



State of Ohio Environmental Protection Agency

**RE: FINAL PERMIT TO INSTALL MODIFICATION
WARREN COUNTY**

CERTIFIED MAIL

Street Address:

122 S. Front Street

Lazarus Gov. Center TELE: (614) 644-3020 FAX: (614) 644-2329

Mailing Address:
Lazarus Gov. Center
P.O. Box 1049

Application No: 14-05111

Fac ID: 1483040399

DATE: 2/9/2006

A and B Foundry
Richard Young
835 North Main Street
Franklin, OH 45005

Enclosed Please find a modification to the Ohio EPA Permit To Install referenced above which will modify the terms and conditions.

You are hereby notified that this action by the Director is final and may be appealed to the Ohio Environmental Review Appeals Commission pursuant to Chapter 3745.04 of the Ohio Revised Code. The appeal must be in writing and set forth the action complained of and the grounds upon which the appeal is based. It must be filed within thirty (30) days after the notice of the Directors action. A copy of the appeal must be served on the Director of the Ohio Environmental Protection Agency within three (3) days of filing with the Commission. An appeal may be filed with the Environmental Review Appeals Commission at the following address:

Environmental Review Appeals Commission
309 South Fourth Street, Room 222
Columbus, Ohio 43215

Sincerely,

Michael W. Ahern, Manager
Permit Issuance and Data Management Section
Division of Air Pollution Control

CC: USEPA

HCDES



**Permit To Install
Terms and Conditions**

**Issue Date: 2/9/2006
Effective Date: 2/9/2006**

FINAL ADMINISTRATIVE MODIFICATION OF PERMIT TO INSTALL

14-05111

Application Number: 14-05111
Facility ID: 1483040399
Permit Fee: **\$250**
Name of Facility: A and B Foundry
Person to Contact: Richard Young
Address: 835 North Main Street
Franklin, OH 45005

Location of proposed air contaminant source(s) [emissions unit(s)]:
**835 North Main Street
Franklin, Ohio**

Description of proposed emissions unit(s):
Administrative Modification to EU F003 to increase annual allowable mold spray usage, decrease annual allowable alcohol usage; no increase in short-term OC overall TPY OC emissions.

The above named entity is hereby granted a modification to the permit to install described above pursuant to Chapter 3745-31 of the Ohio Administrative Code. Issuance of this modification does not constitute expressed or implied approval or agreement that, if constructed or modified in accordance with the plans included in the application, the above described source(s) of environmental pollutants will operate in compliance with applicable State and Federal laws and regulations, and does not constitute expressed or implied assurance that if constructed or modified in accordance with those plans included in the application, the above described source(s) of pollutants will be granted the necessary operating permits.

This permit is granted subject to the conditions attached hereto.

Ohio Environmental Protection Agency

Director

Part I - GENERAL TERMS AND CONDITIONS

A. Permit to Install General Terms and Conditions

1. Compliance Requirements

The emissions unit(s) identified in this Permit to Install shall remain in full compliance with all applicable State laws and regulations and the terms and conditions of this permit.

2. Reporting Requirements

The permittee shall submit required reports in the following manner:

- a. Reports of any required monitoring and/or recordkeeping information shall be submitted to the appropriate Ohio EPA District Office or local air agency.
- b. Except as otherwise may be provided in the terms and conditions for a specific emissions unit, quarterly written reports of (a) any deviations (excursions) from emission limitations, operational restrictions, and control device operating parameter limitations that have been detected by the testing, monitoring, and recordkeeping requirements specified in this permit, (b) the probable cause of such deviations, and (c) any corrective actions or preventive measures which have been or will be taken, shall be submitted to the appropriate Ohio EPA District Office or local air agency. If no deviations occurred during a calendar quarter, the permittee shall submit a quarterly report, which states that no deviations occurred during that quarter. The reports shall be submitted quarterly, i.e., by January 31, April 30, July 31, and October 31 of each year and shall cover the previous calendar quarters. (These quarterly reports shall exclude deviations resulting from malfunctions reported in accordance with OAC rule 3745-15-06.)

