (Process Operations):

- (1) The dry filters for overspray control shall be in operation at all times when the corresponding spray paint booths (U2, U3, U4, U5, U6, U7, U8 and U9) are in operation.
- (2) The water capture system shall be in operation at all times when the robotic spray paint booth (U1) is in operation.
- (3) The surface coating operations shall comply with 326 IAC 6-3-2(c) using the following equation:

$$E = 4.10P^{0.67} \quad \text{where: } E = \text{rate of emission in pounds per hour, and}$$
$$P = \text{process weight in tons per hour for } P \text{ less than 60,000}$$
$$\text{pounds per hour.}$$

- (4) Daily inspections shall be performed to verify the placement, integrity and particulate loading of the filters and water capture system.
- (5) Additional inspections and preventive measures shall be performed as prescribed in the Preventive Maintenance Plan.

Dust Collector Operating Condition

13. The dust collector (DC-UV) shall be operated at all times when the finish sander is in operation.

- (a) The Permittee shall take readings of the total static pressure drop across the dust collector, at least once per week while the finish sander is in operation and exhausting to the outside atmosphere. Unless operated under conditions for which the Preventive Maintenance Plan specifies otherwise, the pressure drop across the dust collector shall be maintained within the range of 1 and 4 inches of water. The Preventive Maintenance Plan for the dust collector shall contain troubleshooting contingency and corrective actions for the dust collector when the pressure reading is outside of this range for any one reading.
- (b) The instrument used for determining the pressure shall be subject to approval by IDEM, OAM, and shall be calibrated at least once every six (6) months.
- (c) The gauge employed to take the pressure drop across the dust collector or any part of the facility shall have a scale such that the expected normal reading shall be no less than 20 percent of full scale and be accurate within  $\pm 2$  percent of full scale reading. The instrument shall be quality assured and maintained as specified by the vendor.

- (d) An inspection shall be performed each calendar quarter of the dust collector. Defective dust collectors shall be replaced. A record shall be kept of the results of the inspection and the number of dust collectors replaced.
- (e) In the event that a dust collector's failure has been observed:
  - (i) The affected compartments will be shut down immediately until the failed units have been replaced.
  - (ii) Based upon the findings of the inspection, any additional corrective actions will be devised within eight (8) hours of discovery and will include a timetable for completion.

Visible Emission Notations

14. Visible emission notations of all exhaust to the atmosphere from the dust collector (DC-UV) shall be performed once per working shift. A trained employee will record whether emissions are normal or abnormal.
- (a) For processes operated continuously, "normal" means those conditions prevailing, or expected to prevail, 80 percent of the time the process is in operation, not counting start up or shut down time.
  - (b) In the case of batch or discontinuous operation, readings shall be taken during that part of the operation specified in the facility's specific condition prescribing visible emissions.
  - (c) A trained employee is an employee who has worked at the plant at least one (1) month and has been trained in the appearance and characteristics of normal and abnormal visible emissions for that specific process.
  - (d) The Preventive Maintenance Plan for this facility shall contain troubleshooting contingency and corrective actions for when an abnormal emission is observed.

Fugitive Dust Emissions

15. Pursuant to 326 IAC 6-4 (Fugitive Dust Emissions), the Permittee shall be in violation of 326 IAC 6-4 (Fugitive Dust Emissions) if any of the criteria specified in 326 IAC 6-4-2(1) through (4) are violated. Observations of visible emissions crossing the property line of the source at or near ground level must be made by a qualified representative of IDEM. [326 IAC 6-4-5(c)].

Volatile Organic Compound (VOC) Limitations

16. Pursuant to 326 IAC 8-2-12 (Wood Furniture and Cabinet coating), the surface coatings applied to wood furniture and/or wood components shall utilize one or more 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)  | Aerosol Spray Cans                     |

High-volume low-pressure spray is an acceptable alternative application of air-assisted airless spray. High-volume low-pressure (HVLP) spray means technology used to apply coating to a 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.

Wood Furniture NESHAP [40 CFR 63, Subpart JJ]

17. (a) The wood furniture coating operation is subject to the National Emission Standards for Hazardous Air Pollutants (NESHAP), 326 IAC 14, (40 CFR 63 Subpart JJ). A copy of this rule is attached. Pursuant to 40 CFR 63.800, Subpart JJ, the wood furniture coating operations shall comply with the following conditions:
- (1) Limit the Volatile Hazardous Air Pollutants (VHAP) emissions from finishing operations as follows:
    - (A) Achieve a weighted average volatile hazardous air pollutant (VHAP) content across all coatings of 1.0 pound VHAP per pound solids; or
    - (B) 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. Solvent and thinner mixtures used for other purposes have a ten percent (10%) maximum VHAP content by weight; or
    - (C) Use a control device to limit emissions to one (1.0) pound VHAP per pound solids; or
    - (D) Use a combination of (1), (2), and (3).
  - (2) Limit VHAP emissions from contact adhesives as follows:
    - (A) For foam adhesives used in products that meet the upholstered seating flammability requirements, the VHAP content shall not exceed one and eight-tenths (1.8) pound VHAP per pound solids.
    - (B) For all 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.
    - (C) Use a control device to limit emissions to one (1.0) pound VHAP per pound solids.
  - (3) The strippable spray booth material shall have a maximum VOC content of eight-tenths (0.8) pounds VOC per pound solids.
- (b) Pursuant to 40 CFR 63.803, the owner or operator of an affected source subject to this

subpart shall prepare and maintain a written work practice implementation plan within the first sixty (60) calendar days of startup. 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:

- (1) Operator training courses.
  - (2) Leak inspection and maintenance plan.
  - (3) Cleaning and washoff solvent accounting system.
  - (4) Chemical composition of cleaning and washoff solvents.
  - (5) Spray booth cleaning.
  - (6) Storage requirements.
  - (7) Conventional air spray guns shall only be used under the circumstances defined under 40 CFR 63.803(h).
  - (8) Line cleaning.
  - (9) Gun cleaning.
  - (10) Washoff operations.
  - (11) Formulation assessment plan for finishing operations.
- (c) Pursuant to 40 CFR 63, Subpart JJ, an Initial Compliance Report must be submitted within sixty (60) calendar days of startup and a Continuous Compliance Demonstration Report must be submitted within thirty (30) days following every six (6) month period, thereafter.

