

**CONSTRUCTION PERMIT
OFFICE OF AIR MANAGEMENT**

**MACtac
2576 Norcross Drive
Columbus, Indiana 47201**

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-005-9965-00087	
Issued by: Paul Dubenetzky, Branch Chief Office of Air Management	Issuance Date:

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SECTION A SOURCE SUMMARY

This permit is based on information requested by the Indiana Department of Environmental Management (IDEM), Office of Air Management (OAM), and presented in the permit application.

A.1 General Information

The Permittee owns and operates a paper coating operation.

Responsible Official: Tim Owens
Source Address: 2576 Norcross Drive, Columbus, Indiana 47201
Mailing Address: 4560 Darrow Road, Stow, Ohio 44224
SIC Code: 2672
County Location: Bartholomew
County Status: Attainment for all criteria pollutants
Source Status: Major Part 70 Permit Program
Minor Source, under PSD Rules

A.2 Emission Units and Pollution Control Equipment Summary

(a) one (1) paper coating line, identified as, consisting of the following units:

1. one (1) rotogravure ink print station, identified as PNT-D1, with emissions exhausted to Stack PNT-D1,
2. one (1) roll coat release coating station, identified as R-1, with emissions exhausted to Stack R-1,
3. one (1) die coat adhesive coating station, identified as A-1,
4. one (1) roll coat primer coating station, identified as PR-1,
5. three (3) natural gas-fired release drying ovens, identified as R-D1, R-D2, and R-D3, each with a design capacity of 6.4 MMBtu/hr, with emissions exhausted to stack R-D1,
6. one (1) 1.58 MMBtu/hr natural gas-fired print drying oven, identified as PR-D1, with emissions exhausted to stack PR-D1,
7. two (2) natural gas-fired adhesive drying ovens, identified as ADH-D1 and ADH-D2, each with a design capacity of 5.5 MMBtu/hr, with emissions exhausted to ADH-D1 and ADH-D2, respectively,
8. two (2) natural gas-fired adhesive drying ovens, identified as ADH-D3 and ADH-D4, each with a design capacity of 5.175, with emissions exhausted to stacks ADH-D3 and ADH-D4, respectively, and
9. one (1) 5.175 MMBtu/hr natural gas-fired primer drying oven, identified as P-D1, with emissions exhausted to stack P-D1,

(b) the following parts cleaning units:

1. one (1) caustic cleaner, identified as CC-1, with a maximum solvent usage of 6 gallons per day,
2. one (1) alkaline cleaner, identified as CC-2, with a maximum solvent usage of 3 gal/day, and
3. one (1) alkaline cleaner, identified as CC-3, with a maximum solvent usage of 5 gal/day,

(c) the following product storage tanks:

1. four (4) adhesive storage tanks, identified as T-1, T-2, T-3, and T-4, each with a maximum capacity of 6,512 gallons,
2. one (1) 883 gallon silicone emulsion storage tank, identified as T-16,
3. one (1) 1,200 gallon surfactant/water mixture storage tank, identified as T-19,
4. two (2) 6,500 gallon wastewater storage tanks, identified as T-11 and T-12,
5. one (1) 2,508 gallon adhesive mixing tank, identified as T-13(a), and
6. two (2) adhesive feed tanks, identified as T-15(b) and T-17(b), each with a maximum capacity of 3,328 gallons, and

(d) the following combustion units:

1. two (2) 8.37 MMBtu/hr natural gas-fired boilers, identified as B-1 and B-2,
2. two (2) 0.0135 MMBtu/hr natural gas-fired unit heaters, identified as UH-1 and UH-2,
3. three (3) 0.005 MMBtu/hr natural gas-fired unit heaters, identified as UH-3, UH-4, and UH-10,
4. one (1) 0.025 MMBtu/hr natural gas-fired unit heater, identified as UH-5,
5. five (5) 0.04 MMBtu/hr natural gas-fired unit heaters, identified as UH-6, UH-7, UH-9, UH-11, and UH-12,
6. one (1) 0.2 MMBtu/hr natural gas-fired air handling unit, identified as ARU-1,
7. two (2) 0.0231 MMBtu/hr natural gas-fired air handling units, identified as RTU-1 and RTU-3,
8. two (2) 0.012 MMBtu/hr natural gas-fired air handling units, identified as RTU-2 and RTU-5,
9. one (1) 0.008 MMBtu/hr natural gas-fired air handling unit, identified as RTU-4,
10. one (1) 0.01 MMBtu/hr natural gas-fired air handling unit, identified as RTU-6,
11. two (2) 0.1087 MMBtu/hr natural gas-fired air handling units, identified as AHU-1 and AHU-2, and
12. two (2) 0.385 MMBtu/hr natural gas-fired air handling units, identified as MUA-2 and MUA-4.

A.3 Part 70 Permit Applicability [326 IAC 2-7-2]

This stationary source will be required to have a Part 70 permit by 326 IAC 2-7-2 (Applicability) because it is a major source, as defined in 326 IAC 2-7-1(22).

SECTION B GENERAL CONSTRUCTION AND OPERATION CONDITIONS

THIS SECTION OF THE PERMIT IS BEING ISSUED UNDER THE PROVISIONS OF 326 IAC 2-1 AND 40 CFR 52.780, WITH CONDITIONS LISTED BELOW.

Construction Conditions [326 IAC 2-1-3.2]

B.1 General Construction Conditions

- (a) 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).

- (b) 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.

B.2 Effective Date of the Permit [IC13-15-5-3]

Pursuant to IC 13-15-5-3, this permit becomes effective upon its issuance.

B.3 Revocation of Permits [326 IAC 2-1-9(b)]

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.

B.4 Permit Review Rules [326 IAC 2]

Notwithstanding Construction Condition No. B.5, 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).

B.5 First Time Operation Permit [326 IAC 2-1-4]

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) 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 2-7-4, the Permittee shall apply for a Title V operating permit within twelve (12) months after the source becomes subject to Title V. This 12-month period starts at the postmarked submission date of the Affidavit of Construction. If the construction is completed in phases, the 12-month period starts at the postmarked submission date of the Affidavit of Construction that triggers the Title V applicability. The operation permit issued shall contain as a minimum the conditions in the Operation Conditions section of this permit.

B.6 NSPS Reporting Requirement [326 IAC 12, 40 CFR Part 60]

That pursuant to the New Source Performance Standards (NSPS), Part 60.440 - 60.447 number), Subpart RR, and Part 60.40c - 60.48c, Subpart Dc, the source owner/operator is hereby advised of the requirement to report the following at the appropriate times:

- (a) Commencement of construction date (no later than 30 days after such date);
- (b) Anticipated start-up date (not more than 60 days or less than 30 days prior to such date);
- (c) Actual start-up date (within 15 days after such date); and
- (d) Date of performance testing (at least 30 days prior to such date), when required by a condition elsewhere in this permit.

Reports are to be sent to:

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

The application and enforcement of these standards have been delegated to the IDEM-OAM. The requirements of 40 CFR Part 60 are also federally enforceable.

B.7 Reference to the Operation Requirements

That when the facility is constructed and placed into operation the following operation conditions shall be met:

Operation Conditions

B.8 General Operation Conditions

- (a) 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).

- (b) 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 (IC13-17) and the rules promulgated thereunder.

B.9 Transfer of Permit [326 IAC 2-1-6]

Pursuant to 326 IAC 2-1-6 (Transfer of Permits):

- (a) In the event that ownership of this paper coating operation 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.

B.10 Permit Revocation [326 IAC 2-1-9]

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).

B.11 Availability of Permit [326 IAC 2-1-3(l)]

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

SECTION C

SOURCE OPERATION CONDITIONS

Entire Source

Emission Limitation and Standards

C.1 PSD Minor Source Status [326 IAC 2-2] [40 CFR 52.21]

The source is an existing minor source under 326 IAC 2-2 (Prevention of Significant Deterioration) and 40 CFR 52.21.

C.2 Opacity Limitations [326 IAC 5-1]

This source is subject to 326 IAC 5-1-2. 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 approval:

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

C.3 Open Burning [326 IAC 4-1] [IC 13-17-9]

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. The previous sentence notwithstanding, the Permittee may open burn in accordance with an open burning approval issued by the Commissioner under 326 IAC 4-1-4.1. 326 IAC 4-1-3(a)(2)(A) and (B) are not federally enforceable.

C.4 Incineration [326 IAC 4-2] [326 IAC 9-1-2(3)]

The Permittee shall not operate an incinerator or incinerate any waste or refuse except as provided in 326 IAC 4-2 and in 326 IAC 9-1-2.

C.5 Fugitive Dust Emissions [326 IAC 6-4]

The Permittee shall not allow fugitive dust to escape beyond the property line or boundaries of the property, right-of-way, or easement on which the source is located, in a manner that would violate 326 IAC 6-4 (Fugitive Dust Emissions). 326 IAC 6-4-2(4) is not federally enforceable.

C.6 Operation of Equipment [326 IAC 2-8-5(a)(4)]

All air pollution control equipment listed in this permit and used to comply with an applicable requirement shall be operated at all times that the emission unit(s) vented to the control equipment are in operation.

C.7 Asbestos Abatement Projects [326 IAC 14-10] [326 IAC 18] [40 CFR 61.140]

- (a) Notification requirements apply to each owner or operator. If the combined amount of regulated asbestos containing material (RACM) to be stripped, removed or disturbed is at least 260 linear feet on pipes or 160 square feet on other facility components, or at least thirty-five (35) cubic feet on all facility components, then the notification requirements of 326 IAC 14-10-3 are mandatory. All demolition projects require notification whether or not asbestos is present.

- (b) The Permittee shall ensure that a written notification is sent on a form provided by the Commissioner at least ten (10) working days before asbestos stripping or removal work or before demolition begins, per 326 IAC 14-10-3, and shall update such notice as necessary, including, but not limited to the following:
 - (1) When the amount of affected asbestos containing material increases or decreases by at least twenty percent (20%); or
 - (2) If there is a change in the following:
 - (A) Asbestos removal or demolition start date;
 - (B) Removal or demolition contractor; or
 - (C) Waste disposal site.

- (c) The Permittee shall ensure that the notice is postmarked or delivered according to the guidelines set forth in 326 IAC 14-10-3(2).

- (d) The notice to be submitted shall include the information enumerated in 326 IAC 14-10-3(3).

All required notifications shall be submitted to:

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

The notifications do not require a certification by the "responsible official" as defined by 326 IAC 2-7-1(34).

- (e) **Procedures for Asbestos Emission Control**
The Permittee shall comply with the emission control procedures in 326 IAC 14-10-4 and 40 CFR 61.145(c). Per 326 IAC 14-10-4 emission control requirements are mandatory for any removal or disturbance of RACM greater than three (3) linear feet on pipes or three (3) square feet on any other facility components or a total of at least 0.75 cubic feet on all facility components.

- (f) **Indiana Accredited Asbestos Inspector**
The Permittee shall comply with 326 IAC 14-10-1(a) that requires the owner or operator, prior to a renovation/demolition, to use an Indiana Accredited Asbestos Inspector to thoroughly inspect the affected portion of the facility for the presence of asbestos. The requirement that the inspector be accredited is federally enforceable.

Testing Requirements

C.8 Performance Testing [326 IAC 3-6]

- (a) All testing shall be performed according to the provisions of 326 IAC 3-6 (Source Sampling Procedures), except as provided elsewhere in this permit, utilizing methods approved by the IDEM, OAM.

A test protocol, except as provided elsewhere in this permit, 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

no later than thirty-five (35) days prior to the intended test date. The Permittee shall submit a notice of the actual test date to the above address so that it is received at least two weeks prior to the test date.

- (b) All test reports must be received by IDEM, OAM within forty-five (45) days after the completion of the testing. An extension may be granted by the Commissioner, if the source submits to IDEM, OAM, a reasonable written explanation within five (5) days prior to the end of the initial forty-five (45) day period.

The documentation submitted by the Permittee does not require certification by the "responsible official" as defined by 326 IAC 2-7-1(34).

Compliance Monitoring Requirements

C.9 Compliance Monitoring

Compliance with applicable requirements shall be documented as required by this permit. The Permittee shall be responsible for installing any necessary equipment and initiating any required monitoring related to that equipment no more than ninety (90) days after receipt of this permit unless otherwise stated. If due to circumstances beyond its control, this schedule cannot be met, the Permittee may extend compliance schedule an additional ninety (90) days provided the Permittee notify:

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

in writing, prior to the end of the initial ninety (90) day compliance schedule with full justification of the reasons for inability to meet this date.

The notification which shall be submitted by the Permittee does require the certification by the "responsible official" as defined by 326 IAC 2-7-1(34).

C.10 Monitoring Methods [326 IAC 3]

Any monitoring or testing performed to meet the applicable requirements of this permit shall be performed according to the provisions of 326 IAC 3, 40 CFR 60, Appendix A, or other approved methods as specified in this permit.

C.11 Risk Management Plan [40 CFR 68.215]

If a regulated substance, subject to 40 CFR 68, is present in a process in more than the threshold quantity, 40 CFR 68 is an applicable requirement and the Permittee shall:

- (a) Submit:
 - (1) A compliance schedule for meeting the requirements of 40 CFR 68 by the date provided in 40 CFR 68.10(a); or
 - (2) As a part of the compliance certification submitted under 326 IAC 2-7-6(5), a certification statement that the source is in compliance with all the requirements of 40 CFR 68, including the registration and submission of a Risk Management Plan (RMP); and
 - (3) A verification to IDEM, OAM, that a RMP or a revised plan was prepared and submitted as required by 40 CFR 68.
- (b) Provide annual certification to IDEM, OAM, that the Risk Management Plan is being properly implemented.

All documents submitted pursuant to this condition shall include the certification by the "responsible official" as defined by 326 IAC 2-7-1(34).

C.12 Actions Related to Noncompliance Demonstrated by a Stack Test

- (a) When the results of a stack test performed in conformance with Section C - Performance Testing, of this permit exceed the level specified in any condition of this permit, the Permittee shall take appropriate corrective actions. The Permittee shall submit a description of these corrective actions to IDEM, OAM, within thirty (30) days of receipt of the test results. The Permittee shall take appropriate action to minimize emissions from the affected facility while the corrective actions are being implemented. IDEM, OAM shall notify the Permittee within thirty (30) days, if the corrective actions taken are deficient. The Permittee shall submit a description of additional corrective actions taken to IDEM, OAM within thirty (30) days of receipt of the notice of deficiency. IDEM, OAM reserves the authority to use enforcement activities to resolve noncompliant stack tests.
- (b) A retest to demonstrate compliance shall be performed within one hundred twenty (120) days of receipt of the original test results. Should the Permittee demonstrate to IDEM, OAM that retesting in one-hundred and twenty (120) days is not practicable, IDEM, OAM may extend the retesting deadline.