3. Records Retention Requirements

Each record of any monitoring data, testing data, and support information required pursuant to this permit shall be retained for a period of five years from the date the record was created. Support information shall include, but not be limited to, all calibration and maintenance records and all original strip-chart recordings for continuous monitoring instrumentation, and copies of all reports required by this permit. Such records may be maintained in computerized form.

4. Inspections and Information Requests

The Director of the Ohio EPA, or an authorized representative of the Director, may, subject to the safety requirements of the permittee and without undue delay, enter upon

A and B Foundry

Facility ID: 148304039

PTI Application: 14-05111

Modification Issued: 2/9/2006

the premises of this source at any reasonable time for purposes of making inspections, conducting tests, examining records or reports pertaining to any emission of air contaminants, and determining compliance with any applicable State air pollution laws and regulations and the terms and conditions of this permit. The permittee shall furnish to the Director of the Ohio EPA, or an authorized representative of the Director, upon receipt of a written request and within a reasonable time, any information that may be requested to determine whether cause exists for modifying, reopening or revoking this permit or to determine compliance with this permit. Upon verbal or written request, the permittee shall also furnish to the Director of the Ohio EPA, or an authorized representative of the Director, copies of records required to be kept by this permit.

5. Scheduled Maintenance/Malfunction Reporting

Any scheduled maintenance of air pollution control equipment shall be performed in accordance with paragraph (A) of OAC rule 3745-15-06. The malfunction of any emissions units or any associated air pollution control system(s) shall be reported to the appropriate Ohio EPA District Office or local air agency in accordance with paragraph (B) of OAC rule 3745-15-06. Except as provided in that rule, any scheduled maintenance or malfunction necessitating the shutdown or bypassing of any air pollution control system(s) shall be accompanied by the shutdown of the emissions unit(s) that is (are) served by such control system(s).

6. Permit Transfers

Any transferee of this permit shall assume the responsibilities of the prior permit holder. The appropriate Ohio EPA District Office or local air agency must be notified in writing of any transfer of this permit.

7. Air Pollution Nuisance

The air contaminants emitted by the emissions units covered by this permit shall not cause a public nuisance, in violation of OAC rule 3745-15-07.

8. Termination of Permit to Install

This Permit to Install shall terminate within eighteen months of the effective date of the Permit to Install if the owner or operator has not undertaken a continuing program of installation or modification or has not entered into a binding contractual obligation to undertake and complete within a reasonable time a continuing program of installation or modification. This deadline may be extended by up to 12 months if application is made to the Director within a reasonable time before the termination date and the party shows good cause for any such extension.

9. Construction of New Sources(s)

A and B Foundry**Facility ID: 148304039****PTI Application: 14-05111****Modification Issued: 2/9/2006**

The proposed emissions unit(s) shall be constructed in strict accordance with the plans and application submitted for this permit to the Director of the Ohio Environmental Protection Agency. There may be no deviation from the approved plans without the express, written approval of the Agency. Any deviations from the approved plans or the above conditions may lead to such sanctions and penalties as provided under Ohio law. Approval of these plans does not constitute an assurance that the proposed facilities will operate in compliance with all Ohio laws and regulations. Additional facilities shall be installed upon orders of the Ohio Environmental Protection Agency if the proposed sources cannot meet the requirements of this permit or cannot meet applicable standards.

If the construction of the proposed emissions unit(s) has already begun or has been completed prior to the date the Director of the Environmental Protection Agency approves the permit application and plans, the approval does not constitute expressed or implied assurance that the proposed facility has been constructed in accordance with the approved plans. The action of beginning and/or completing construction prior to obtaining the Director's approval constitutes a violation of OAC rule 3745-31-02. Furthermore, issuance of the Permit to Install does not constitute an assurance that the proposed source will operate in compliance with all Ohio laws and regulations. Approval of the plans in any case is not to be construed as an approval of the facility as constructed and/or completed. Moreover, issuance of the Permit to Install is not to be construed as a waiver of any rights that the Ohio Environmental Protection Agency (or other persons) may have against the applicant for starting construction prior to the effective date of the permit. Additional facilities shall be installed upon orders of the Ohio Environmental Protection Agency if the proposed facilities cannot meet the requirements of this permit or cannot meet applicable standards.