Reporting Requirements

18. A log of information necessary to document compliance with operation permit condition nos. 8 and 17 shall be maintained. These records shall include the coating, thinner and clean up solvent usage, the HAP content in pounds of VHAP per pound of solids, as applied, for all finishing materials, the VOC content in pounds of VOC per pound of solids, as applied, for each strippable coating used, the VHAP content in weight percent of each thinner used, material safety data sheet (MSDS) for all materials and the date of use. These records shall be kept for at least the past 36-month period and made available upon request to the Office of Air Management (OAM).

- (a) A quarterly summary shall be submitted to:

Indiana Department of Environmental Management  
Compliance Data Section, Office of Air Management  
100 North Senate Avenue, P.O. Box 6015  
Indianapolis, Indiana 46206-6015

within 30 days after the end of the quarter being reported in the format attached. These reports shall include VOC usage by the surface coating facilities (U1a, U1b, U1c, U1, U2, U3, U4, U5, U6, U7, U8 and U9) in tons per month.

- (b) An Initial Compliance Report to document compliance with Operation Condition 17, and the Certification form, shall be submitted within sixty (60) calendar days of startup to:

Indiana Department of Environmental Management  
Compliance Data Section, Office of Air Management  
100 North Senate Avenue, P.O. Box 6015  
Indianapolis, Indiana 46206-6015

- (c) A semi-annual Continuous Compliance Report to document compliance with Operation Condition 17, and the Certification form, shall be submitted within thirty (30) days after the end of each six (6) months being reported to:

Indiana Department of Environmental Management  
Compliance Data Section, Office of Air Management  
100 North Senate Avenue, P.O. Box 6015  
Indianapolis, Indiana 46206-6015

The six (6) month period shall begin on the first day of the month after which the operation commences.

- (d) Unless otherwise specified in this permit, any notice, report, or other submissions required by this permit shall be timely if:
- (i) Delivered by U.S. mail and postmarked on or before the date it is due; or
  - (ii) Delivered by any other method if it is received and stamped by IDEM, OAM, on or before the date it is due.
- (e) All instances of deviations from any requirements of this permit must be clearly identified in such reports.
- (f) Any corrective actions taken as a result of an exceedance of a limit, an excursion from the parametric values, or a malfunction that may have caused excess emissions must be clearly identified in such reports.
- (g) The first report shall cover the period commencing the postmarked submission date of the Affidavit of Construction.

Open Burning

19. The permittee 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.

Emergency Reduction Plans

20. Pursuant to 326 IAC 1-5-2 (Emergency Reduction Plans; Submission):

- (a) The Permittee shall prepare written emergency reduction plans (ERPs) consistent with safe operating procedures.
- (b) These ERPs shall be submitted for approval to:

Indiana Department of Environmental Management  
Compliance Branch, Office of Air Management  
100 North Senate Avenue, P.O. Box 6015  
Indianapolis, Indiana 46206-6015

within 180 calendar days from the issuance date of this permit.

- (c) If the ERP is disapproved by IDEM, OAM, the Permittee shall have an additional thirty (30) days to resolve the differences and submit an approvable ERP. If after this time, the Permittee does not submit an approvable ERP, IDEM, OAM, shall supply such a plan.
- (d) These ERPs shall state those actions that will be taken, when each episode level is declared, to reduce or eliminate emissions of the appropriate air pollutants.
- (e) Said ERPs shall also identify the sources of air pollutants, the approximate amount of reduction of the pollutants, and a brief description of the manner in which the reduction will be achieved.
- (f) Upon direct notification by IDEM, OAM, that a specific air pollution episode level is in effect, the Permittee shall immediately put into effect the actions stipulated in the approved ERP for the appropriate level. [326 IAC 1-5-3]

**MALFUNCTION REPORT**

**INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT  
OFFICE OF AIR MANAGEMENT  
FAX NUMBER - 317 233-5967**

**This form should only be used to report malfunctions applicable to Rule 326 IAC 1-6  
and to qualify for the exemption under 326 IAC 1-6-4.**

THIS FACILITY MEETS THE APPLICABILITY REQUIREMENTS BECAUSE: IT HAS POTENTIAL TO EMIT 25 LBS/HR PARTICULATES ?\_\_\_\_, 100 LBS/HR VOC ?\_\_\_\_, 100 LBS/HR SULFUR DIOXIDE ?\_\_\_\_ OR 2000 LBS/HR OF ANY OTHER POLLUTANT ?\_\_\_\_ EMISSIONS FROM MALFUNCTIONING CONTROL EQUIPMENT OR PROCESS EQUIPMENT CAUSED EMISSIONS IN EXCESS OF APPLICABLE LIMITATION \_\_\_\_\_.

THIS MALFUNCTION RESULTED IN A VIOLATION OF: 326 IAC \_\_\_\_\_ OR, PERMIT CONDITION # \_\_\_\_\_ AND/OR PERMIT LIMIT OF \_\_\_\_\_

THIS INCIDENT MEETS THE DEFINITION OF 'MALFUNCTION' AS LISTED ON REVERSE SIDE ?    Y        N

THIS MALFUNCTION IS OR WILL BE LONGER THAN THE ONE (1) HOUR REPORTING REQUIREMENT ?    Y        N

COMPANY: \_\_\_\_\_ Paoli, Inc. \_\_\_\_\_ PHONE NO. \_\_\_\_\_ 812 - 865 - 3898 \_\_\_\_\_

LOCATION: (CITY AND COUNTY) \_\_\_\_\_ Orleans / Orange \_\_\_\_\_

PERMIT NO. \_\_\_\_\_ 117-9309 \_\_\_\_\_ AFS PLANT ID: \_\_\_\_\_ 117-00014 \_\_\_\_\_ AFS POINT ID: \_\_\_\_\_ INSP: \_\_\_\_\_

CONTROL/PROCESS DEVICE WHICH MALFUNCTIONED AND REASON: \_\_\_\_\_

DATE/TIME MALFUNCTION STARTED: \_\_\_\_/\_\_\_\_/ 19\_\_\_\_ \_\_\_\_\_ AM / PM

ESTIMATED HOURS OF OPERATION WITH MALFUNCTION CONDITION: \_\_\_\_\_

DATE/TIME CONTROL EQUIPMENT BACK-IN SERVICE \_\_\_\_/\_\_\_\_/ 19\_\_\_\_ \_\_\_\_\_ AM/PM

TYPE OF POLLUTANTS EMITTED: TSP, PM-10, SO2, VOC, OTHER: \_\_\_\_\_

ESTIMATED AMOUNT OF POLLUTANT EMITTED DURING MALFUNCTION: \_\_\_\_\_

MEASURES TAKEN TO MINIMIZE EMISSIONS: \_\_\_\_\_

REASONS WHY FACILITY CANNOT BE SHUTDOWN DURING REPAIRS:

CONTINUED OPERATION REQUIRED TO PROVIDE ESSENTIAL\* SERVICES: \_\_\_\_\_

CONTINUED OPERATION NECESSARY TO PREVENT INJURY TO PERSONS: \_\_\_\_\_

CONTINUED OPERATION NECESSARY TO PREVENT SEVERE DAMAGE TO EQUIPMENT: \_\_\_\_\_

INTERIM CONTROL MEASURES: (IF APPLICABLE) \_\_\_\_\_

MALFUNCTION REPORTED BY: \_\_\_\_\_ (SIGNATURE IF FAXED) TITLE: \_\_\_\_\_

MALFUNCTION RECORDED BY: \_\_\_\_\_ DATE: \_\_\_\_\_ TIME: \_\_\_\_\_

Paoli, Inc.  
Orleans, Indiana  
Permit Reviewer: MES

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Plt ID 117-00014

**Please note - This form should only be used to report malfunctions applicable to Rule 326 IAC 1-6 and to qualify for the exemption under 326 IAC 1-6-4.**

**326 IAC 1-6-1    Applicability of rule**

Sec. 1. The requirements of this rule (326 IAC 1-6) shall apply to the owner or operator of any facility which has the potential to emit twenty-five (25) pounds per hour of particulates, one hundred (100) pounds per hour of volatile organic compounds or SO<sub>2</sub>, or two thousand (2,000) pounds per hour of any other pollutant; or to the owner or operator of any facility with emission control equipment which suffers a malfunction that causes emissions in excess of the applicable limitation.

**326 IAC 1-2-39    "Malfunction" definition**

Sec. 39. Any sudden, unavoidable failure of any air pollution control equipment, process, or combustion or process equipment to operate in a normal and usual manner. (Air Pollution Control Board; 326 IAC 1-2-39; filed Mar 10, 1988, 1:20 p.m.: 11 IR 2373)

**\*Essential services** are interpreted to mean those operations, such as, the providing of electricity by power plants. Continued operation solely for the economic benefit of the owner or operator shall not be sufficient reason why a facility cannot be shutdown during a control equipment shutdown.

If this item is checked on the front, please explain rationale:

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**INDIANA DEPARTMENT OF ENVIRONMENTAL MANAGEMENT  
OFFICE OF AIR MANAGEMENT  
COMPLIANCE DATA SECTION**

**FESOP Quarterly Report**

Source Name: Paoli, Inc.  
Source Address: 201 E. Martin Street, Orleans, Indiana 47452  
Mailing Address: P.O. Box 30, Paoli, IN 47454  
CP: 117-9309-00014  
Facilities: One (1) robotic spray paint booth (U1), three (3) rollcoating booths (U1a, U1b, and U1c), one (1) manual spray paint booth (U2), and seven (7) spray paint booths (U3, U4, U5, U6, U7, U8 and U9).  
Parameter: VOC usage  
Limit: 3.24 tons per month

YEAR: \_\_\_\_\_

Month	VOC Usage (tons)

9 No deviation occurred in this quarter.

9 Deviation/s occurred in this quarter.  
Deviation has been reported on: \_\_\_\_\_

Submitted by: \_\_\_\_\_

Title / Position: \_\_\_\_\_

Signature: \_\_\_\_\_

Date: \_\_\_\_\_

Phone: \_\_\_\_\_

Indiana Department of Environmental Management  
Office of Air Management

## Technical Support Document (TSD) for New Construction and Operation

### Source Background and Description

Source Name:	Paoli, Inc.
Source Location:	201 E. Martin Street, Orleans, Indiana 47452
County:	Orange
Construction Permit No.:	CP 117-9309-00014
SIC Code:	2521
Permit Reviewer:	CarrieAnn Ortolani

The Office of Air Management (OAM) has reviewed an application from Paoli, Inc. relating to the construction and operation of a modification to the existing major source. The proposed modification is the addition of a UV coating system with support facilities, consisting of the following equipment:

- (a) One (1) natural gas-fired boiler, identified as B2, maximum heat input capacity: 3.6 million British thermal units per hour.
- (b) One (1) natural gas-fired drying oven, identified as O21, maximum heat input capacity: 0.5 million British thermal units per hour.
- (c) One (1) finish sander, identified as DC-UV, equipped with a dust collector, maximum capacity: 1,250 pounds of wood laminate and 61.8 pounds of coating per hour.
- (d) One (1) robotic spray paint booth, identified as U1, equipped with air assisted airless robotic spray guns and a water capture system for overspray control, capacity: 25 wood desk tops per hour.
- (e) Three (3) rollcoating booths, identified as U1a, U1b, and U1c, equipped with UV Cure Lamps, capacity: 25 wood desk tops per hour, each.
- (f) One (1) manual spray paint booth, identified as U2, equipped with high volume, low pressure (HVLP) manual spray guns and dry filters for overspray control, capacity: 25 wood desk tops per hour.
- (g) Seven (7) spray paint booths, identified as U3, U4, U5, U6, U7, U8 and U9, equipped with high volume, low pressure (HVLP) spray guns and dry filters for overspray control, capacity of U3, U4, U5, U6, U7 and U8: 25 wood desk tops per hour, each; capacity of U9: 1.25 wood desk tops per hour.

**Stack Summary**

Stack ID	Operation	Height (feet)	Diameter (feet)	Flow Rate (acfm)	Temperature (°F)
U1	robotic spray paint booth (U1)	28	1.3	12,000	70
U1a	rollcoat booth and cure lamp (U1a)	28	0.50	1,177	100
U1b	rollcoat booth and cure lamp (U1b)	28	0.50	1,177	100
U1c	rollcoat booth and cure lamp (U1c)	28	0.50	1,177	100
U1ca	rollcoat booth and cure lamp (U1c)	28	0.50	1,177	100
U2	manual spray paint booth (U2)	28	0.95	7,946	70
U2a	manual spray paint booth (U2)	28	0.95	7,946	70
U3	spray paint booth (U3)	28	1.25	10,800	70
U4	spray paint booth (U4)	28	1.25	10,800	70
U5	spray paint booth (U5)	28	1.25	10,800	70
U6	spray paint booth (U6)	28	1.25	10,800	70
U7	spray paint booth (U7)	28	1.25	10,800	70
U8	spray paint booth (U8)	28	1.25	10,800	70
U9	spray paint booth (U9)	28	1.25	10,800	70
B2	boiler (B2)	28	0.67	700	250
O21	drying oven (O21)	28	0.67	1,500	130
DC-UV	finish sander and dust collector (DC-UV)	not yet available	not yet available	22,187	70

**Enforcement Issue**

There are no enforcement actions pending.