Failure of the second test to demonstrate compliance with the appropriate permit conditions may be grounds for immediate revocation of the permit to operate the affected facility.

The documents submitted pursuant to this condition do not require the certification by the "responsible official" as defined by 326 IAC 2-7-1(34).

Record Keeping and Reporting Requirements

C.13 Emission Statement [326 IAC 2-6]

- (a) The Permittee shall submit an annual emission statement certified pursuant to the requirements of 326 IAC 2-6, that meets the requirements of 326 IAC 2-6 (Emission Reporting). This annual statement must be received by July 1 of each year and must comply with the minimum requirements 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). 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

- (b) The annual emission statement required by this permit shall be considered timely if the date postmarked on the envelope or certified mail receipt, or affixed by the shipper on the private shipping receipt, is on or before the date it is due. If the document is submitted by any other means, it shall be considered timely if received by IDEM, OAM, on or before the date it is due.

C.14 Monitoring Data Availability

- (a) With the exception of performance tests conducted in accordance with Section C-Performance Testing all observations, sampling, maintenance procedures, and record keeping, required as a condition of this permit shall be performed at all times the equipment is operating at normal representative conditions.
- (b) As an alternative to the observations, sampling, maintenance procedures, and record keeping of subsection (a) above, when the equipment listed in Section D of this permit is not operating, the Permittee shall either record the fact that the equipment is shut down or perform the observations, sampling, maintenance procedures, and record keeping that would otherwise be required by this permit.
- (c) If the equipment is operating but abnormal conditions prevail, additional observations and sampling should be taken with a record made of the nature of the abnormality.
- (d) If for reasons beyond its control, the operator fails to make required observations, sampling, maintenance procedures, or record keeping, reasons for this must be recorded.

- (e) At its discretion, IDEM may excuse such failure providing adequate justification is documented and such failures do not exceed five percent (5%) of the operating time in any quarter.
- (f) Temporary, unscheduled unavailability of staff qualified to perform the required observations, sampling, maintenance procedures, or record keeping shall be considered a valid reason for failure to perform the requirements in (a) above.

C.15 General Record Keeping Requirements

- (a) Records of all required monitoring data and support information shall be retained for a period of at least five (5) years from the date of monitoring sample, measurement, report, or application. These records shall be kept at the source location for a minimum of three (3) years and available upon the request of an IDEM, OAM, representative. The records may be stored elsewhere for the remaining two (2) years as long as they are available upon request. If the Commissioner makes a written request for records to the Permittee, the Permittee shall furnish the records to the Commissioner within a reasonable time.
- (b) Records of required monitoring information shall include, where applicable:
 - (1) The date, place, and time of sampling or measurements;
 - (2) The dates analyses were performed;
 - (3) The company or entity performing the analyses;
 - (4) The analytic techniques or methods used;
 - (5) The results of such analyses; and
 - (6) The operating conditions existing at the time of sampling or measurement.
- (c) Support information shall include, where applicable:
 - (1) Copies of all reports required by this permit;
 - (2) All original strip chart recordings for continuous monitoring instrumentation;
 - (3) All calibration and maintenance records;
 - (4) Records of preventive maintenance shall be sufficient to demonstrate that improper maintenance did not cause or contribute to a violation of any limitation on emissions or potential to emit. To be relied upon subsequent to any such violation, these records may include, but are not limited to: work orders, parts inventories, and operator's standard operating procedures. Records of response steps taken shall indicate whether the response steps were performed in accordance with the Compliance Response Plan required by Section C - Compliance Monitoring Plan - Failure to take Response Steps, of this permit, and whether a deviation from a permit condition was reported.

All records shall briefly describe what maintenance and response steps were taken and indicate who performed the tasks.

- (d) All record keeping requirements not already legally required shall be implemented within ninety (90) days of permit issuance.

C.16 General Reporting Requirements

- (a) To affirm that the source has met all the compliance monitoring requirements stated in this permit the source shall submit a Quarterly or Semi-annual report as applicable. Any deviation from the requirements and the date(s) of each deviation must be reported.
- (b) The report required in (a) of this condition and reports required by conditions in Section D of this permit 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
- (c) Unless otherwise specified in this permit, any notice, report, or other submission required by this permit shall be considered timely if the date postmarked on the envelope or certified mail receipt, or affixed by the shipper on the private shipping receipt, is on or before the date it is due. If the document is submitted by any other means, it shall be considered timely if received by IDEM, OAM, on or before the date it is due.
- (d) Unless otherwise specified in this permit, any quarterly or semi-annual report shall be submitted within thirty (30) days of the end of the reporting period.
- (e) All instances of deviations as described in Section B- Deviations from Permit Requirements Conditions must be clearly identified in such reports.
- (f) Any corrective actions or response steps taken as a result of each deviation must be clearly identified in such reports.
- (g) The first report shall cover the period commencing on the date of issuance of this permit and ending on the last day of the reporting period.

The documents submitted pursuant to this condition do not require the certification by the "responsible official" as defined by 326 IAC 2-7-1(34).

C.17 Compliance with 40 CFR 82 and 326 IAC 22-1

Pursuant to 40 CFR 82 (Protection of Stratospheric Ozone), Subpart F, except as provided for motor vehicle air conditioners in Subpart B, the Permittee shall comply with the standards for recycling and emissions reduction:

- (a) Persons opening appliances for maintenance, service, repair or disposal must comply with the required practices pursuant to 40 CFR 82.156

- (b) Equipment used during the maintenance, service, repair or disposal of appliances must comply with the standards for recycling and recovery equipment pursuant to 40 CFR 82.158.
- (c) Persons performing maintenance, service, repair or disposal of appliances must be certified by an approved technician certification program pursuant to 40 CFR 82.161.

SECTION D.1 FACILITY CONDITIONS

- (1) one (1) rotogravure ink print station, identified as PNT-D1, with emissions exhausted to Stack PNT-D1,
- (2) one (1) roll coat release coating station, identified as R-1, with emissions exhausted to Stack R-1,
- (3) one (1) die coat adhesive coating station, identified as A-1,
- (4) one (1) roll coat primer coating station, identified as PR-1,
- (5) three (3) natural gas-fired release drying ovens, identified as R-D1, R-D2, and R-D3, each with a design capacity of 6.4 MMBtu/hr, with emissions exhausted to stack R-D1,
- (6) one (1) 1.58 MMBtu/hr natural gas-fired print drying oven, identified as PR-D1, with emissions exhausted to stack PR-D1,
- (7) two (2) natural gas-fired adhesive drying ovens, identified as ADH-D1 and ADH-D2, each with a design capacity of 5.5 MMBtu/hr, with emissions exhausted to ADH-D1 and ADH-D2, respectively,
- (8) two (2) natural gas-fired adhesive drying ovens, identified as ADH-D3 and ADH-D4, each with a design capacity of 5.175, with emissions exhausted to stacks ADH-D3 and ADH-D4, respectively,
- (9) one (1) 5.175 MMBtu/hr natural gas-fired primer drying oven, identified as P-D1, with emissions exhausted to stack P-D1,
- (10) four (4) adhesive storage tanks, identified as T-1, T-2, T-3, and T-4, each with a maximum capacity of 6,512 gallons,
- (11) one (1) 883 gallon silicone emulsion storage tank, identified as T-16,
- (12) one (1) 1,200 gallon surfactant/water mixture storage tank, identified as T-19,
- (13) two (2) 6,500 gallon wastewater storage tanks, identified as T-11 and T-12,
- (14) one (1) 2,508 gallon adhesive mixing tank, identified as T-13(a), and
- (15) two (2) adhesive feed tanks, identified as T-15(b) and T-17(b), each with a maximum capacity of 3,328 gallons,
- (16) one (1) 0.2 MMBtu/hr natural gas-fired air handling unit, identified as ARU-1,
- (17) two (2) 0.0231 MMBtu/hr natural gas-fired air handling units, identified as RTU-1 and RTU-3,
- (18) two (2) 0.012 MMBtu/hr natural gas-fired air handling units, identified as RTU-2 and RTU-5,
- (19) one (1) 0.008 MMBtu/hr natural gas-fired air handling unit, identified as RTU-4,
- (20) one (1) 0.01 MMBtu/hr natural gas-fired air handling unit, identified as RTU-6,
- (21) two (2) 0.1087 MMBtu/hr natural gas-fired air handling units, identified as AHU-1 and AHU-2,
- (22) two (2) 0.385 MMBtu/hr natural gas-fired air handling units, identified as MUA-2 and MUA-4.

Emission Limitations and Standards

D.1.1 Volatile Organic Compounds (VOC) [326 IAC 12] [40 CFR 60.442]

The VOC content of all coatings applied to the pressure sensitive tape and label coating line shall be limited to less than 0.20 kg VOC/kg of coating solids applied as calculated on a weighted average basis, based on a calendar monthly basis.

D.1.2 Volatile Organic Compounds [326 IAC 8-2-5]

The volatile organic compound (VOC) content of coatings applied to labels of any substrate, or pressure sensitive tapes, or paper, plastic or metal foil by means of web coating shall be limited to 2.9 pounds VOC per gallon of coating less water delivered to the applicator.

D.1.3 Particulate Matter (PM) [326 IAC 6-3]

The paper coating operation is subject to 326 IAC 6-3-2(c) (Process Operations). Pursuant to 326 IAC 6-3 (Process Operations) any PM emissions generated by the paper coating operation shall comply with 326 IAC 6-3-2(c) using the following equation:

$$E = 4.10P^{0.67} \quad \text{where: } E = \text{rate of emission in pounds per hour,}$$
$$P = \text{process weight in tons per hour, if}$$
$$P \text{ is equal to or less than } 60,000 \text{ lbs/hr (30 tons/hr)}$$

or

$$E = 55.0P^{0.11} - 40 \quad \text{where: } E = \text{rate of emission in pounds per hour,}$$
$$P = \text{process weight in tons per hour, if}$$
$$P \text{ is greater than } 60,000 \text{ lbs/hr (30 tons/hr).}$$

Compliance Determination Requirements

D.1.4 Compliance Determination [326 IAC 12] [40 CFR 60.443]

Compliance with the limitation of condition D.1.1 shall be determined by calculating a weighted average of the mass of solvent used per mass of coating solids applied for a one calendar month period according the following procedures:

- (a) The weight fraction of organics (W_{oi}) and the weight fraction of solids (W_{si}) of each coating applied shall be determined by using Reference Method 24 or by coating formulation data supplied by the manufacturer.
- (b) the weighted average (G) shall be calculated using the following equation:

$$G = \frac{\sum_{i=1}^n W_{oi} M_{ci}}{\sum_{i=1}^n W_{si} M_{ci}}$$

where:

- G = the calculated weighted average mass (kg) of VOC per mass (kg) of coating solids applied each calendar month.
- M_{ci} = the total mass (kg) of each coating (i) applied during the calendar month as determined from facility records.
- W_{oi} = the weight fraction of organics applied of each coating (i) applied during a calendar month as determined from Reference Method 24 or coating manufacturer's formulation data.

W_{si} = the weight fraction of solids applied of each coating (i) applied during a calendar month as determined from Reference Method 24 or coating manufacturer's formulation data.

For each pressure sensitive tape and label coating line where the value of G is less than or equal to 0.20 kg VOC per kg of coating solids applied, the pressure sensitive tape and label coating line shall be considered in compliance with Condition D.1.1.

D.1.5 Performance Tests [326 IAC 12] [40 CFR 60.444(a)]

Performance tests for pressure sensitive tape and label coating line shall be satisfied by following the procedures of Condition D.1.5.

D.1.6 Test Methods and Procedures [326 IAC 12] [40 CFR 60.446(a)]

Compliance with the VOC content per unit of coating solids limit of Condition D.1.1 shall be determined by using either:

- (a) Reference Method 24 and the equations specified in Condition D.1.5, or
- (b) manufacturers' formulation data.

In the event of any inconsistency between a Method 24 test and manufacturers' formulation data, the Method 24 test will govern. The Commissioner may require an owner or operator to perform Method 24 tests during such months as he or she deems appropriate. For Reference Method 24, the coating sample must be a one liter sample taken into a one liter container at a point where the sample will be representative of the coating applied to the web substrate.

The owner or operator may use alternative performance test methods provided:

- (a) the alternative method has been approved by the U.S. EPA, and
- (b) the owner or operator notifies the Indiana Department of Environmental Management within 30 days of the proposed change in the performance test method. Said notification shall be sent to:

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

Record Keeping and Reporting Requirements

D.1.7 Record Keeping Requirements [326 IAC 12] [40 CFR 60.445(a), (d), and (h)]

The owner or operator of an pressure sensitive tape and label coating line shall:

- (a) maintain a calendar month record of all coatings used and the results of the reference test method specified in Condition D.1.7 or the manufacturer's formulation data used for determining the VOC content of those coatings, and

- (b) maintain a 12 month record of the amount of solvent applied in the coating at the pressure sensitive tape and label coating line.

These records shall be retained for at least two years following the date of the measurements and made available upon request of the Office of Air Management.

D.1.8 Reporting Requirements [326 IAC 12] [40 CFR 60.447]

A quarterly summary, unless otherwise stated, of the following information required to document compliance with the requirements of 40 CFR 60.440 - 447, Subpart RR shall be submitted to the address listed in Section C - General Reporting Requirements, of this permit, within thirty (30) days of being reported after the end of the applicable period:

- (a) The performance test data and results from the performance test as specified in § 60.8(a) of the General Provisions (40 CFR part 60, subpart A), and
- (b) reports, following the initial performance test, of exceedances of the VOC emission limits of Condition D.1.1. If no such exceedances occur during a particular quarter, a report stating this shall be submitted to the Administrator semi-annually.

The reporting requirements of this subsection remain in force until and unless EPA, in delegating enforcement authority to a State under section 111(c) of the Act, approves reporting requirements or an alternative means of compliance surveillance adopted by such States. In that event, affected sources within the State will be relieved of the obligation to comply with this subsection, provided that they comply with the requirements established by the State.