**Recommendation**

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

- (a) Information, unless otherwise stated, used in this review was derived from the application and additional information submitted by the applicant.
- (b) An application for the purposes of this review was received on December 16, 1997, with additional information received on January 16, 1998 and January 23, 1998, via facsimile.

### Emissions Calculations

See pages 1 through 4 of 4 of Appendix A (Emissions Calculation Spreadsheets) for detailed calculations.

### Total Potential and Allowable Emissions

Indiana Permit Allowable Emissions Definition (after compliance with applicable rules, based on 8,760 hours of operation per year at rated capacity):

Pollutant	Allowable Emissions (tons/yr)	Potential Emissions (tons/yr)
Particulate Matter (PM)	16.4	92.8
Particulate Matter (PM <sub>10</sub> )	16.4	92.8
Sulfur Dioxide (SO <sub>2</sub> )	0.010	0.010
Volatile Organic Compounds (VOC)	188	188
Carbon Monoxide (CO)	0.377	0.377
Nitrogen Oxides (NO <sub>x</sub> )	1.80	1.80
Single Hazardous Air Pollutant (HAP)	4.58	4.58
Combination of HAPs	8.70	8.70

- (a) Allowable emissions are determined from the applicability of rule 326 IAC 6-3 and 6-2. See pages 1, 3 and 4 of attached spreadsheets for detailed calculations.
- (b) The allowable emissions based on the rules cited are less than the potential emissions, therefore, the allowable emissions are used for the permitting determination.
- (c) Allowable emissions (as defined in the Indiana Rule) of VOC are greater than 25 tons per year. Therefore, pursuant to 326 IAC 2-1, Sections 1 and 3, a construction permit is required.

### County Attainment Status

- (a) Volatile organic compounds (VOC) and oxides of nitrogen (NO<sub>x</sub>) are precursors for the formation of ozone. Therefore, VOC and NO<sub>x</sub> emissions are considered when evaluating the rule applicability relating to the ozone standards. Orange County has been designated as attainment or unclassifiable for ozone. Therefore, VOC and NO<sub>x</sub> emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2 and 40 CFR 52.21.

- (b) Orange County has been classified as attainment or unclassifiable for all remaining criteria pollutants. Therefore, these emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2 and 40 CFR 52.21.
- (c) Fugitive Emissions  
 Since this type of operation is not one of the 28 listed source categories under 326 IAC 2-2 and since there are no applicable New Source Performance Standards that were in effect on August 7, 1980, the fugitive PM emissions are not counted toward determination of PSD applicability.

**Source Status**

Existing Source PSD Definition (emissions after controls, based on 8,760 hours of operation per year at rated capacity and/ or as otherwise limited):

Pollutant	Emissions (tons/yr)
PM	0.171
PM <sub>10</sub>	0.171
SO <sub>2</sub>	0.008
VOC	300
CO	0.270
NO <sub>x</sub>	1.35

- (a) This existing source is a major stationary source because at least one attainment regulated pollutant is emitted at a rate of 250 tons per year.
- (b) These emissions were based on the AIRS Facility Quick Look Report, dated July 24, 1997.

**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 (tons/yr)	PM <sub>10</sub> (tons/yr)	SO <sub>2</sub> (tons/yr)	VOC (tons/yr)	CO (tons/yr)	NO <sub>x</sub> (tons/yr)
Proposed Modification	0.771	0.771	0.010	39.0	0.377	1.80
Contemporaneous Increases	0.0	0.0	0.0	0.0	0.0	0.0
Contemporaneous Decreases	0.0	0.0	0.0	0.0	0.0	0.0
Net Emissions	0.771	0.771	0.010	39.0	0.377	1.80
PSD Significant Level	25	15	40	40	100	40

This proposed modification to an existing major stationary source is not major because the emissions increase is less than the PSD significant levels. The VOC emissions from the entire modification are limited to 39.0 tons per year. Therefore, pursuant to 326 IAC 2-2, and 40 CFR 52.21, the PSD requirements do not apply.

### **Part 70 Permit Determination**

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

This existing source has submitted their Part 70 (T-117-6003-00014) application on May 31, 1996. The equipment being reviewed under this permit shall be incorporated in the submitted Part 70 application.

### **Federal Rule Applicability**

- (a) There are no New Source Performance Standards (326 IAC 12) and 40 CFR Part 63 applicable to this facility.
- (b) Since the wood coating operations use less than 5 tons of any one HAP per rolling 12 month period and less than 12.5 tons of any combination of HAPs per rolling 12 month period and at least ninety percent (90%) of the plantwide emissions per rolling 12 month period are from wood furniture manufacturing, this modification is not subject to the National Emission Standards for Hazardous Air Pollutants (NESHAP) for Wood Furniture Manufacturing Operations (40 CFR 63.800, Subpart JJ). The owner or operator will be required to maintain records that demonstrate that annual emissions from the facilities covered in this permit do not exceed these levels, including monthly usage records for all finishing, gluing, cleaning, and washoff materials, and certified product data sheets for these materials. These records must be kept for five (5) years and must be made available to IDEM, OAM upon request. Should the modification exceed the emissions specified above at any time, the modification will become subject to the National Emission Standards for Hazardous Air Pollutants (NESHAP) for Wood Furniture Manufacturing Operations, 326 IAC 14, (40 CFR 63.800, Subpart JJ). A copy of this rule is attached to the permit.

### **State Rule Applicability**

#### 326 IAC 2-1-3.4 (New Source Air Toxics Control)

These facilities are not subject to 326 IAC 2-1-3.4 (New Source Air Toxics Control) because this modification is not a major source of HAPs.

#### 326 IAC 2-2 (PSD)

The potential VOC emissions from combustion are 0.096 tons per year. The potential VOC emissions from the surface coating facilities are 188 tons per year. In order to avoid PSD, the source has agreed to a VOC limit of 39.0 tons per year. This limit will be enforced by a VOC usage limit of 3.24 tons per month, equivalent 38.9 tons per year, at the surface coating facilities (U1a, U1b, U1c, U1, U2, U3, U4, U5, U6, U7, U8 and U9).

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326 IAC 2-6 (Emission Reporting)

- (a) This modification is not subject to 326 IAC 2-6 (Emission Reporting), because the modification emits less than 100 tons per year of VOC in Orange County.
- (b) The entire source is subject to 326 IAC 2-6 (Emission Reporting), because the source emits more than 100 tons per year of VOC. Pursuant to this rule, the owner/operator of this facility must annually submit an emission statement of the facility. The annual statement must be received by July 1 of each year and must contain the minimum requirements as specified in 326 IAC 2-6-4.

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

The 3.6 rating million British thermal units per hour natural gas-fired boiler is subject 326 IAC 6-2-4 (Particulate Emissions Limitations for Sources of Indirect Heating). Pursuant to 326 IAC 6-2-4, the particulate matter (PM) emissions shall be limited to 0.506 pounds per million British thermal units heat input. This limit is based on the following equations:

$Pt = 1.09 / Q^{0.26}$  where: Pt = Pounds of particulate matter emitted per million British thermal units, and  
Q = Total source maximum operating capacity rating in million British thermal units per hour heat input = (3.6 (B2) + 15.57 (B1)) MMBtu/hr = 19.17 MMBtu/hr.

$Pt = 1.09 / 19.17^{0.26} = 0.506$  pounds per million British thermal units

Allowable PM emissions = (0.506 lb/MMBTU)\*(3.6 MMBTU/hr)\*(8760 hr/yr)\*(1 ton/2000 lbs) = 7.98 tons/year

Based on these calculations, the controlled potential PM emissions of 0.189 tons per year are less than the 7.98 tons of PM per year calculated using the allowable emissions, therefore, this boiler (B2) complies with the rule.

326 IAC 6-3-2 (Particulate Emission Limitations)

- (a) The spray painting operations are subject to 326 IAC 6-3-2(c). The particulate matter (PM) overspray from the one (1) robotic spray paint booth (U1), one (1) manual spray paint booth (U2), and seven (7) spray paint booths (U3, U4, U5, U6, U7, U8, and U9) 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.

Compliance will be demonstrated by operating dry filters at all times when the corresponding spray paint booths (U2, U3, U4, U5, U6, U7, U8 and U9) are in operation and the water capture system at all times when the robotic spray paint booth (U1) is in operation.

- (b) The finish sander (DC-UV) is subject to 326 IAC 6-3-2(c). When operating at full capacity the process weight rate is 1,250 pounds per hour of wood laminate and 61.8 pounds per hour of coating resulting in a total process weight rate of 1,312 pounds per hour, equivalent to 0.656 tons per year. The allowable emissions based on this process weight rate is 3.09 pounds of PM per hour. Since the potential PM emissions after controls are 0.002 pounds per hour, the finish sander will comply with the rule. The emission limitations are based upon the following equation:

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

$$E = 4.10 (0.656 \text{ tons/hr})^{0.67} = 3.09 \text{ pounds per hour.}$$

Compliance will be demonstrated by operating the dust collector at all times when the finish sander is in operation. See page 3 of 4 of Appendix A for detailed calculations.

#### 326 IAC 8-2-12 (Surface Coating Emission Limitations: Wood Furniture and Cabinet Coating)

Since these wood desk top coating facilities operate in series and have the potential to emit more than 25 tons per year of VOC, 326 IAC 8-2-12 is applicable. This rule requires that the owner/operator of a wood furniture or cabinet coating operation apply all coating material, with the exception of no more than ten (10) gallons of coating per day used for touch-up and repairs, 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)	Aerosol Spray Cans

High-volume low-pressure spray is an acceptable alternative application of air-assisted airless spray. High-volume low-pressure (HVLP) spray means technology used to apply coating to a 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.

Since the facilities U2, U3, U4, U5, U6, U7, U8 and U9 use high volume, low pressure (HVLP) spray guns which are considered the equivalent of the airless application system, facilities U1a, U1b and U1c use roller coat, and facility U1 uses air-assisted airless spray guns, all facilities will comply with this rule.

#### Air Toxic Emissions

Indiana presently requests applicants to provide information on emissions of the 187 hazardous air pollutants 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) Construction Permit Application Form Y.

- (a) This modification will emit levels of air toxics less than those which constitute a major source

according to Section 112 of the 1990 Amendments to the Clean Air Act.

- (b) See page 2 of 4 of Appendix A for detailed air toxic calculations.

### **Conclusion**

The construction of this addition of a UV coating system with support facilities will be subject to the conditions of the attached proposed **Construction Permit No. CP 117-9309-00014**.

**Appendix A: Emission Calculations  
Dust Collector Operations**

**Company Name: Paoli, Inc.  
Address City IN Zip: 201 East Martin Street, Orleans, IN 47452  
CP: 117-9309  
Plt ID: 117-00014  
Reviewer: CarrieAnn Ortolani  
Date: December 16, 1997**

**Finish Sander with Dust Collector**

Control Efficiency

99.99%

Pollutant	Grain Loading per Actual Cubic foot of Outlet Air (grains/cub. ft.)	Total Filter Area (sq. ft.)	Air to Cloth Ratio (acfm/sq. ft.)	Emission Rate before Controls (lb/hr)	Emission Rate before Controls (tons/yr)	Emission Rate after Controls (lb/hr)	Emission Rate after Controls (tons/yr)
TSP	0.00001	16256	1.3	18.1	79.3	0.002	0.008
PM10	0.00001	16256	1.3	18.1	79.3	0.002	0.008

**Methodology**

Emission Rate in lbs/hr (after controls) = (grains/cub. ft.) (sq. ft.) ((cub. ft./min.)/sq. ft.) (60 min/hr) (lb/7000 grains)

Emission Rate in tons/yr = (lbs/hr) (8760 hr/yr) (ton/2000 lb)

Emission Rate in lbs/hr (before controls) = Emission Rate (after controls): (lbs/hr)/(1-control efficiency)

**Allowable Rate of Emissions based on 326 IAC 6-3-2**

Process Rate (lbs/hr)	Process Weight Rate (tons/hr)	Allowable Emissions (lbs/hr)
1312	0.656	3.09