SECTION D.2 FACILITY OPERATION CONDITIONS

- | | |
|-----|---|
| (1) | one (1) caustic cleaner, identified as CC-1, with a maximum solvent usage of 6 gallons per day, |
| (2) | one (1) alkaline cleaner, identified as CC-2, with a maximum solvent usage of 3 gal/day, and |
| (3) | one (1) alkaline cleaner, identified as CC-3, with a maximum solvent usage of 5 gal/day. |

Emission Limitations and Standards

There are no emission standards or limitations that apply to parts cleaners CC-1, CC-2, or C-3.

D.3 FACILITY OPERATION CONDITIONS

- | | |
|-----|--|
| (1) | two (2) 8.37 MMBtu/hr natural gas-fired boilers, identified as B-1 and B-2, |
| (2) | two (2) 0.0135 MMBtu/hr natural gas-fired unit heaters, identified as UH-1 and UH-2, |
| (3) | three (3) 0.005 MMBtu/hr natural gas-fired unit heaters, identified as UH-3, UH-4, and UH-10, |
| (4) | one (1) 0.025 MMBtu/hr natural gas-fired unit heater, identified as UH-5, and |
| (5) | five (5) 0.04 MMBtu/hr natural gas-fired unit heaters, identified as UH-6, UH-7, UH-9, UH-11, and UH-12. |

Emission Limitations and Standards

D.3.1 Particulate Matter Limitations for Sources of Indirect Heating [326 IAC 6-2-4]

The to 326 IAC 6-2-4, particulate matter (PM) emissions from Boilers B1 and B2 shall be limited to 0.52 pound per million BTU heat input, each.

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: _____ PHONE NO. _____

LOCATION: (CITY AND COUNTY) _____

PERMIT NO. _____ AFS PLANT ID: _____ 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: _____ TITLE: _____
(SIGNATURE IF FAXED)

MALFUNCTION RECORDED BY: _____ DATE: _____ TIME: _____

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 SO₂, 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:

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

**CONSTRUCTION PERMIT
 SEMI-ANNUAL COMPLIANCE MONITORING REPORT**

Source Name: Allomatic Products Company
 Source Address: 609 East Chaney Street, Sullivan, Indiana 47882
 Mailing Address: P. O. Box 267, Sullivan, Indiana 47882
 CP No.: 153-10144-00015

Months: _____ **to** _____ **Year:** _____

This report is an affirmation that the source has met all the compliance monitoring requirements stated in this permit. This report shall be submitted semi-annually. Any deviation from the compliance monitoring requirements and the date(s) of each deviation must be reported. Additional pages may be attached if necessary. This form can be supplemented by attaching the Emergency/Deviation Occurrence Report. If no deviations occurred, please specify in the box marked "No deviations occurred this reporting period".

9 NO DEVIATIONS OCCURRED THIS REPORTING PERIOD

9 THE FOLLOWING DEVIATIONS OCCURRED THIS REPORTING PERIOD.

Compliance Monitoring Requirement (eg. Permit Condition D.1.1, D.1.5(b))	Number of Deviations	Date of each Deviation

Form Completed By: _____
 Title/Position: _____
 Date: _____
 Phone: _____

Attach a signed certification to complete this report.

Indiana Department of Environmental Management Office of Air Management

Technical Support Document (TSD) for a Construction Permit

Source Background And Description

Source Name: MACtac
Source Location: 2576 Norcross Drive, Columbus, Indiana 47201
County: Bartholomew
SIC Code: 2672
Operation Permit No.: CP005-9965-00087
Permit Reviewer: SDF

The Office of Air Management (OAM) has reviewed a State Construction Permit application from MACtac relating to the operation of:

the following emission units and pollution control devices:

- (a) one (1) paper coating line, identified as, consisting of the following units:
- (1) one (1) rotogravure ink print station, identified as PNT-D1, with emissions exhausted to Stack PNT-D1,
 - (2) one (1) roll coat release coating station, identified as R-1, with emissions exhausted to Stack R-1,
 - (3) one (1) die coat adhesive coating station, identified as A-1
 - (4) one (1) roll coat primer coating station, identified as PR-1
 - (5) three (3) natural gas-fired release drying ovens, identified as R-D1, R-D2, and R-D3, each with a design capacity of 6.4 MMBtu/hr, with emissions exhausted to stack R-D1,
 - (6) one (1) 1.58 MMBtu/hr natural gas-fired print drying oven, identified as PR-D1, with emissions exhausted to stack PR-D1,
 - (7) two (2) natural gas-fired adhesive drying ovens, identified as ADH-D1 and ADH-D2, each with a design capacity of 5.5 MMBtu/hr, with emissions exhausted to ADH-D1 and ADH-D2, respectively,
 - (8) two (2) natural gas-fired adhesive drying ovens, identified as ADH-D3 and ADH-D4, each with a design capacity of 5.175 MMBtu/hr, with emissions exhausted to stacks ADH-D3 and ADH-D4, respectively, and
 - (9) one (1) 5.175 MMBtu/hr natural gas-fired primer drying oven, identified as P-D1, with emissions exhausted to stack P-D1,
- (b) the following parts cleaning units:
- (1) one (1) caustic cleaner, identified as CC-1, with a maximum solvent usage of 6 gallons per day,
 - (2) one (1) alkaline cleaner, identified as CC-2, with a maximum solvent usage of 3 gal/day, and
 - (3) one (1) alkaline cleaner, identified as CC-3, with a maximum solvent usage of 5 gal/day,

(c) the following product storage tanks:

- (1) four (4) adhesive storage tanks, identified as T-1, T-2, T-3, and T-4, each with a maximum capacity of 6,512 gallons,
- (2) one (1) 883 gallon silicone emulsion storage tank, identified as T-16,
- (3) one (1) 1,200 gallon surfactant/water mixture storage tank, identified as T-19,
- (4) two (2) 6,500 gallon wastewater storage tanks, identified as T-11 and T-12,
- (5) one (1) 2,508 gallon adhesive mixing tank, identified as T-13(a), and
- (6) two (2) adhesive feed tanks, identified as T-15(b) and T-17(b), each with a maximum capacity of 3,328 gallons, and

(d) the following combustion units:

- (1) two (2) 8.37 MMBtu/hr natural gas-fired boilers, identified as B-1 and B-2,
- (2) two (2) 0.0135 MMBtu/hr natural gas-fired unit heaters, identified as UH-1 and UH-2,
- (3) three (3) 0.005 MMBtu/hr natural gas-fired unit heaters, identified as UH-3, UH-4, and UH-10,
- (4) one (1) 0.025 MMBtu/hr natural gas-fired unit heater, identified as UH-5,
- (5) five (5) 0.04 MMBtu/hr natural gas-fired unit heaters, identified as UH-6, UH-7, UH-9, UH-11, and UH-12,
- (6) one (1) 0.2 MMBtu/hr natural gas-fired air handling unit, identified as ARU-1,
- (7) two (2) 0.0231 MMBtu/hr natural gas-fired air handling units, identified as RTU-1 and RTU-3,
- (8) two (2) 0.012 MMBtu/hr natural gas-fired air handling units, identified as RTU-2 and RTU-5,
- (9) one (1) 0.008 MMBtu/hr natural gas-fired air handling unit, identified as RTU-4,
- (10) one (1) 0.01 MMBtu/hr natural gas-fired air handling unit, identified as RTU-6,
- (11) two (2) 0.1087 MMBtu/hr natural gas-fired air handling units, identified as AHU-1 and AHU-2, and
- (12) two (2) 0.385 MMBtu/hr natural gas-fired air handling units, identified as MUA-2 and MUA-4.

Enforcement Issue

There are no Enforcement actions pending.

Recommendation

The staff recommends to the Commissioner that the Construction Permit 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 administratively complete Construction Permit application for the purposes of this review was received on July 20, 1998, with additional information submitted on November 24, 1998 and January 14, 1999.

Emissions Calculations

1. Potential Emissions:

a. Combustion Emissions:

The following lists the estimated combustion unit potential emissions as determined using the attached standard combustion spreadsheets.

Unit	Total Capacity MMBtu/hr	PM ton/yr	PM10 ton/yr	SO2 ton/yr	NOx ton/yr	VOC ton/yr	CO ton/yr
B1	8.37	0.20	0.20	neg.	2.80	0.20	3.10
B2	8.37	0.20	0.20	neg.	2.80	0.20	3.10
R-D1, D2, and D3	19.2	0.40	0.40	0.10	6.40	0.50	7.10
PR-D1	1.58	neg.	neg.	neg.	0.50	neg.	0.60
ADH-D1 and D2	11.00	0.20	0.20	neg.	0.50	neg.	0.60
ADH-D3 and D4	10.35	0.20	0.20	neg.	3.4	0.20	3.80
P-D1	5.18	0.10	0.10	neg.	1.70	0.10	1.90
UH-1, UH-2	0.03	neg.	neg.	neg.	neg.	neg.	neg.
UH-3, 4, and 10	0.02	neg.	neg.	neg.	neg.	neg.	neg.
UH-5	0.03	neg.	neg.	neg.	neg.	neg.	neg.
UH-6, 7, 9, 11, and 12	0.2	neg.	neg.	neg.	0.10	neg.	0.10
ARU-1	0.2	neg.	neg.	neg.	0.10	neg.	0.10
RTU-1 and 3	0.05	neg.	neg.	neg.	neg.	neg.	neg.
RTU-2 and 5	0.02	neg.	neg.	neg.	neg.	neg.	neg.
RTU-4	0.01	neg.	neg.	neg.	neg.	neg.	neg.
RTU-6	0.01	neg.	neg.	neg.	neg.	neg.	neg.
AHU-1 and 2	0.22	neg.	neg.	neg.	0.10	neg.	0.10
MUA-2 and 4	0.77	neg.	neg.	neg.	0.30	neg.	0.30
Total		1.30	1.30	0.10	21.90	1.50	24.20

2. Paper Coating Line Emissions:

The following lists the estimated paper coating line unit potential emissions as determined using the attached standard spreadsheets, less the tank potential VOC emissions.

Unit	VOC ton/yr	PM ton/yr	PM10 ton/yr
Adhesive Coat Station	85.99	neg.	neg.
Release Coat Station	16.94	neg.	neg.
Primer Topcoat Station	28.22	neg.	neg.
Ink Station	1.30	neg.	neg.
Total	130.64	neg.	neg.

3. Tank Emissions:

The following lists the estimated tank potential emissions as determined using the attached standard combustion spreadsheets: **lb VOC/yr * 1/2000 ton/lb = ton/yr**

Unit	lb VOC/yr	ton VOC/yr
T1 and T2	835.88	0.42
T3 and T4	882.20	0.44
T11	104.14	0.05
T12	104.70	0.05
T13	758.09	0.34
T15	444.65	0.22
T16	58.70	0.03
T17	444.65	0.22
T19	82.94	0.04
Total		1.81

4. Parts Cleaning Units:

The following calculations determine the potential parts cleaning unit emissions based on 365 day/yr, emissions before controls, respective maximum solvent usage rates, and their respective VOC densities:

gal/day * VOC density (lb VOC/gal) * 365 day/yr * 1/2000 ton/lb = ton VOC/yr

Unit	Max. Usage gal/day	VOC Density lb VOC/gal	ton VOC/yr
CC1	6.00	4.50	4.93
CC2	3.00	6.77	3.67
CC3	5.00	0.41	0.37
Total			8.97

5. Source HAP Emissions:

The following calculations determined the potential hazardous air pollutant (HAP) emissions based on the maximum hourly rate, 8,760 hours of operation, and emissions before controls:

$$\text{lb/hr} * 8760 \text{ hr/yr} * 1/2000 \text{ ton/lb} = \text{ton/yr}$$

HAP	Max. lb VOC/yr	ton VOC/yr
Acetaldehyde	0.032	0.14
1,4 Dioxane	0.64	2.80
Formaldehyde	0.014	0.06
Methanol	0.274	1.20
Methyl Methacrylate	0.274	1.20
Vinyl Acetate	0.02	0.09
Total		5.49

2. Potential Emissions After Controls:

The unit emissions from the equipment proposed in this permit are uncontrolled. Therefore, the potential emissions after controls equals the potential emissions before controls.

3. Allowable Emissions:

The allowable emissions are determined to be equal to the potential emissions before controls.

Potential Emissions

Pursuant to 326 IAC 1-2-55, Potential Emissions are defined as “emissions of any one (1) pollutant which would be emitted from a facility, if that facility were operated without the use of pollution control equipment unless such control equipment is necessary for the facility to produce its normal product or is integral to the normal operation of the facility.”

Pollutant	Potential Emissions (tons/year)
PM	1.30
PM-10	1.30
SO ₂	0.10
NOx	21.90
VOC	142.42
CO	24.20

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

See attached spreadsheets for detailed calculations

HAP	Potential Emissions (tons/year)
Acetaldehyde	0.14
1,4 Dioxane	2.80
Formaldehyde	0.06
Methanol	1.20
Methyl Methacrylate	1.20
Vinyl Acetate	0.09
TOTAL	5.49

- (a) Allowable emissions are determined to be equal to the potential emissions before controls.
- (b) Allowable emissions (as defined in the Indiana Rule) of volatile organic compounds (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) are precursors for the formation of ozone. Therefore, VOC emissions are considered when evaluating the rule applicability relating to the ozone standards. Bartholomew County has been designated as attainment or unclassifiable for ozone. Therefore, VOC emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2 and 40 CFR 52.21.
- (b) Bartholomew County has been classified as attainment or unclassifiable for all other criteria pollutants as well. Therefore, these emissions were reviewed pursuant to the requirements for Prevention of Significant Deterioration (PSD), 326 IAC 2-2 and 40 CFR 52.21.

Source Status

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

	(ton/yr)
PM	1.30
PM10	1.30

SO ₂	0.10
VOC	142.42
CO	24.20
NO _x	21.90
Single HAP	2.80
Combination HAPs	5.49

- (a) This new source is **not** a major stationary source because no attainment pollutant is emitted at a rate of 250 tons per year or greater and it is not in one of the 28 listed source categories. 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 new source is subject to the Part 70 Permit requirements because the potential to emit (PTE) of:

- (a) at least one of the criteria pollutant is greater than or equal to 100 tons per year,
- (b) a single hazardous air pollutant (HAP) is greater than or equal to 10 tons per year, or
- (c) any combination of HAPs is greater than or equal to 25 tons/year.

This new source shall apply for a Part 70 (Title V) operating permit within twelve (12) months after this source becomes subject to Title V.

Federal Rule Applicability

(a) New Source Performance Standards (NSPS):

1. **40 CFR 60.40c - 60.48c (326 IAC 12), Subpart Dc, Standards of Performance for Small Industrial Commercial Institutional Steam Generating Units:**

Boilers B1 and B2 are not subject to 40 CFR 60.40c - 60.60.48c (326 IAC 12), Subpart Dc, Standards of Performance for Small Industrial Commercial Institutional Steam Generating Units because the design capacities (8.37 and 8.37 MMBtu/hr, respectively) are less than 10 MMBtu/hr.

2. **40 CFR 60.440 - 60.60.447 (326 IAC 12), Subpart RR, Standards of Performance for Pressure Sensitive Tape and Labeling Coating Operations:**

40 CFR 60.440 - 60.60.447 (326 IAC 12), Subpart RR applies to the printing operation because the printing operation manufactures pressure sensitive tape and label materials, inputs to the coating process of 45 Mg of VOC or greater per 12 month period, and was constructed after December 30, 1980.

(a) **Emission Limitations and Standards [60.442(a)]**

The VOC content of all coatings applied to the pressure sensitive tape and label coating line shall be limited to less than 0.20 kg VOC/kg of coating solids applied as calculated on a weighted average basis, based on a calendar monthly basis.

(b) Compliance Determination Requirements [40 CFR 60.443(a)(1), (2), (3), 60.444(a), 60.446(a)]

Compliance Determination:

Compliance with the VOC limitation shall be determined by calculating a weighted average of the mass of solvent used per mass of coating solids applied for a one calendar month period according the following procedures:

- (a) The weight fraction of organics (W_{oi}) and the weight fraction of solids (W_{si}) of each coating applied shall be determined by using Reference Method 24 or by coating formulation data supplied by the manufacturer.
- (b) the weighted average (G) shall be calculated using the following equation:

$$G = \frac{\sum_{i=1}^n W_{oi} M_{ci}}{\sum_{i=1}^n W_{si} M_{ci}}$$

where:

- G = the calculated weighted average mass (kg) of VOC per mass (kg) of coating solids applied each calendar month.
- M_{ci} = the total mass (kg) of each coating (i) applied during the calendar month as determined from facility records.
- W_{oi} = the weight fraction of organics applied of each coating (i) applied during a calendar month as determined from Reference Method 24 or coating manufacturer's formulation data.
- W_{si} = the weight fraction of solids applied of each coating (i) applied during a calendar month as determined from Reference Method 24 or coating manufacturer's formulation data.

For each line where the value of G is less than or equal to 0.20 kg VOC per kg of coating solids applied, the line shall be considered in compliance with VOC limitation.

[60.443(a)(1), (2), and (3)]

Performance Tests:

Performance tests for pressure sensitive tape and label coating line shall be satisfied by following the above compliance determination procedures. **[60.444(a)]**

Test Methods and Procedures:

Compliance with the VOC content per unit of coating solids limit shall be determined by using either

- 1. Reference Method 24 and the equations specified in the compliance determination section, or
- 2. manufacturers' formulation data.

In the event of any inconsistency between a Method 24 test and manufacturers' formulation data, the Method 24 test will govern. The Commissioner may require an owner or operator to perform Method 24 tests during such months as he or she deems appropriate. For Reference Method 24, the coating sample must be a one liter sample taken into a one liter container at a point where the sample will be representative of the coating applied to the web substrate. **[60.446(a)]**

(c) Compliance Monitoring

There are no compliance monitoring requirements associated with Subpart RR when the VOCs are limited by limiting the VOC content.

(d) Record Keeping and Reporting Requirements [40 CFR 60.445(a), (d), (h), and 60.447]

Record Keeping Requirements:

The owner or operator of the affected facility shall:

- (a) maintain a calendar month record of all coatings used and the results of the reference test method specified in test methods and procedures section above or the manufacturer's formulation data used for determining the VOC content of those coatings **[60.445(a)]**, and
- (b) maintain a 12 month record of the amount of solvent applied in the coating at the pressure sensitive tape and label coating line. **[60.445(d)]**

These records shall be retained for at least two years following the date of the measurements and made available upon request of the Office of Air Management. **[60.445(h)]**

Reporting Requirements:

A quarterly summary, unless otherwise stated, of the following information required to document compliance with the requirements of 40 CFR 60.440 - 447, Subpart RR shall be submitted to the address listed in Section C - General Reporting Requirements, of this permit, within thirty (30) days of being reported after the end of the applicable period:

- (a) The performance test data and results from the performance test as specified in § 60.8(a) of the General Provisions (40 CFR part 60, subpart A), and
- (b) reports, following the initial performance test, of exceedances of the 0.20 kg VOC/kg of coating solids applied limit specified above. If no such exceedances occur during a particular quarter, a report stating this shall be submitted to the Administrator semi-annually.

The reporting requirements of this subsection remain in force until and unless EPA, in delegating enforcement authority to a State under section 111(c) of the Act, approves reporting requirements or an alternative means of compliance surveillance adopted by such States. In that event, affected sources within the State will be relieved of the obligation to comply with this subsection, provided that they comply with the requirements established by the State.

[60.447(a),(b),(c), and (d)]

3. 40 CFR 60. 430 - 60.435 (326 IAC 12), Subpart QQ, Standards of Performance for the Graphic Arts Industry: Publication Rotogravure Printing:

40 CFR 60. 430 - 60.435 (326 IAC 12), Subpart QQ, Standards of Performance for the Graphic Arts Industry: Publication Rotogravure Printing, does not apply because the proposed source does not have any publication rotogravure printing presses as defined in 40 CFR 60.431(a).

4. 40 CFR 60.110 - 60.113 (326 IAC 12), Subpart K, Standards of Performance for Storage Vessels for Petroleum Liquids for Which Construction, Reconstruction, or Modification Commenced After June 11, 1973, and Prior to May 19, 1978:

40 CFR 60.110 - 60.113 (326 IAC 12), Subpart K, Standards of Performance for Storage Vessels for Petroleum Liquids for Which Construction, Reconstruction, or Modification Commenced After June 11, 1973, and Prior to May 19, 1978 does not apply because the tanks were constructed in 1999, after the applicable date of May 19, 1978.

5. 40 CFR 60.110a - 60.115a (326 IAC 12), Subpart Ka, Standards of Performance for Storage Vessels for Petroleum Liquids for Which Construction, Reconstruction, or Modification Commenced After May 18, 1978, and Prior to July 23, 1984:

40 CFR 60.110a - 60.115a (326 IAC 12), Subpart Ka, Standards of Performance for Storage Vessels for Petroleum Liquids for Which Construction, Reconstruction, or Modification Commenced After May 18, 1978, and Prior to July 23, 1984 does not apply because the tanks were constructed in 1999, prior to the applicable date of July 23, 1984.

6. 40 CFR 60.110b - 60.117b (326 IAC 12), Subpart Kb, Standards of Performance for Storage Vessels for Petroleum Liquids for Which Construction, Reconstruction, or Modification Commenced After July 23, 1984:

40 CFR 60.110b - 60.117b (326 IAC 12), Subpart Kb, Standards of Performance for Storage Vessels for Petroleum Liquids for Which Construction, Reconstruction, or Modification Commenced After July 23, 1984 does not apply because the tanks are process tanks and not storage vessels.

(b) National Emission Standards for Hazardous Air Pollutants (NESHAP):

There are no National Emission Standards for Hazardous Air Pollutants (NESHAP) applicable to this source.

State Rule Applicability - Entire Source

326 IAC 2-6 (Emission Reporting)

This source is subject to 326 IAC 2-6 (Emission Reporting), because it emits more than one hundred (100) tons per year of volatile organic compounds (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 5 (Opacity)

This source is subject to 326 IAC 5-1-2. 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 approval:

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

State Rule Applicability - Individual Facilities

326 IAC 6-2 (PM Limitations for Source of Indirect Heating)

326 IAC 6-2 (Particulate Emission Limitations for Sources of Indirect Heating), does apply to Boilers B1 and B2. Pursuant to 326 IAC 6-2-4, based on a total source indirect heating capacity of 16.74 MMBtu/hr, the PM emissions from boilers B1 and B2 shall not exceed 0.52 lb PM/MMBtu heat input, each.

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

where: Pt = pounds of PM emitted per million Btu heat input, (0.52 lb/MMBtu)
Q = total source maximum operating capacity (16.74 MMBtu/hr)

The estimated PM emissions from boilers B1 and B2 are as follows:

$$5.0 \text{ lb PM/MMcf} * 1/1000 \text{ MMCf/MMBtu} = 0.005 \text{ lb PM/MMBtu}$$

The estimated PM emissions from the boilers are 0.005 and 0.005 lb PM/MMBtu which are less than the limit of 0.52 lb/MMBtu, each. Therefore, compliance for each boiler is determined to be achieved.

326 IAC 6-3-2(c) (PM Limitations for Process Operations)

The paper coating operation is subject to 326 IAC 6-3-2(c) (Process Operations). Pursuant to 326 IAC 6-3 (Process Operations) the paper coating operation shall comply with 326 IAC 6-3-2(c) using the following equation:

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

P = process weight in tons per hour, if
P is equal to or less than 60,000 lbs/hr (30 tons/hr)

or

$$E = 55.0P^{0.11} - 40 \quad \text{where: } E = \text{rate of emission in pounds per hour,}$$

P = process weight in tons per hour, if
P is greater than 60,000 lbs/hr (30 tons/hr).

326 IAC 8-2-5 (Volatile Organic Compounds)

This paper coating operation is subject to 326 IAC 8-2-5, (Paper Coating Operations). Pursuant to 326 IAC 8-2-5 (Paper Coating Operations), the volatile organic compound (VOC) content of coatings applied to labels of any substrate, or pressure sensitive tapes, or paper, plastic or metal foil by means of web coating shall be limited to 2.9 pounds VOC per gallon of coating less water delivered to the applicator.

326 IAC 8-4-3 (Petroleum Liquid Storage Facilities)

The storage tanks of this source are not subject to 326 IAC 8-4-3 because the tanks are not "petroleum liquid" storage facilities.

326 IAC 8-3 (Degreasing Operations)

Parts Cleaners CC-1, CC-2 and CC-3 are not subject to any of the requirements of 326 IAC 8-3 because the cleaners are alkaline cleaners, not solvent cleaners.

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.

This source will emit levels of air toxics less than those which constitute a major source according to Section 112 of the 1990 Amendments to Clean Air Act.

Conclusion

The operation of this paper coating operation will be subject to the conditions of the attached proposed **Construction Permit No. CP005-9965-00087**.

Indiana Department of Environmental Management Office of Air Management

Addendum to the Technical Support Document for New Construction and Operation

Source Name: MACtac
Source Location: 2576 Norcross Drive, Columbus, Indiana 47201
County: Bartholomew
Construction Permit No.: CP-005-9965-00087
SIC Code: 2672
Permit Reviewer: SDF

On March 23, 1999, the Office of Air Management (OAM) had a notice published in The Republic, Columbus, Indiana, stating that MACtac had applied for a construction permit to construct and operate a paper coating operation. 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.

On April 16, 1999, MACtac submitted comments on the proposed construction permit. The summary of the comments and corresponding responses is as follows:

1. **Comment 1:**

Page 6, General Construction Conditions B.1(a) and B.8.(a) states that "prior to any proposed change in construction which may affect allowable emissions, the change must be approved by the Office of Air Management (OAM)". Please clarify if 'allowable emissions' as used in this condition equates to 'potential emissions' that have been calculated. We also interpret this to mean that proposed changes would not include those changes or modifications meeting the requirements of 326 IAC 2-1-1((b)(3)(A & B)).

Response 1:

Conditions B.1 and B.8 have wording in them related to allowable emissions. For future changes to the operations, the new rules are dependent upon "potential to emit" and not "allowable emissions". Depending upon which operation permit the company chooses, it will be the "Potential to Emit" which will determine the level of permitting in most cases.

2. **Comment 2:**

Page 8, Condition B.9, requires the source to have a preventive maintenance plan for the paper coating operation. Since MACtac will comply with all requirements without controls this condition should be eliminated.

Response 2:

The Preventive Maintenance Plan (PMP) requirements (Conditions B.9 and D.1.4) shall be removed. All subsequent conditions shall be renumbered.

3. Comment 3:

Page 11, Condition C.8 lists the source sampling procedures as under 326 IAC 3-6. The source sampling procedures in the 1998 Indiana Environmental Regulations reference the source sampling procedures under 326 IAC 3-2.1-5.

Response 3:

Reviewing the rules it is determined that 326 IAC 3-6 is the correct reference for source sampling procedures. 326 IAC 3-2.1-5 has been repealed. Thus, no changes will be made.

4. Comment 4:

Page 18, Condition D.1.7 Compliance Determination Requirements requires that the VOC content limit be demonstrated by using Method 24 and the equations specified in Subpart RR or manufacturer's data. EPA recently approved an alternative test method for Avery Dennison. Thus, the same alternative methods should be incorporated into the permit as a third alternative.

Response 4:

The methods listed in Condition D.1.7 are taken directly from the New Source Performance Standard (NSPS). The NSPS, Subpart RR, specifically allows only two methods to determine the VOC content; Method 24 using the equations specified in Subpart RR or manufacturer's information. These methods were incorporated into the permit. However, 40 CFR 60.8(b) states:

"Performance tests shall be conducted and data reduced in accordance with the test methods and procedures contained in each applicable subpart unless the administrator (1) specifies or approves, in specific cases, the use of a reference method with minor changes in methodology, (2) approves the use of an equivalent method, or (3) approves the use of an alternative method the results of which he has determined to be adequate for indicating whether a specific source is in compliance..."

Thus, Condition D.1.7 shall be amended as follows to allow alternative test methods provided that the test methods are approved by EPA.

D.1.7 Test Methods and Procedures [326 IAC 12] [40 CFR 60.446(a)]

Compliance with the VOC content per unit of coating solids limit of Condition D.1.1 shall be determined by using either:

- (a) Reference Method 24 and the equations specified in Condition D.1.5, or
- (b) manufacturers' formulation data.

In the event of any inconsistency between a Method 24 test and manufacturers' formulation data, the Method 24 test will govern. The Commissioner may require an owner or operator to perform Method 24 tests during such months as he or she deems appropriate. For Reference Method 24, the coating sample must be a one liter sample taken into a one liter container at a point where the sample will be representative of the coating applied to the web substrate.