**Methodology**

Allowable Emissions = 4.10(Process Weight Rate)<sup>0.67</sup>

**Appendix A: Emission Calculations  
Natural Gas Combustion Only  
MM Btu/hr 0.3 - < 10  
Commercial Boiler**

**Company Name:** Paoli, Inc.  
**Address City IN Zip:** 201 East Martin Street, Orleans, IN 47452  
**CP:** 117-9309  
**Plt ID:** 117-00014  
**Reviewer:** CarrieAnn Ortolani  
**Date:** December 16, 1997

**Boiler (B2)**

Heat Input Capacity  
MMBtu/hr

Potential Throughput  
MMCF/yr

3.6

31.5

Pollutant

	PM	PM10	SO2	NOx	VOC	CO
Emission Factor in lb/MMCF	12.0	12.0	0.6	100.0	5.3	21.0
Potential Emission in tons/yr	0.189	0.189	0.009	1.58	0.084	0.331

**Allowable Rate of Emissions based on 326 IAC 6-2-4**

Total Source Capacity (MMBtu/hr)	Allowable Emissions (lbs/hr)
19.17	0.506

**Limit Methodology**

Allowable Emissions = 1.09/(Total Source Heat Input Capacity)<sup>0.26</sup>

**Drying Oven (O21)**

Heat Input Capacity  
MMBtu/hr

Potential Throughput  
MMCF/yr

0.5

4.38

Pollutant

	PM	PM10	SO2	NOx	VOC	CO
Emission Factor in lb/MMCF	12.0	12.0	0.6	100.0	5.3	21.0
Potential Emission in tons/yr	0.026	0.026	0.001	0.219	0.012	0.046

**Methodology**

MMBtu = 1,000,000 Btu

MMCF = 1,000,000 Cubic Feet of Gas

Emission Factors for NOx: uncontrolled = 100, Low NOx Burner = 17, Flue gas recirculation = 36

Emission Factors for CO: uncontrolled = 21, Low NOx Burner = 27, Flue gas recirculation = ND

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

Emission Factors from AP 42, Chapter 1.4, Tables 1.4-1, 1.4-2, and 1.4-3, SCC #1-03-006-03

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

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

**Company Name: Paoli, Inc.  
Address City IN Zip: 201 East Martin Street, Orleans, IN 47452  
CP: 117-9309  
Pit ID: 117-00014  
Reviewer: CarrieAnn Ortolani  
Date: December 16, 1997**

Stack ID	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)	Flash-off (fraction)	Pounds VOC per gallon of coating less water	Pounds VOC per gallon of coating	Potential VOC pounds per hour	Potential VOC pounds per day	Potential VOC tons per year	Particulate Potential tons per year	lb VOC /gal solids	Transfer Efficiency	
U1a, U1b, U1c, U1ca **	Urethane UV Sealer	9.20	0.26%	0.00%	0.26%	0.00%	99.45%	0.03125	75.000	1.000	0.02	0.02	0.06	1.35	0.25	0.00	0.02	100%	
U1 or U2 and U2a	Sprayable UV Topcoat	8.21	50.00%	0.00%	50.0%	0.00%	42.10%	0.04688	25.000	1.000	4.11	4.11	4.81	115	21.1	5.27	9.75	75%	
U4	Sealer	7.60	75.87%	0.00%	75.9%	0.00%	17.74%	0.03720	25.000	1.000	5.77	5.77	5.36	128.70	23.49	1.87	32.50	75%	
U4	Catalyst	9.06	39.00%	0.00%	39.0%	0.00%	46.35%	0.00833	25.000	1.000	3.53	3.53	0.74	17.66	3.22	1.26	7.62	75%	
U4	(1) R-T-S	7.87	69.12%	0.00%	69.1%	0.00%	22.97%	0.04553	25.000	1.000	5.44	5.44	6.19	149	27.1	3.03	23.68	75%	
U5	#35 Walnut Filler	13.33	16.97%	0.00%	17.0%	0.00%	65.53%	0.00833	25.000	1.000	2.26	2.26	0.47	11.3	2.06	2.52	3.45	75%	
U5	#10 Mahogany Wipe Stain	8.10	53.81%	0.00%	53.8%	0.00%	32.83%	0.00071	25.000	1.000	4.36	4.36	0.08	1.86	0.34	0.07	13.28	75%	
U6	VHC Pre-Cat Washcoat	7.18	88.03%	0.00%	88.0%	0.00%	8.29%	0.00900	25.000	1.000	6.32	6.32	1.42	34.13	6.23	0.21	76.24	75%	
U6	Catalyst	9.06	39.00%	0.00%	39.0%	0.00%	46.35%	0.00067	25.000	1.000	3.53	3.53	0.06	1.42	0.26	0.10	7.62	75%	
U6	(1) R-T-S	7.31	84.63%	0.00%	84.6%	0.00%	10.93%	0.00967	25.000	1.000	6.19	6.19	1.50	35.9	6.55	0.30	56.60	75%	
U3, U7, U9 **	VHC #10 Mahogany NGR Stain	6.82	94.00%	2.96%	91.0%	2.42%	4.09%	0.08725	51.250	1.000	6.36	6.21	27.8	666	122	2.00	152	75%	
U8	VHC #35 Walnut SAP Stain	6.69	97.31%	1.90%	95.4%	1.53%	1.71%	0.01358	25.000	1.000	6.48	6.38	2.17	52.0	9.49	0.07	373	75%	
												43.0	1033	188	13.3				

\*\* = indicates that the number of units per hour is the total for three (3) separate booths in series

**State Potential Emissions Add worst case coating to all solvents**

Control Technology Emissions (Combustion)		Emission Factors										Emissions					
Type	Number	Capacity	Gas usage	PM	PM10	SO2	NOx	VOC	CO	PM	PM10	SO2	NOx	VOC	CO		
		MMBtu/hr	MMCF/yr	lb/MMCF	lb/MMCF	lb/MMCF	lb/MMCF	lb/MMCF	lb/MMCF	tons/yr	tons/yr	tons/yr	tons/yr	tons/yr	tons/yr		
Catalytic			0.0	3.0	3.0	0.6	100.0	5.3	35.0	0.0	0.0	0.0	0.0	0.0	0.0		
Thermal			0.0	3.0	3.0	0.6	140.0	2.8	20.0	0.0	0.0	0.0	0.0	0.0	0.0		
Total			0.0							0.0	0.0	0.0	0.0	0.0	0.0		
										Control Efficiency							
										VOC	PM	Controlled	Controlled	Controlled	Controlled		
										0.00	0.98	VOC pounds	VOC pounds	VOC	Particulate		
										0.00	0.00	per hour	per day	tons/yr	tons/yr		
										0.00	0.80						
Controlled Emissions due to Surface Coating Operations and Controls										43.0	1033	188	2.65				