The owner or operator may use alternative performance test methods provided:

1. the alternative method has been approved by the U.S. EPA, and
2. the owner or operator notifies the Indiana Department of Environmental Management within 30 days of the proposed change in the performance test method. Said notification shall be sent to:

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

5. Comment 5:

MACtac assumes that testing to determine VOC content or use of manufacturer's formulation data need only be performed once per coating unless the formulation changes. Also Condition D.1.9(b) notes that if no exceedances occur during a particular quarter, semi-annual reports stating this shall be submitted to the Administrator. Should this be sent to the Administrator or IDEM?

Response 5:

According to Subpart RR, the owner or operation shall keep monthly records of all coatings used and the results of Method 24 test or manufacturer's formulation data. The records of all coatings used shall be generated each month, but as long as there is no change in the coatings or coating formulations, then the previous month's information can be used.

Administrator is defined as the Administrator of EPA or his authorized representative. IDEM is the authorized representative. So the reports should be sent to IDEM. The Administrator wording will remain unchanged.

6. Comment 6:

Section D.2 lists the maximum daily parts cleaner usage as part of the process description for this section. Since there are no emission standards or limitations that apply to these cleaners, MACtac assumes that cleaner usage is not restricted exactly to these quantities as long as usage is reasonable.

Response 6:

The descriptions that are listed in the box that prefaces each D Section is information that was obtained from the applicant and was used to establish the actual permit conditions that follow. These descriptions are treated the same as those in the A Section and not considered to be directly enforceable. The descriptions of the equipment would only be considered enforceable if explicitly stated in a permit condition. The descriptions should be considered very carefully because, just like the A Section descriptions, changes can affect compliance with existing applicable requirements or trigger new applicable requirements. New requirements may include the need to obtain a revision to this permit prior to affecting the change. There is no need to revise the permit to further address this issue.

7. Comment 7:

Condition D.3.1 requires that the PM emission limit for the sources of indirect heating should not be 0.37 lb PM/MMBtu, but 0.63 lb PM/MMBtu because the total source combustion capacity was used instead of only the total source indirect heating capacity.

Response 7:

Pursuant to 326 IAC 6-2-4, "Q" of the equation used to determine the indirect heating unit PM limit should be the total source "indirect" heating unit capacity. The limit placed in Condition D.3.1 was estimated using the total source capacity (the capacity of all combustion units).

Therefore, the adjusted PM limit under 326 IAC 6-2-4 shall be corrected based on the total source "indirect" heating capacity. Based on the total source indirect heating capacity (Q) of 16.74 MMBtu/hr (Boilers B1 and B2), the corrected PM limit is estimated to be 0.52 lb PM/MMBtu.

$$P_t = 1.09/[16.74 \text{ MMBtu/hr}]^{0.26} = 0.52 \text{ lb PM/MMBtu}$$

Therefore, the indirect heating condition, Condition D.3.1 shall be corrected to be 0.052 lb PM/MMBtu. The TSD shall be corrected as well.

8. Comment 8:

Page 2 of the emission calculations in the TSD references combustion spreadsheets. The combustion reference should be removed.

Response 8:

The combustion reference shall be removed.

9. Comment 9:

The tank emissions should be subtracted from the paper coating operation calculation emissions because including them in with the paper coating operation emissions double counts them.

Response 9:

The tank VOC emissions (1.81 ton/yr) can and will be subtracted from the paper coating operation emissions. The TSD will be adjusted accordingly as well.

10. Comment 10:

The VOC, CO, and NOx emissions are in the wrong places in the table.

Response 10:

The VOC, NOx, and CO emissions will be placed in the appropriate sections of the table.

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

Company Name: MACTac
Address City IN Zip: 2576 Norcross Drive, Columbus, IN
CP: 005-9965
Plt ID: 005-00087
Reviewer: SDF
Date: 08-23-98

Heat Input Capacity
MMBtu/hr

Potential Throughput
MMCF/yr

8.4

73.3

Pollutant

	PM	PM10	SO2	NOx	VOC	CO
Emission Factor in lb/MMCF	5.0	5.0	0.6	76.0	5.5	84.0
Potential Emission in tons/yr	0.2	0.2	0.0	2.8	0.2	3.1

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

Company Name: MACTac
Address City IN Zip: 2576 Norcross Drive, Columbus, IN
CP: 005-9965
Plt ID: 005-00087
Reviewer: SDF
Date: 08-23-98

Heat Input Capacity
MMBtu/hr

Potential Throughput
MMCF/yr

8.4

73.3

Pollutant

	PM	PM10	SO2	NOx	VOC	CO
Emission Factor in lb/MMCF	5.0	5.0	0.6	76.0	5.5	84.0
Potential Emission in tons/yr	0.2	0.2	0.0	2.8	0.2	3.1

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

Company Name: MACtac
Address City IN Zip: 2576 Norcross Drive, Columbus, IN
CP: 005-9965
Plt ID: 005-00087
Reviewer: SDF
Date: 08-23-98

Heat Input Capacity
MMBtu/hr

Potential Throughput
MMCF/yr

19.2

168.2

Pollutant

	PM	PM10	SO2	NOx	VOC	CO
Emission Factor in lb/MMCF	5.0	5.0	0.6	76.0	5.5	84.0
Potential Emission in tons/yr	0.4	0.4	0.1	6.4	0.5	7.1

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

Company Name: MACTac
Address City IN Zip: 2576 Norcross Drive, Columbus, IN
CP: 005-9965
Plt ID: 005-00087
Reviewer: SDF
Date: 08-23-98

Heat Input Capacity
 MMBtu/hr

Potential Throughput
 MMCF/yr

1.6

13.8

Pollutant

	PM	PM10	SO2	NOx	VOC	CO
Emission Factor in lb/MMCF	5.0	5.0	0.6	76.0	5.5	84.0
Potential Emission in tons/yr	0.0	0.0	0.0	0.5	0.0	0.6

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

**Company Name: MACTac
Address City IN Zip: 2576 Norcross Drive, Columbus, IN
CP: 005-9965
Plt ID: 005-00087
Reviewer: SDF
Date: 08-23-98**

Heat Input Capacity
MMBtu/hr

Potential Throughput
MMCF/yr

11.0

96.4

Pollutant

	PM	PM10	SO2	NOx	VOC	CO
Emission Factor in lb/MMCF	5.0	5.0	0.6	76.0	5.5	84.0
Potential Emission in tons/yr	0.2	0.2	0.0	3.7	0.3	4.0

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

Company Name: MACtac
Address City IN Zip: 2576 Norcross Drive, Columbus, IN
CP: 005-9965
Plt ID: 005-00087
Reviewer: SDF
Date: 08-23-98

Heat Input Capacity
MMBtu/hr

Potential Throughput
MMCF/yr

10.4

90.7

Pollutant

	PM	PM10	SO2	NOx	VOC	CO
Emission Factor in lb/MMCF	5.0	5.0	0.6	76.0	5.5	84.0
Potential Emission in tons/yr	0.2	0.2	0.0	3.4	0.2	3.8

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

Company Name: MACTac
Address City IN Zip: 2576 Norcross Drive, Columbus, IN
CP: 005-9965
Plt ID: 005-00087
Reviewer: SDF
Date: 08-23-98

Heat Input Capacity
 MMBtu/hr

Potential Throughput
 MMCF/yr

5.175

45.3

Pollutant

	PM	PM10	SO2	NOx	VOC	CO
Emission Factor in lb/MMCF	5.0	5.0	0.6	76.0	5.5	84.0
Potential Emission in tons/yr	0.1	0.1	0.0	1.7	0.1	1.9

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

**Company Name: MACTac
Address City IN Zip: 2576 Norcross Drive, Columbus, IN
CP: 005-9965
Plt ID: 005-00087
Reviewer: SDF
Date: 08-23-98**

Heat Input Capacity
MMBtu/hr

Potential Throughput
MMCF/yr

0.027

0.2

Pollutant

	PM	PM10	SO2	NOx	VOC	CO
Emission Factor in lb/MMCF	5.0	5.0	0.6	76.0	5.5	84.0
Potential Emission in tons/yr	0.0	0.0	0.0	0.0	0.0	0.0

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

Company Name: MACtac
Address City IN Zip: 2576 Norcross Drive, Columbus, IN
CP: 005-9965
Plt ID: 005-00087
Reviewer: SDF
Date: 08-23-98

Heat Input Capacity
MMBtu/hr

Potential Throughput
MMCF/yr

0.025

0.2

Pollutant

	PM	PM10	SO2	NOx	VOC	CO
Emission Factor in lb/MMCF	5.0	5.0	0.6	76.0	5.5	84.0
Potential Emission in tons/yr	0.0	0.0	0.0	0.0	0.0	0.0

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

Company Name: MACTac
Address City IN Zip: 2576 Norcross Drive, Columbus, IN
CP: 005-9965
Plt ID: 005-00087
Reviewer: SDF
Date: 08-23-98

Heat Input Capacity
MMBtu/hr

Potential Throughput
MMCF/yr

0.025

0.2

Pollutant

	PM	PM10	SO2	NOx	VOC	CO
Emission Factor in lb/MMCF	5.0	5.0	0.6	76.0	5.5	84.0
Potential Emission in tons/yr	0.0	0.0	0.0	0.0	0.0	0.0

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

Company Name: MACtac
Address City IN Zip: 2576 Norcross Drive, Columbus, IN
CP: 005-9965
Plt ID: 005-00087
Reviewer: SDF
Date: 08-23-98

Heat Input Capacity
MMBtu/hr

Potential Throughput
MMCF/yr

0.200

1.8

Pollutant

	PM	PM10	SO2	NOx	VOC	CO
Emission Factor in lb/MMCF	5.0	5.0	0.6	76.0	5.5	84.0
Potential Emission in tons/yr	0.0	0.0	0.0	0.1	0.0	0.1

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

Company Name: MACTac
Address City IN Zip: 2576 Norcross Drive, Columbus, IN
CP: 005-9965
Plt ID: 005-00087
Reviewer: SDF
Date: 08-23-98

Heat Input Capacity
MMBtu/hr

Potential Throughput
MMCF/yr

0.200

1.8

Pollutant

	PM	PM10	SO2	NOx	VOC	CO
Emission Factor in lb/MMCF	5.0	5.0	0.6	76.0	5.5	84.0
Potential Emission in tons/yr	0.0	0.0	0.0	0.1	0.0	0.1

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

Company Name: MACtac
Address City IN Zip: 2576 Norcross Drive, Columbus, IN
CP: 005-9965
Plt ID: 005-00087
Reviewer: SDF
Date: 08-23-98

Heat Input Capacity
MMBtu/hr

Potential Throughput
MMCF/yr

0.050

0.4

Pollutant

	PM	PM10	SO2	NOx	VOC	CO
Emission Factor in lb/MMCF	5.0	5.0	0.6	76.0	5.5	84.0
Potential Emission in tons/yr	0.0	0.0	0.0	0.0	0.0	0.0

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

Company Name: MACTac
Address City IN Zip: 2576 Norcross Drive, Columbus, IN
CP: 005-9965
Plt ID: 005-00087
Reviewer: SDF
Date: 08-23-98

Heat Input Capacity
MMBtu/hr

Potential Throughput
MMCF/yr

0.024

0.2

Pollutant

	PM	PM10	SO2	NOx	VOC	CO
Emission Factor in lb/MMCF	5.0	5.0	0.6	76.0	5.5	84.0
Potential Emission in tons/yr	0.0	0.0	0.0	0.0	0.0	0.0

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

Company Name: MACTac
Address City IN Zip: 2576 Norcross Drive, Columbus, IN
CP: 005-9965
Plt ID: 005-00087
Reviewer: SDF
Date: 08-23-98

Heat Input Capacity
MMBtu/hr

Potential Throughput
MMCF/yr

0.008

0.1

Pollutant

	PM	PM10	SO2	NOx	VOC	CO
Emission Factor in lb/MMCF	5.0	5.0	0.6	76.0	5.5	84.0
Potential Emission in tons/yr	0.0	0.0	0.0	0.0	0.0	0.0

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

**Company Name: MACTac
Address City IN Zip: 2576 Norcross Drive, Columbus, IN
CP: 005-9965
Plt ID: 005-00087
Reviewer: SDF
Date: 08-23-98**

Heat Input Capacity
MMBtu/hr

Potential Throughput
MMCF/yr

0.010

0.1

Pollutant

	PM	PM10	SO2	NOx	VOC	CO
Emission Factor in lb/MMCF	5.0	5.0	0.6	76.0	5.5	84.0
Potential Emission in tons/yr	0.0	0.0	0.0	0.0	0.0	0.0

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

Company Name: MACtac
Address City IN Zip: 2576 Norcross Drive, Columbus, IN
CP: 005-9965
Plt ID: 005-00087
Reviewer: SDF
Date: 08-23-98

Heat Input Capacity
MMBtu/hr

Potential Throughput
MMCF/yr

0.217

1.9

Pollutant

	PM	PM10	SO2	NOx	VOC	CO
Emission Factor in lb/MMCF	5.0	5.0	0.6	76.0	5.5	84.0
Potential Emission in tons/yr	0.0	0.0	0.0	0.1	0.0	0.1

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

Company Name: MACTac
Address City IN Zip: 2576 Norcross Drive, Columbus, IN
CP: 005-9965
Plt ID: 005-00087
Reviewer: SDF
Date: 08-23-98

Heat Input Capacity
MMBtu/hr

Potential Throughput
MMCF/yr

0.770

6.7

Pollutant

	PM	PM10	SO2	NOx	VOC	CO
Emission Factor in lb/MMCF	5.0	5.0	0.6	76.0	5.5	84.0
Potential Emission in tons/yr	0.0	0.0	0.0	0.3	0.0	0.3

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

Emission Calculations

Wood Parts International

Wood Parts International has submitted an application to permit their existing woodworking operation which consists of the following:

- (1) one (1) wood drying process
- (2) one (1) woodworking operation including three (3) planers, two (2) rip saws, one (1) sander, and one (1) chipper hog, with PM emissions controlled by one (1) Carter-Day baghouse, identified as BH-1, with PM/PM10 emissions exhausted to Stack 01.
- (3) one (1) waste wood storage silo, and
- (4) one (1) 13.4 MMBtu/hr wood-fired boiler with emissions exhausted to Stack 02.

Wood products International is a woodworking operation. Wood is first dried in the dryer, and then processed into the finished product. Waste wood from the ripsaws are ground in the chipper hog. The ground waste wood, fugitives from the chipper hog and woodworking equipment are collected by the baghouse and conveyed to the storage silo, where the waste wood is eventually fed into and combusted by the boiler. The boiler provides both the wood dryer heat and heat for the interior of the building.

The emissions generated by this woodworking operation are PM and PM10 from the wood-working operation and combustion emissions which include the criteria pollutants (PM, PM10, SO2, NOx, VOC, and CO) and HAPs in the form of VOCs. The baghouse controls the wood-working emissions.

The following calculations determine the potential to emit (PTE) and the allowable emissions.

Potential to Emit (PTE):

The following calculations determine the PTE emissions generated by this source.

A. Woodworking Operation (PM is determined to be equal to PM10):

The following calculations determine the PM/PM10 PTE based on emissions controlled by a baghouse with a design outlet grain loading of 0.002 gr/dscf, an air flow rate of 48,000 dscfm, emissions after controls, and 8,760 hours of operation:

$$\text{gr/dscf} * \text{dscf/min} * 60 \text{ min/hr} * 8760 \text{ hr/yr} * 1/7000 \text{ lb/gr} * 1/2000 \text{ ton/lb} = \text{tons PM/yr}$$

$$\text{tons PM/yr} * 1/365 \text{ yr/day} * 2000 \text{ lb PM/ton PM} = \text{lb PM/day}$$

	gr/dscf	dscfm	tons/yr	lb/day
Baghouse	0.002	48000	3.60	19.75

B. Wood-Fired Boiler:

The following calculations determine the PTE from the boiler based on wood combustion, a max. input rate of 2.2 tons/hr, 8,760 hours of operation, banak wood combustion, a final moisture content of 8%, and emission factors from AP-42, Chapter 1.6.

$$X \text{ lb PM/ton wood} * 0.38 \text{ ton wood/hr} * 8760 \text{ hr/yr} * 1/2000 \text{ ton PM/lb PM} = \text{ton PM/yr}$$

$$\text{ton PM/yr} * 1/365 \text{ yr/day} * 2000 \text{ lb PM/ton PM} = \text{lb PM/day}$$

	PM	PM10	SO2	NOx	VOC	CO
Ef, lb/ton	8.8	8.8	0.075	1.5	0.22	13.6
	tons/yr	tons/yr	tons/yr	tons/yr	tons/yr	tons/yr
B-1	14.61	14.61	0.12	2.49	0.37	22.58
	lb/day	lb/day	lb/day	lb/day	lb/day	lb/day
B-1	80.06	80.06	0.65	13.65	2.03	123.74

The following calculations determine the HAP PTE from boiler B-1 based on a maximum input rate of 0.38 tons/hr, 8,760 hr/yr, and AP-42 emission factors, Chapter 1.6.

$$X \text{ lb PM/ton wood} * 0.38 \text{ ton wood/hr} * 8760 \text{ hr/yr} * 1/2000 \text{ ton PM/lb PM} = \text{ton PM/yr}$$

Pollutant	Ef, lb/ton	tons/yr
Phenols	1.2E-04	1.99E-04
Acenaphthene	4.3E-06	7.14E-06
Fluorene	2.8E-05	4.65E-05
Phenanthrene	1.8E-04	2.99E-04
Anthracene	3.5E-04	5.81E-04
Fluoranthene	8.6E-04	1.43E-03
Pyrene	5.9E-05	9.79E-05
Benzo(a)anthracene	6.4E-06	1.06E-05
Benzo(b+k)fluoranthene	1.9E-04	3.15E-04
Benzo(a)pyrene	3E-07	4.98E-07
Benzo(g,h,i)perylene	3.5E-06	5.81E-06
Chrysene	3.0E-04	4.98E-04
Indeno(1,2,3,c,d)pyrene	6E-07	9.96E-07
Polychlorinated dibenzo-p-dioxins	3.3E-08	5.48E-08

Polychlorinated dibenzo-p-furans	7.2E-08	1.20E-07
Acenaphthylene	6.8E-05	1.13E-04
Pyrene	9E-06	1.49E-05
Methyl Anthracene	1.4E-04	2.32E-04
Acrolein	4E-06	6.64E-06
Solicyladehyde	2.3E-05	3.82E-05
Benzaldehyde	1.2E-05	1.99E-05
Formaldehyde	3.3E-02	5.48E-02
Acetaldehyde	2.4E-02	3.98E-02
Benzene	1.3E-02	2.16E-02
Naphthalene	5.8E-03	9.63E-03
2,3,7,8-Tetrachlorodibenzo-p-dioxin	5.11E-11	8.48E-11
Total		0.13

Allowable Emissions:

The following calculations determine the allowable emissions from this source.

A. Woodworking Operation (PM is determined to be equal to PM10):

The PM emissions generated by the woodworking operation are limited by 326 IAC 6-3. Pursuant to 326 IAC 6-3, the allowable PM emissions for a process weight rate of 2.2 tons per hour is determined as follows:

$$E = 4.10 P^{0.67} = \text{lb PM/hr}$$

$$\text{lb PM/hr} * 8760 \text{ hr/yr} * 1/2000 \text{ ton PM/lb PM} = \text{ton PM/yr}$$

$$\text{ton PM/yr} * 1/365 \text{ yr/day} * 2000 \text{ lb/ton} = \text{lb PM/day}$$

Combined Process Weight Rate, ton/hr	Allowable PM lb/hr	Allowable PM ton/yr	Allowable PM lb/day
2.20	6.95	30.46	166.89

B. Wood-Fired Boiler:

The allowable PM emissions from the proposed boiler are limited pursuant to 326 IAC 6-2. Pursuant to 326 IAC 6-2, the allowable PM emissions for a boiler with a maximum capacity of 13.4 MMBtu/hr is determined to be 0.56 lb/MMBtu,

$$\text{lb PM/MMBtu} = 1.09 / Q^{0.26}$$

where: Q = source capacity, MMBtu/hr

$$0.56 \text{ lb PM/MMBtu} * 13.4 \text{ MMBtu/hr} * 8760 \text{ hr/yr} * 1/2000 \text{ ton PM/lb PM} = 32.87 \text{ ton PM/yr}$$

$$32.87 \text{ ton PM/yr} * 1/365 \text{ yr/day} * 2000 \text{ lb/ton} = 180.11 \text{ lb PM/day}$$

Point	Allowable PM lb/MMBtu	Allowable PM ton/yr	Allowable PM lb/day
13.4 MMBtu/hr	0.56	32.87	180.11

All other boiler pollutant allowable emissions are equal to the estimated PTE. A summary of the adjusted allowable emissions for boiler B-1 are listed below:

	PM	PM10	SO2	NOx	VOC	CO
	tons/yr	tons/yr	tons/yr	tons/yr	tons/yr	tons/yr
B-1	32.87	32.87	0.12	2.49	0.37	22.58
	lb/day	lb/day	lb/day	lb/day	lb/day	lb/day
B-1	180.11	180.11	0.65	13.65	2.03	123.74

Rule Applicability:

Prevention of Significant Deterioration (PSD) Requirements [326 IAC 2-2]:

The potential emissions after controls are less than applicable level of 250 tons per year. Thus, 326 IAC 2-2 is not applicable in this case.

	tons/yr	tons/yr	tons/yr	tons/yr	tons/yr	tons/yr
B-1	14.61	14.61	0.12	2.49	0.37	22.58
BH-1	3.60	3.60	-	-	-	-
total	18.21	18.21	0.12	2.49	0.37	22.58

App. Level	250 tons/yr	N/A	250 tons/yr	250 tons/yr	250 tons/yr	250 tons/yr

State Construction Permits [326 IAC 2-1-3]:

Pursuant to 326 IAC 2-1-3, sources with allowable emissions of twenty-five (25) tons per year of any regulated pollutant, ten (10) tons per year of any single HAP, or twenty-five (25) tons per shall obtain a construction permit.

The allowable emissions are the lesser of the PTE and any allowable emissions rate established based on a limitation required by a state or federal rule. The PM PTE from the woodworking operation (3.60 tons/yr) is less than the allowable rate under 326 IAC 6-3 (30.46 tons/yr). Thus, the adjusted allowable rate for the woodworking operation is the lesser value of 3.6 tons/yr. The PM PTE from boiler B-1 (14.61 tons/yr) is less than the allowable rate under 326 IAC 6-2 (32.87 tons/yr). Thus, the adjusted allowable rate for the woodworking operation is the lesser value of 14.61 tons/yr. The allowable rate of all other pollutant emissions is equivalent to the estimated PTE.

	PM tons/yr	PM10 tons/yr	SO2 tons/yr	NOx tons/yr	VOC tons/yr	CO tons/yr
B-1	14.61	14.61	0.12	2.49	0.37	22.58
BH-1	3.60	3.60	-	-	-	-
total	18.21	18.21	0.12	2.49	0.37	22.58

app. Levels	25 tons/yr	N/A	25 tons/yr	25 tons/yr	25 tons/yr	25 tons/yr
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Largest Single HAP tons/yr	Combined HAPs tons/yr
0.055	0.13

Applicable Level	10 tons/yr	25 tons/yr
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Since the allowable criteria pollutant and HAP emissions are less than their respective applicable thresholds, 326 IAC 2-1-3 is not applicable in this case.

Registrations [326 IAC 2-1-2]:

Pursuant to 326 IAC 2-1-2, sources with allowable emissions greater than the daily emission levels specified in 326 IAC 2-1-1(b)(2) shall be registered.

	PM lb/day	PM10 lb/day	SO2 lb/day	NOx lb/day	VOC lb/day	CO lb/day
boiler	80.06	80.06	0.65	13.65	2.03	123.74
baghouse	19.75	19.75	-	-	-	-
total	99.81	99.81	0.65	13.65	2.03	123.74

app. Levels	25 lb/day	N/A	50 lb/day	25 lb/day	15 lb/day	125 lb/day
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The PM emissions (99.81 lb/day) exceed the applicable threshold of 25 lb/day. Thus, the proposed woodworking operation shall be registered.

Malfunctions [326 IAC 1-6]:

Pursuant to 326 IAC 1-6, the owner or operator of any facility required to obtain a permit under 326 IAC 2-1-2 and 326 IAC 2-1-4 shall meet the requirements of this rule. Since the proposed boiler is to be registered under 326 IAC 2-1-2, the requirements of 326 IAC 1-6 apply.

Pursuant to 326 IAC 1-6:

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.

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.

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).

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.

Stack Height Provisions [326 IAC 1-7]:

Pursuant to 326 IAC 1-7, all sources with exhaust gas stacks which have potential PM or SO₂ emissions greater than 25 tons/yr are subject to the stack height provisions of this rule.

The stack height provisions of 326 IAC 1-7 do not apply because neither Stack 01 or Stack 02 have potential PM or SO₂ emissions that exceed the applicable threshold of twenty-five (25) tons per year.

Emission Reporting [326 IAC 2-6]:

Pursuant to 326 IAC 2-6-1, sources with PM₁₀, SO₂, NO_x, VOC, or CO emissions greater than one hundred (100) tons per year, are subject to the requirements of this rule. Since no pollutant emissions exceed their respective applicable levels, the emission reporting requirements of 326 IAC 2-6-1 do not apply in this case.

Opacity Limitations [326 IAC 5]:

This source is subject to 326 IAC 5-1-2, opacity limitations. Pursuant to this rule, 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% opacity in 24 consecutive readings.
- (b) visible emissions shall not exceed 60% opacity for more than a cumulative total of 15 minutes (60 readings) in a 6-hour period.

PM Emission Limitations for Sources of Indirect Heating [326 IAC 6-2]:

Boiler B-1 is subject to 326 IAC 6-2. Pursuant to this rule, the allowable PM emissions for an operation with a maximum source capacity of 13.4 MMBtu/hr is determined to be 0.56 lb PM/MMBtu.

$$\text{lb PM/MMBtu} = 1.09 / Q^{0.26}$$

where: Q = source capacity, MMBtu/hr

$$1.09 / 13.4^{0.26} = 0.56 \text{ lb PM/MMBtu}$$

Based on the emission calculations below, the estimated PM emissions from boiler B-1 are 0.51 lb/MMBtu before controls.

Compliance to the limit is determined based on a new higher heating value submitted by Grauvogel and Associates as additional information on August 26, 1998. The new higher heating value is 8,600 Btu/lb.

$$8.8 \text{ lb PM/ton w} * 1/2000 \text{ ton w/lb w} * 1/8600 \text{ lb w/Btu} * 1\text{E}6 \text{ Btu/MMBtu} = 0.51 \text{ lb PM/MMBtu}$$

Thus, compliance is determined to be achieved.

The estimated PM emissions (0.51 lb PM/MMBtu) are less than the allowable rate of 0.56 lb/MMBtu. Thus, compliance is determined to be achieved.

PM Emission Limitations for Process Operations [326 IAC 6-3-2]:

The PM emissions generated by the woodworking operation are limited by 326 IAC 6-3. Pursuant to 326 IAC 6-3, the allowable PM emissions for a process weight rate of 2.2 tons per hour is determined to be 6.95 lb PM/hr.

$$E = 4.10 P^{0.67} = \text{lb PM/hr}$$

$$\text{lb PM/hr} * 8760 \text{ hr/yr} * 1/2000 \text{ ton PM/lb PM} = \text{ton PM/yr}$$

$$\text{ton PM/yr} * 1/365 \text{ yr/day} * 2000 \text{ lb/ton} = \text{lb PM/day}$$

Combined Process Weight Rate, ton/hr	Allowable PM lb/hr	Allowable PM ton/yr	Allowable PM lb/day
2.20	6.95	30.46	166.89

Based on the above calculations, the PM emissions from the woodworking area after controls is estimated to be 19.75 lb/day or 0.82 lb PM/hr, which is less than the limit. Thus, compliance is determined to be achieved.

New Source Performance Standards (NSPS) [326 IAC 12 (40 CFR 60)]:

Subpart Dc Standards of Performance for Small Commercial Institutional Steam Generating Units:

Pursuant to 40 CFR 60, Subpart Dc, Standards of Performance for Small Commercial Institutional Steam Generating Units, units for which construction, reconstruction, or modification is commenced after June 9, 1989 and which has a maximum design heat input capacity greater than or equal to 10 MMBtu/hr but less than 100 MMBtu/hr are subject to this rule. The proposed boiler is was constructed after June 9, 1989 and has a design capacity of 13.4 MMBtu/hr. Thus, this rule applies.