**METHODOLOGY**

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) \* Flash-off  
 Potential VOC Pounds per Day = Pounds of VOC per Gallon coating (lb/gal) \* Gal of Material (gal/unit) \* Maximum (units/hr) \* (24 hr/day) \* Flash-off  
 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) \* Flash-off  
 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) \* Flash-off  
 Total = Worst Coating + Sum of all solvents used

**HAP Emission Calculations**

**Company Name:** Paoli, Inc.  
**Address City IN Zip:** 201 East Martin Street, Orleans, IN 47452  
**CP:** 117-9309  
**Plt ID:** 117-00014  
**Reviewer:** CarrieAnn Ortolani  
**Date:** December 16, 1997

Stack ID	Material	Density (lb/gal)	Gal of Mat (gal/unit)	Maximum (unit/hour)	Flash-off (fraction)	Weight % Ethyl benzene	Weight % Toluene	Weight % Formaldehyde	Weight % Methanol	Weight % Xylene	Weight % Cumene	Ethyl benzene Emissions (tons/yr)	Toluene Emissions (tons/yr)	Formaldehyde Emissions (tons/yr)	Methanol Emissions (tons/yr)	Xylene Emissions (tons/yr)	Cumene Emissions (tons/yr)	Total HAPs (tons/yr)	
U1a, U1b, U1c, U1ca **	Urethane UV Sealer	9.20	0.03125	75.000	1.00	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	<b>0.00</b>
U1 or U2 and U2a	Sprayable UV Topcoat	8.21	0.04688	25.000	1.00	0.00%	0.066%	0.00%	0.00%	0.00%	0.00%	0.00	0.03	0.00	0.00	0.00	0.00	0.00	<b>0.03</b>
U4	Sealer	7.60	0.03720	25.000	1.00	0.48%	0.00%	0.18%	0.00%	6.15%	0.00%	0.15	0.00	0.06	0.00	1.90	0.00	0.00	<b>2.11</b>
U4	Catalyst	9.06	0.00833	25.000	1.00	0.00%	0.00%	0.00%	51.28%	0.00%	0.00%	0.00	0.00	0.00	4.24	0.00	0.00	0.00	<b>4.24</b>
U4	(1) R-T-S	7.87	0.04553	25.000	1.00	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	<b>0.00</b>
U5	#35 Walnut Filler	13.33	0.00833	25.000	1.00	0.07%	10.00%	0.00%	0.00%	0.35%	0.06%	0.01	1.22	0.00	0.00	0.04	0.01	0.01	<b>1.27</b>
U5	#10 Mahogany Wipe Stain	8.10	0.00071	25.000	1.00	0.26%	1.14%	0.00%	0.00%	1.33%	0.09%	0.00	0.01	0.00	0.00	0.01	0.00	0.00	<b>0.02</b>
U6	VHC Pre-Cat Washcoat	7.18	0.00900	25.000	1.00	0.00%	2.77%	0.09%	0.04%	7.00%	0.00%	0.00	0.20	0.01	0.00	0.50	0.00	0.00	<b>0.70</b>
U6	Catalyst	9.06	0.00067	25.000	1.00	0.00%	0.00%	0.00%	51.28%	0.00%	0.00%	0.00	0.00	0.00	0.34	0.00	0.00	0.00	<b>0.34</b>
U6	(1) R-T-S	7.31	0.00967	25.000	1.00	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	<b>0.00</b>
U3, U7, U9 **	VHC #10 Mahogany NGR Stain	6.82	0.08725	51.250	1.00	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	<b>0.00</b>
U8	VHC #35 Walnut SAP Stain	6.69	0.01358	25.000	1.00	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00	0.00	0.00	0.00	0.00	0.00	0.00	<b>0.00</b>

Total State Potential Emissions

<b>TOTALS:</b>	<b>(tons/yr):</b>	<b>0.159</b>	<b>1.45</b>	<b>0.062</b>	<b>4.58</b>	<b>2.45</b>	<b>0.008</b>	<b>8.70</b>
	<b>(lb/hr):</b>	<b>0.036</b>	<b>0.331</b>	<b>0.014</b>	<b>1.05</b>	<b>0.560</b>	<b>0.002</b>	<b>1.99</b>
	<b>(g/sec):</b>	<b>0.005</b>	<b>0.042</b>	<b>0.002</b>	<b>0.132</b>	<b>0.071</b>	<b>0.0002</b>	<b>0.25</b>

**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

## Indiana Department of Environmental Management Office of Air Management

### Addendum to the Technical Support Document for New Construction and Operation

Source Name: Paoli, Inc.  
Source Location: 201 E. Martin Street, Orleans, Indiana 47452  
County: Orange  
Construction Permit No.: CP 117-9309-00014  
SIC Code: 2521  
Permit Reviewer: CarrieAnn Ortolani

On February 10, 1998, the Office of Air Management (OAM) had a notice published in the Paoli News Republican, Paoli, Indiana, stating that Paoli, Inc. had applied for a construction permit to construct and operate an UV coating system with support facilities at the existing source, with a dust collector, a water capture system and dry filters as air pollution controls. The notice also stated that OAM proposed to issue a permit for this installation and provided information on how the public could review the proposed permit and other documentation. Finally, the notice informed interested parties that there was a period of thirty (30) days to provide comments on whether or not this permit should be issued as proposed.

Upon further review IDEM, OAM, has decided to make the following changes:

- (a) In Operation Condition 13(a), page 6 of 12 (now page 6 of 14), daily checks are not necessary for this type of unit. The monitoring frequency has been changed from daily to weekly.

Operation Condition 13(a) was originally:

The Permittee shall take readings of the total static pressure drop across the dust collector, at least once per day while the finish sander is in operation and exhausting to the outside atmosphere. Unless operated under conditions for which the Preventive Maintenance Plan specifies otherwise, the pressure drop across the dust collector shall be maintained within the range of 1 and 4 inches of water. The Preventive Maintenance Plan for the dust collector shall contain troubleshooting contingency and corrective actions for the dust collector when the pressure reading is outside of this range for any one reading.