Pursuant to 326 IAC 12 and 40 CFR 60.40c - 60.48c, the following requirements apply or do not apply as follows:

SO2 limits [40 CFR 60.42c]:

The SO2 emission limitations of 40 CFR 60.42c do not apply to proposed boiler B-1 because this section applies to boilers that combust coal only, coal refuse alone in a fluidized bed, coal alone that uses an emerging technology, coal in conjunction with any other fuel, oil, coal and oil, or coal and oil with any other fuel type. Boiler B-1 combusts wood.

PM and Opacity Limitations [40 CFR 60.43c]:

The PM emission limitations of 40 CFR 60.42c(a) do not apply because this section applies only to boilers combusting coal, coal mixtures with other fuels, and has a heat capacity of 30 MMBtu/hr or greater. The proposed boiler combusts wood and has a capacity of 13.4 MMBtu/hr.

The PM and opacity limitations of 40 CFR 60.43c(b) - (d) do not apply because the boiler capacity, (13.4 MMBtu/hr) is less than the applicable capacity of 30 MMBtu/hr.

Compliance and Performance Test Requirements for SO₂ [40 CFR 60.44c]:

The compliance and performance test requirements under 40 CFR 60.44c do not apply because there are no SO₂ standards that apply to proposed boiler B-1.

Compliance and Performance Test Requirements for PM [40 CFR 60.45c]:

The compliance and performance test requirements under 40 CFR 60.45c do not apply because there are no PM standards that apply to proposed boiler B-1.

Emission Monitoring for SO₂ [40 CFR 60.46c]:

The emission monitoring requirements of 40 CFR 60.46c do not apply because there are no SO₂ standards that apply to proposed boiler B-1.

Emission Monitoring for PM [40 CFR 60.47c]:

The emission monitoring requirements of 40 CFR 60.47c do not apply because there are no PM standards that apply to proposed boiler B-1.

Reporting and Record Keeping Requirements [40 CFR 60.48c]:

Pursuant to this section, the owner or operator shall submit notifications. Said notifications shall include the date of construction, anticipated startup, and actual startup, as provided in 40 CFR 60.7. The notification shall also include:

- (1) the design heat input capacity of boiler B-1 and identification of the fuels to be combusted in said boiler.
- (2) The annual capacity factor at which the owner or operator anticipates operating boiler B-1 based on all fuels fired and based on each individual fuel fired.
- (3) Notification if an emerging technology will be used for controlling SO₂ emissions. Said notification shall be examined by the Commissioner, who will determine if the technology qualifies as an emerging technology. In making this determination, the administrator may require the owner or operator of boiler 101 to submit additional information concerning the control device. Until such time the Commissioner approves said emerging technology, the boiler shall be operated under its approved operating conditions.

The date of construction shall be submitted no later than 30 days after such date, the anticipated startup shall be submitted not more than 60 days or less than 30 days prior to such date, and the actual startup shall be submitted within 15 days after such date. Finally, the notification requirements of (1), (2), and (3) shall be submitted within 15 days after actual startup.

Record Keeping [40 CFR 60.48c(g), and (i)]:

The owner or operator of boiler B-1 shall keep records of the amounts of each fuel combusted during each day. These records shall be maintained by the owner or operator for a minimum period of two (2) years following the date of such record.

Exemptions for Combustion Research [40 CFR 60.40c(c) and (d)]:

Since there are no performance testing or monitoring requirements, or limitations on boiler B-1, there is no need to state the exemptions granted for combustion research under 40 CFR 60.40c (c) and (d).

National Emission Standards for Hazardous Air Pollutants [40 CFR 61]:

There are no emission standards under this part that apply to the proposed boiler.

National Emission Standards for Hazardous Air Pollutants [40 CFR 63]:

There are no emission standards under this part that apply to the proposed boiler.

Emission Calculations

Wood Parts International

Wood Parts International has submitted an application to permit their existing woodworking operation which consists of the following:

- (1) one (1) wood drying process
- (2) one (1) woodworking operation including three (3) planers, two (2) rip saws, one (1) sander, and one (1) chipper hog, with PM emissions controlled by one (1) Carter-Day baghouse, identified as BH-1, with PM/PM10 emissions exhausted to Stack 01.
- (3) one (1) waste wood storage silo, and
- (4) one (1) 13.4 MMBtu/hr wood-fired boiler with emissions exhausted to Stack 02.

Wood products International is a woodworking operation. Wood is first dried in the dryer, and then processed into the finished product. Waste wood from the ripsaws are ground in the chipper hog. The ground waste wood, fugitives from the chipper hog and woodworking equipment are collected by the baghouse and conveyed to the storage silo, where the waste wood is eventually fed into and combusted by the boiler. The boiler provides both the wood dryer heat and heat for the interior of the building.

The emissions generated by this woodworking operation are PM and PM10 from the wood-working operation and combustion emissions which include the criteria pollutants (PM, PM10, SO2, NOx, VOC, and CO) and HAPs in the form of VOCs. The baghouse controls the wood-working emissions.

The following calculations determine the potential to emit (PTE) and the allowable emissions.

Potential to Emit (PTE):

The following calculations determine the PTE emissions generated by this source.

A. Woodworking Operation (PM is determined to be equal to PM10):

The following calculations determine the PM/PM10 PTE based on emissions controlled by a baghouse with a design outlet grain loading of 0.002 gr/dscf, an air flow rate of 48,000 dscfm, emissions after controls, and 8,760 hours of operation:

$$\text{gr/dscf} * \text{dscf/min} * 60 \text{ min/hr} * 8760 \text{ hr/yr} * 1/7000 \text{ lb/gr} * 1/2000 \text{ ton/lb} = \text{tons PM/yr}$$

$$\text{tons PM/yr} * 1/365 \text{ yr/day} * 2000 \text{ lb PM/ton PM} = \text{lb PM/day}$$

	gr/dscf	dscfm	tons/yr	lb/day
Baghouse	0.002	48000	3.60	19.75

B. Wood-Fired Boiler:

The following calculations determine the PTE from the boiler based on wood combustion, a max. input rate of 2.2 tons/hr, 8,760 hours of operation, banak wood combustion, a final moisture content of 8%, and emission factors from AP-42, Chapter 1.6.

$$X \text{ lb PM/ton wood} * 0.38 \text{ ton wood/hr} * 8760 \text{ hr/yr} * 1/2000 \text{ ton PM/lb PM} = \text{ton PM/yr}$$

$$\text{ton PM/yr} * 1/365 \text{ yr/day} * 2000 \text{ lb PM/ton PM} = \text{lb PM/day}$$

	PM	PM10	SO2	NOx	VOC	CO
Ef, lb/ton	8.8	8.8	0.075	1.5	0.22	13.6
	tons/yr	tons/yr	tons/yr	tons/yr	tons/yr	tons/yr
B-1	14.61	14.61	0.12	2.49	0.37	22.58
	lb/day	lb/day	lb/day	lb/day	lb/day	lb/day
B-1	80.06	80.06	0.65	13.65	2.03	123.74

The following calculations determine the HAP PTE from boiler B-1 based on a maximum input rate of 0.38 tons/hr, 8,760 hr/yr, and AP-42 emission factors, Chapter 1.6.

$$X \text{ lb PM/ton wood} * 0.38 \text{ ton wood/hr} * 8760 \text{ hr/yr} * 1/2000 \text{ ton PM/lb PM} = \text{ton PM/yr}$$

Pollutant	Ef, lb/ton	tons/yr
Phenols	1.2E-04	1.99E-04
Acenaphthene	4.3E-06	7.14E-06
Fluorene	2.8E-05	4.65E-05
Phenanthrene	1.8E-04	2.99E-04
Anthracene	3.5E-04	5.81E-04
Fluoranthene	8.6E-04	1.43E-03
Pyrene	5.9E-05	9.79E-05
Benzo(a)anthracene	6.4E-06	1.06E-05
Benzo(b+k)fluoranthene	1.9E-04	3.15E-04
Benzo(a)pyrene	3E-07	4.98E-07
Benzo(g,h,i)perylene	3.5E-06	5.81E-06
Chrysene	3.0E-04	4.98E-04
Indeno(1,2,3,c,d)pyrene	6E-07	9.96E-07
Polychlorinated dibenzo-p-dioxins	3.3E-08	5.48E-08

Polychlorinated dibenzo-p-furans	7.2E-08	1.20E-07
Acenaphthylene	6.8E-05	1.13E-04
Pyrene	9E-06	1.49E-05
Methyl Anthracene	1.4E-04	2.32E-04
Acrolein	4E-06	6.64E-06
Solicyladehyde	2.3E-05	3.82E-05
Benzaldehyde	1.2E-05	1.99E-05
Formaldehyde	3.3E-02	5.48E-02
Acetaldehyde	2.4E-02	3.98E-02
Benzene	1.3E-02	2.16E-02
Naphthalene	5.8E-03	9.63E-03
2,3,7,8-Tetrachlorodibenzo-p-dioxin	5.11E-11	8.48E-11
Total		0.13

Allowable Emissions:

The following calculations determine the allowable emissions from this source.

A. Woodworking Operation (PM is determined to be equal to PM10):

The PM emissions generated by the woodworking operation are limited by 326 IAC 6-3. Pursuant to 326 IAC 6-3, the allowable PM emissions for a process weight rate of 2.2 tons per hour is determined as follows:

$$E = 4.10 P^{0.67} = \text{lb PM/hr}$$

$$\text{lb PM/hr} * 8760 \text{ hr/yr} * 1/2000 \text{ ton PM/lb PM} = \text{ton PM/yr}$$

$$\text{ton PM/yr} * 1/365 \text{ yr/day} * 2000 \text{ lb/ton} = \text{lb PM/day}$$

Combined Process Weight Rate, ton/hr	Allowable PM lb/hr	Allowable PM ton/yr	Allowable PM lb/day
2.20	6.95	30.46	166.89

B. Wood-Fired Boiler:

The allowable PM emissions from the proposed boiler are limited pursuant to 326 IAC 6-2. Pursuant to 326 IAC 6-2, the allowable PM emissions for a boiler with a maximum capacity of 13.4 MMBtu/hr is determined to be 0.56 lb/MMBtu,

$$\text{lb PM/MMBtu} = 1.09 / Q^{0.26}$$

where: Q = source capacity, MMBtu/hr

$$0.56 \text{ lb PM/MMBtu} * 13.4 \text{ MMBtu/hr} * 8760 \text{ hr/yr} * 1/2000 \text{ ton PM/lb PM} = 32.87 \text{ ton PM/yr}$$

$$32.87 \text{ ton PM/yr} * 1/365 \text{ yr/day} * 2000 \text{ lb/ton} = 180.11 \text{ lb PM/day}$$

Point	Allowable PM lb/MMBtu	Allowable PM ton/yr	Allowable PM lb/day
13.4 MMBtu/hr	0.56	32.87	180.11

All other boiler pollutant allowable emissions are equal to the estimated PTE. A summary of the adjusted allowable emissions for boiler B-1 are listed below:

	PM	PM10	SO2	NOx	VOC	CO
	tons/yr	tons/yr	tons/yr	tons/yr	tons/yr	tons/yr
B-1	32.87	32.87	0.12	2.49	0.37	22.58
	lb/day	lb/day	lb/day	lb/day	lb/day	lb/day
B-1	180.11	180.11	0.65	13.65	2.03	123.74

Rule Applicability:

Prevention of Significant Deterioration (PSD) Requirements [326 IAC 2-2]:

The potential emissions after controls are less than applicable level of 250 tons per year. Thus, 326 IAC 2-2 is not applicable in this case.

	tons/yr	tons/yr	tons/yr	tons/yr	tons/yr	tons/yr
B-1	14.61	14.61	0.12	2.49	0.37	22.58
BH-1	3.60	3.60	-	-	-	-
total	18.21	18.21	0.12	2.49	0.37	22.58

App. Level	250 tons/yr	N/A	250 tons/yr	250 tons/yr	250 tons/yr	250 tons/yr

State Construction Permits [326 IAC 2-1-3]:

Pursuant to 326 IAC 2-1-3, sources with allowable emissions of twenty-five (25) tons per year of any regulated pollutant, ten (10) tons per year of any single HAP, or twenty-five (25) tons per shall obtain a construction permit.

The allowable emissions are the lesser of the PTE and any allowable emissions rate established based on a limitation required by a state or federal rule. The PM PTE from the woodworking operation (3.60 tons/yr) is less than the allowable rate under 326 IAC 6-3 (30.46 tons/yr). Thus, the adjusted allowable rate for the woodworking operation is the lesser value of 3.6 tons/yr. The PM PTE from boiler B-1 (14.61 tons/yr) is less than the allowable rate under 326 IAC 6-2 (32.87 tons/yr). Thus, the adjusted allowable rate for the woodworking operation is the lesser value of 14.61 tons/yr. The allowable rate of all other pollutant emissions is equivalent to the estimated PTE.

	PM tons/yr	PM10 tons/yr	SO2 tons/yr	NOx tons/yr	VOC tons/yr	CO tons/yr
B-1	14.61	14.61	0.12	2.49	0.37	22.58
BH-1	3.60	3.60	-	-	-	-
total	18.21	18.21	0.12	2.49	0.37	22.58

app. Levels	25 tons/yr	N/A	25 tons/yr	25 tons/yr	25 tons/yr	25 tons/yr
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Largest Single HAP tons/yr	Combined HAPs tons/yr
0.055	0.13

Applicable Level	10 tons/yr	25 tons/yr
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Since the allowable criteria pollutant and HAP emissions are less than their respective applicable thresholds, 326 IAC 2-1-3 is not applicable in this case.

Registrations [326 IAC 2-1-2]:

Pursuant to 326 IAC 2-1-2, sources with allowable emissions greater than the daily emission levels specified in 326 IAC 2-1-1(b)(2) shall be registered.

	PM lb/day	PM10 lb/day	SO2 lb/day	NOx lb/day	VOC lb/day	CO lb/day
boiler	80.06	80.06	0.65	13.65	2.03	123.74
baghouse	19.75	19.75	-	-	-	-
total	99.81	99.81	0.65	13.65	2.03	123.74

app. Levels	25 lb/day	N/A	50 lb/day	25 lb/day	15 lb/day	125 lb/day
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The PM emissions (99.81 lb/day) exceed the applicable threshold of 25 lb/day. Thus, the proposed woodworking operation shall be registered.

Malfunctions [326 IAC 1-6]:

Pursuant to 326 IAC 1-6, the owner or operator of any facility required to obtain a permit under 326 IAC 2-1-2 and 326 IAC 2-1-4 shall meet the requirements of this rule. Since the proposed boiler is to be registered under 326 IAC 2-1-2, the requirements of 326 IAC 1-6 apply.

Pursuant to 326 IAC 1-6:

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.

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.

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).

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.

Stack Height Provisions [326 IAC 1-7]:

Pursuant to 326 IAC 1-7, all sources with exhaust gas stacks which have potential PM or SO₂ emissions greater than 25 tons/yr are subject to the stack height provisions of this rule.

The stack height provisions of 326 IAC 1-7 do not apply because neither Stack 01 or Stack 02 have potential PM or SO₂ emissions that exceed the applicable threshold of twenty-five (25) tons per year.

Emission Reporting [326 IAC 2-6]:

Pursuant to 326 IAC 2-6-1, sources with PM₁₀, SO₂, NO_x, VOC, or CO emissions greater than one hundred (100) tons per year, are subject to the requirements of this rule. Since no pollutant emissions exceed their respective applicable levels, the emission reporting requirements of 326 IAC 2-6-1 do not apply in this case.

Opacity Limitations [326 IAC 5]:

This source is subject to 326 IAC 5-1-2, opacity limitations. Pursuant to this rule, 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% opacity in 24 consecutive readings.
- (b) visible emissions shall not exceed 60% opacity for more than a cumulative total of 15 minutes (60 readings) in a 6-hour period.

PM Emission Limitations for Sources of Indirect Heating [326 IAC 6-2]:

Boiler B-1 is subject to 326 IAC 6-2. Pursuant to this rule, the allowable PM emissions for an operation with a maximum source capacity of 13.4 MMBtu/hr is determined to be 0.56 lb PM/MMBtu.

$$\text{lb PM/MMBtu} = 1.09 / Q^{0.26}$$

where: Q = source capacity, MMBtu/hr

$$1.09 / 13.4^{0.26} = 0.56 \text{ lb PM/MMBtu}$$

Based on the emission calculations below, the estimated PM emissions from boiler B-1 are 0.51 lb/MMBtu before controls.

Compliance to the limit is determined based on a new higher heating value submitted by Grauvogel and Associates as additional information on August 26, 1998. The new higher heating value is 8,600 Btu/lb.

$$8.8 \text{ lb PM/ton w} * 1/2000 \text{ ton w/lb w} * 1/8600 \text{ lb w/Btu} * 1\text{E}6 \text{ Btu/MMBtu} = 0.51 \text{ lb PM/MMBtu}$$

Thus, compliance is determined to be achieved.

The estimated PM emissions (0.51 lb PM/MMBtu) are less than the allowable rate of 0.56 lb/MMBtu. Thus, compliance is determined to be achieved.

PM Emission Limitations for Process Operations [326 IAC 6-3-2]:

The PM emissions generated by the woodworking operation are limited by 326 IAC 6-3. Pursuant to 326 IAC 6-3, the allowable PM emissions for a process weight rate of 2.2 tons per hour is determined to be 6.95 lb PM/hr.

$$E = 4.10 P^{0.67} = \text{lb PM/hr}$$

$$\text{lb PM/hr} * 8760 \text{ hr/yr} * 1/2000 \text{ ton PM/lb PM} = \text{ton PM/yr}$$

$$\text{ton PM/yr} * 1/365 \text{ yr/day} * 2000 \text{ lb/ton} = \text{lb PM/day}$$

Combined Process Weight Rate, ton/hr	Allowable PM lb/hr	Allowable PM ton/yr	Allowable PM lb/day
2.20	6.95	30.46	166.89

Based on the above calculations, the PM emissions from the woodworking area after controls is estimated to be 19.75 lb/day or 0.82 lb PM/hr, which is less than the limit. Thus, compliance is determined to be achieved.

New Source Performance Standards (NSPS) [326 IAC 12 (40 CFR 60)]:

Subpart Dc Standards of Performance for Small Commercial Institutional Steam Generating Units:

Pursuant to 40 CFR 60, Subpart Dc, Standards of Performance for Small Commercial Institutional Steam Generating Units, units for which construction, reconstruction, or modification is commenced after June 9, 1989 and which has a maximum design heat input capacity greater than or equal to 10 MMBtu/hr but less than 100 MMBtu/hr are subject to this rule. The proposed boiler is was constructed after June 9, 1989 and has a design capacity of 13.4 MMBtu/hr. Thus, this rule applies.

Pursuant to 326 IAC 12 and 40 CFR 60.40c - 60.48c, the following requirements apply or do not apply as follows:

SO2 limits [40 CFR 60.42c]:

The SO2 emission limitations of 40 CFR 60.42c do not apply to proposed boiler B-1 because this section applies to boilers that combust coal only, coal refuse alone in a fluidized bed, coal alone that uses an emerging technology, coal in conjunction with any other fuel, oil, coal and oil, or coal and oil with any other fuel type. Boiler B-1 combusts wood.

PM and Opacity Limitations [40 CFR 60.43c]:

The PM emission limitations of 40 CFR 60.42c(a) do not apply because this section applies only to boilers combusting coal, coal mixtures with other fuels, and has a heat capacity of 30 MMBtu/hr or greater. The proposed boiler combusts wood and has a capacity of 13.4 MMBtu/hr.

The PM and opacity limitations of 40 CFR 60.43c(b) - (d) do not apply because the boiler capacity, (13.4 MMBtu/hr) is less than the applicable capacity of 30 MMBtu/hr.

Compliance and Performance Test Requirements for SO₂ [40 CFR 60.44c]:

The compliance and performance test requirements under 40 CFR 60.44c do not apply because there are no SO₂ standards that apply to proposed boiler B-1.

Compliance and Performance Test Requirements for PM [40 CFR 60.45c]:

The compliance and performance test requirements under 40 CFR 60.45c do not apply because there are no PM standards that apply to proposed boiler B-1.

Emission Monitoring for SO₂ [40 CFR 60.46c]:

The emission monitoring requirements of 40 CFR 60.46c do not apply because there are no SO₂ standards that apply to proposed boiler B-1.

Emission Monitoring for PM [40 CFR 60.47c]:

The emission monitoring requirements of 40 CFR 60.47c do not apply because there are no PM standards that apply to proposed boiler B-1.

Reporting and Record Keeping Requirements [40 CFR 60.48c]:

Pursuant to this section, the owner or operator shall submit notifications. Said notifications shall include the date of construction, anticipated startup, and actual startup, as provided in 40 CFR 60.7. The notification shall also include:

- (1) the design heat input capacity of boiler B-1 and identification of the fuels to be combusted in said boiler.
- (2) The annual capacity factor at which the owner or operator anticipates operating boiler B-1 based on all fuels fired and based on each individual fuel fired.
- (3) Notification if an emerging technology will be used for controlling SO₂ emissions. Said notification shall be examined by the Commissioner, who will determine if the technology qualifies as an emerging technology. In making this determination, the administrator may require the owner or operator of boiler 101 to submit additional information concerning the control device. Until such time the Commissioner approves said emerging technology, the boiler shall be operated under its approved operating conditions.

The date of construction shall be submitted no later than 30 days after such date, the anticipated startup shall be submitted not more than 60 days or less than 30 days prior to such date, and the actual startup shall be submitted within 15 days after such date. Finally, the notification requirements of (1), (2), and (3) shall be submitted within 15 days after actual startup.

Record Keeping [40 CFR 60.48c(g), and (i)]:

The owner or operator of boiler B-1 shall keep records of the amounts of each fuel combusted during each day. These records shall be maintained by the owner or operator for a minimum period of two (2) years following the date of such record.

Exemptions for Combustion Research [40 CFR 60.40c(c) and (d)]:

Since there are no performance testing or monitoring requirements, or limitations on boiler B-1, there is no need to state the exemptions granted for combustion research under 40 CFR 60.40c (c) and (d).

National Emission Standards for Hazardous Air Pollutants [40 CFR 61]:

There are no emission standards under this part that apply to the proposed boiler.

National Emission Standards for Hazardous Air Pollutants [40 CFR 63]:

There are no emission standards under this part that apply to the proposed boiler.

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Annual Emissions Report

T-1 Vertical Fixed Roof

Total	Components	Working	Breathing
Emissions (lbs.)		Loss (lbs)	Loss (lbs)
-----	-----	-----	-----
	Methyl methacrylate	780.82	55.06
Total:		780.82	55.06
835.88			
835.88			

Company Name: MACtac
 CP: 005-9965

Emission Calculations
 VOC Emissions
 09-04-98

Plt ID: 005-00087
 Permit Reviewer: SDF

Equip. ID	Equipment Description	Material	Max. Cap. lb/hr	Regulated Pollutants	Vent ID	Ht.	Temp.	acfm	Max. Emiss. lb/day	Tank Type	Volume Gallons	Date Constr.
6003A	Raw Material Storage Tank	Hydrogen Peroxide	464	None	6003AV	9	49	8.0	0.00	HFR	8000	1973
6003B	Raw Material Storage Tank	Hydrogen Peroxide	464	None	6003BV	9	49	8	0.00	HFR	8000	1973
6007	Raw Material Storage Tank	Linseed Oil	1999	None	6007V	5	48	12	0.00	HFR	25000	1973
6005	Raw Material Storage Tank	Toluene	1497	Toluene	6005V	11	54	12	1.04	VFR	8000	1973
6004	Raw Material Storage Tank	Sodium Hydroxide	63	None	6004V	10	70	12	0.00	HFR	6000	1973
C-17	EVO Batch Reactor	Process Mixture	4497	Toluene	C-17V	2	40	16	4.12	VFR	5000	1973
C-2	Reactor Charge Vessel	Formic Acid	64	Formic Acid	C-2V	6	70	0.7	0.00	VFR	60	1973
C-20	Reactor Charge Vessel	Hydrogen Peroxide	928	None	C-20V	-	49	8	0.00	VFR	700	1973
C-12	Safety Water Deluge Tank	Water	N/A	None	C-12V	-	70	12	0.00	VFR	1275	1973
C-3X	EVO Process Wash Vessel	Process Mixture	3488	Toluene	C-3XV	4	40	8	0.69	VFR	4860	1973
C-4	Process Mix Vessel	Sodium Hydroxide	N/A	None	C-4V	9.5	60	8	0.00	VFR	600	1973
C-5	Thin Film Feed Vessel	EVO / Toluene	1771	Toluene	C-5V	4	40	8	0.41	VFR	3650	1973
C-55	Thin Film Feed Vessel	EVO / Toluene	1771	Toluene	C-5V	4	40	50	0.41	VFR	3650	1973
E-1	Thin Film Evaporator	EVO / Toluene	1771	Toluene	E-1V	4	40	1.1	3.33	N/A	-	1973
C-6	Thin Film Receiver	EVO	1063	None	C-6V	19	200	1.1	0.00	VFR	3650	1973
C-11	Thin Film Receiver	EVO	1063	None	C-11V	19	200	0.5	0.00	VFR	2650	1973
6001	Thin Film Cond. Receiver	Water / Toluene	307	Toluene	6001V	26	70	3.3	1.58	VFR	11200	1973
7000	Fractioning Column	Toluene	22	Toluene	7000V	40	60	3.3	0.13	HFR	5500	1973
6013	Process Separation Vessel	Caustic Fatty Acids	190	Toluene	6013V	23	70	3.3	0.46	VFR	6300	1973
C-13	Secondary Separation Vessel	Fatty Acids	277	Toluene	C-13V	4	110	4	0.00	VFR	950	1973
6024	Wash Water Neutr. Vessel	Water/EVO/Toluene	1636	Toluene	6008V	19	90	2.7	3.51	VFR	12000	1973
6027	EVO Recycle Vessel	EVO / Toluene	68	Toluene	6027V	10	65	6.7	0.17	HFR	1500	1973
6011	Wash Water Sep. Vessel	Water/EVO/Toluene	3423	Toluene	6011V	27	70	6.7	3.29	VFR	18000	1973
6009	Wash Water Oxidation Vessel	Water	3422	None	6009V	30	130	5.3	0.00	VFR	18000	1973
6006	EVO Storage Tank	EVO	638	None	6006V	23	90	5.3	0.00	VFR	17000	1973
6010	EVO Storage Tank	EVO	213	None	6010V	19	90	5.3	0.00	VFR	11000	1973
6012	EVO Storage Tank	EVO	213	None	6012V	20	90	5.3	0.00	VFR	10000	1973

total 19.139

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Annual Emissions Report

T3 and T4 Vertical Fixed Roof

Components	Working Loss (lbs)	Breathing Loss (lbs)	Total Emissions (lbs.)
Methyl methacrylate	827.14	55.06	882.20
Total:	827.14	55.06	882.20

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Annual Emissions Report

T-11 Vertical Fixed Roof

Total	Components	Working	Breathing
Emissions (lbs.)		Loss (lbs)	Loss (lbs)
-----	-----	-----	-----
	Methyl methacrylate	49.07	55.06
Total:		49.07	55.06
104.14			
104.14			

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Annual Emissions Report
Tank T-12 Vertical Fixed Roof

Total	Components	Working	Breathing
Emissions (lbs.)		Loss (lbs)	Loss (lbs)
-----	-----	-----	-----
	Methyl methacrylate	49.07	55.63
Total:		49.07	55.63
104.70			
104.70			

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Annual Emissions Report

T-13(a) Vertical Fixed Roof

Components	Working Loss (lbs)	Breathing Loss (lbs)	Total Emissions (lbs.)
-----	-----	-----	-----
Methyl methacrylate	740.71	17.38	758.09
Total:	740.71	17.38	758.09

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Annual Emissions Report

T-15(b) Vertical Fixed Roof

Components	Working Loss (lbs)	Breathing Loss (lbs)	Total Emissions (lbs.)
Methyl methacrylate	416.00	28.66	444.65
Total:	416.00	28.66	444.65

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Annual Emissions Report

Tank T-16 Vertical Fixed Roof

Components	Working Loss (lbs)	Breathing Loss (lbs)	Total Emissions (lbs.)
Methyl methacrylate	52.78	5.92	58.70
Total:	52.78	5.92	58.70