Operation Condition 13(a) has been revised, and now is written as the following:

The Permittee shall take readings of the total static pressure drop across the dust collector, at least once per **week** while the finish sander is in operation and exhausting to the outside atmosphere. Unless operated under conditions for which the Preventive Maintenance Plan specifies otherwise, the pressure drop across the dust collector shall be maintained within the range of 1 and 4 inches of water. The Preventive Maintenance Plan for the dust collector shall contain troubleshooting contingency and corrective actions for the dust collector when the pressure reading is outside of this range for any one reading.

- (b) Operation Condition 13(d), page 6 of 12 (now page 6 of 14), is unclear. The original wording implies that the quarterly inspections shall be of the dust and not the dust collector. Condition 13(d) was originally the following:

An inspection shall be performed each calendar quarter of all the dust. Defective dust collectors shall be replaced. A record shall be kept of the results of the inspection and the number of dust collectors replaced.

Operation Condition 13(d) is revised and is now written as the following:

An inspection shall be performed each calendar quarter of the **dust collector**. Defective dust collectors shall be replaced. A record shall be kept of the results of the inspection and the number of dust collectors replaced.

- (c) Since this source is already major for the Wood Furniture NESHAP, Subpart JJ, the modification to the existing source is also subject to that rule. The wood furniture NESHAP limits for a new facility added to an existing source that does not constitute a reconstruction are the same as the requirements for the existing source already subject to the rule. Based upon the information provided by the applicant, Paoli, Inc. will comply with this rule. Operation Condition 17, page 8 of 12 (now page 8 of 14), has been rewritten as follows:

Wood Furniture NESHAP [40 CFR 63, Subpart JJ]

17. (a) The wood furniture coating operation is subject to the National Emission Standards for Hazardous Air Pollutants (NESHAP), 326 IAC 14, (40 CFR 63 Subpart JJ). A copy of this rule is attached. Pursuant to 40 CFR 63.800, Subpart JJ, the wood furniture coating operations shall comply with the following conditions:
- (1) Limit the Volatile Hazardous Air Pollutants (VHAP) emissions from finishing operations as follows:
    - (A) Achieve a weighted average volatile hazardous air pollutant (VHAP) content across all coatings of 1.0 pound VHAP per pound solids; or
    - (B) 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. Solvent and thinner mixtures used for other purposes have a ten percent (10%) maximum VHAP content by weight; or
    - (C) Use a control device to limit emissions to one (1.0) pound VHAP per pound solids; or
    - (D) Use a combination of (1), (2), and (3).
  - (2) Limit VHAP emissions from contact adhesives as follows:
    - (A) For foam adhesives used in products that meet the upholstered seating flammability requirements, the VHAP content shall not exceed one and eight-tenths (1.8) pound VHAP per pound solids.
    - (B) For all 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.
    - (C) Use a control device to limit emissions to one (1.0) pound VHAP per pound solids.
  - (3) The strippable spray booth material shall have a maximum VOC content of

eight-tenths (0.8) pounds VOC per pound solids.

- (b) Pursuant to 40 CFR 63.803, the owner or operator of an affected source subject to this subpart shall prepare and maintain a written work practice implementation plan within the first sixty (60) calendar days of operation. 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:
  - (1) Operator training courses.
  - (2) Leak inspection and maintenance plan.
  - (3) Cleaning and washoff solvent accounting system.
  - (4) Chemical composition of cleaning and washoff solvents.
  - (5) Spray booth cleaning.
  - (6) Storage requirements.
  - (7) Conventional air spray guns shall only be used under the circumstances defined under 40 CFR 63.803(h).
  - (8) Line cleaning.
  - (9) Gun cleaning.
  - (10) Washoff operations.
  - (11) Formulation assessment plan for finishing operations.
- (c) Pursuant to 40 CFR 63, Subpart JJ, an Initial Compliance Report must be submitted within sixty (60) calendar days of operation and a Continuous Compliance Demonstration Report must be submitted within thirty (30) days following every six (6) month period, thereafter.

As a result of this change, Operation Condition 18 has been revised. New wording is indicated in bold type.

Reporting Requirements

- 18. A log of information necessary to document compliance with operation permit condition nos. **8 and 17** shall be maintained. These records shall include the coating, thinner and clean up solvent usage, **the HAP content in pounds of VHAP per pound of solids, as applied, for all finishing materials, the VOC content in pounds of VOC per pound of solids, as applied, for each strippable coating used, the VHAP content in weight percent of each thinner used,** material safety data sheet (MSDS) **for all materials** and the date of use. These records shall be kept for at least the past 36-month period and made available upon request to the Office of Air Management (OAM).
  - (a) A quarterly summary shall be submitted to:

Indiana Department of Environmental Management  
Compliance Data Section, Office of Air Management  
100 North Senate Avenue, P.O. Box 6015  
Indianapolis, Indiana 46206-6015

within 30 days after the end of the quarter being reported in the format attached. These reports shall include VOC usage by the surface coating facilities (U1a, U1b, U1c, U1, U2, U3, U4, U5, U6, U7, U8 and U9) in tons per month.

- (b) An Initial Compliance Report to document compliance with Operation Condition 17, and the Certification form, shall be submitted within sixty (60) calendar days of startup to:**

**Indiana Department of Environmental Management  
Compliance Data Section, Office of Air Management  
100 North Senate Avenue, P.O. Box 6015  
Indianapolis, Indiana 46206-6015**

- (c) A semi-annual Continuous Compliance Report to document compliance with Operation Condition 17, and the Certification form shall be submitted within thirty (30) days after the end of the six (6) months being reported to:**

**Indiana Department of Environmental Management  
Compliance Data Section, Office of Air Management  
100 North Senate Avenue, P.O. Box 6015  
Indianapolis, Indiana 46206-6015**

**The six (6) month period shall begin on the first day of the month after which the operation commences.**

- (d) Unless otherwise specified in this permit, any notice, report, or other submissions required by this permit shall be timely if:
- (i) Delivered by U.S. mail and postmarked on or before the date it is due; or
  - (ii) Delivered by any other method if it is received and stamped by IDEM, OAM, on or before the date it is due.
- (e) All instances of deviations from any requirements of this permit must be clearly identified in such reports.
- (f) Any corrective actions taken as a result of an exceedance of a limit, an excursion from the parametric values, or a malfunction that may have caused excess emissions must be clearly identified in such reports.
- (g) The first report shall cover the period commencing the postmarked submission date of the Affidavit of Construction.