10. Public Disclosure

The facility is hereby notified that this permit, and all agency records concerning the operation of this permitted source, are subject to public disclosure in accordance with OAC rule 3745-49-03.

11. Applicability

This Permit To Install is applicable only to the emissions unit(s) identified in the Permit To Install. Separate Permit To Install for the installation or modification of any other emissions unit(s) are required for any emissions unit for which a Permit To Install is required.

A and B Foundry
PTI Application: 14-05111
Modification Issued: 2/9/2006

Facility ID: 148304039

12. Best Available Technology

As specified in OAC Rule 3745-31-05, all new sources must employ Best Available Technology (BAT). Compliance with the terms and conditions of this permit will fulfill this requirement.

13. Source Operation and Operating Permit Requirements After Completion of Construction

This facility is permitted to operate each source described by this Permit to Install for a period of up to one year from the date the source commenced operation. This permission to operate is granted only if the facility complies with all requirements contained in this permit and all applicable air pollution laws, regulations, and policies. Pursuant to OAC Chapter 3745-35, the permittee shall submit a complete operating permit application within ninety (90) days after commencing operation of the emissions unit(s) covered by this permit.

14. Construction Compliance Certification

The applicant shall provide Ohio EPA with a written certification (see enclosed form) that the facility has been constructed in accordance with the Permit to Install application and the terms and conditions of the Permit to Install. The certification shall be provided to Ohio EPA upon completion of construction but prior to startup of the source.

15. Fees

The permittee shall pay fees to the Director of the Ohio EPA in accordance with ORC section 3745.11 and OAC Chapter 3745-78. The permittee shall pay all applicable Permit to Install fees within 30 days after the issuance of this Permit to Install.

B. Permit to Install Summary of Allowable Emissions

The following information summarizes the total allowable emissions, by pollutant, based on the individual allowable emissions of each air contaminant source identified in this permit.

SUMMARY (for informational purposes only)
TOTAL PERMIT TO INSTALL ALLOWABLE EMISSIONS

<u>Pollutant</u>	<u>Tons Per Year</u>
PM	0.14
PM10	0.13
OC	18.3

A and B Foundry

PTI Application: 14-05111

Modification Issued: 2/9/2006

Facility ID: 148304039



PART II - SPECIAL TERMS AND CONDITIONS FOR SPECIFIC EMISSIONS UNIT(S)

A. Applicable Emissions Limitations and/or Control Requirements

1. The specific operations(s), property, and/or equipment which constitute this emissions unit are listed in the following table along with the applicable rules and/or requirements and with the applicable emissions limitations and/or control measures. Emissions from this unit shall not exceed the listed limitations, and the listed control measures shall be specified in narrative form following the table.

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/Requirements</u>	OAC rule 3745-31-05(C) (to avoid being subject to Title V permitting requirements)
F003 - Vacuum mold making and core dip/flow coat - Modification	OAC rule 3745-31-05(A)(3)	

A and B Foundry

PTI Application: 11-05111

Modif

Facility ID: 148304039

Emissions Unit ID: F003

Applicable Emissions
Limitations/Control Measures

The emissions from this emissions unit shall not exceed the following limitations:

0.03 lb/hr Particulate Emissions (PE); 0.14 TPY PE

0.027 lb/hr Particulate matter emissions ten micron or less in diameter (PM10); 0.13 TPY PM10

0.093 lb/hr Organic Compounds (OC) from the mold release

10.5 lb/hr OC from the core wash

(includes mold spray, alcohol, and mold release).

Visible particulate emissions from any fugitive dust source shall not exceed 20 percent opacity, as a three-minute average.

See terms and conditions A.2.b., A.2.e. and B.1.

The requirements of this rule also include compliance with the requirements of OAC rule 3745-31-05(C).

18.3 TPY OC, based on a rolling, 12-month summation

See term B.2

2. Additional Terms and Conditions

- 2.a** Compliance with OAC rule 3745-31-05(A)(3) shall be demonstrated by compliance with the annual mold spray usage limit and the annual alcohol usage limit, compliance with the mold spray OC content limitation, compliance with the OC and PE/PM10 emissions limitations, and enclosure of the emissions unit within the building.
- 2.b** The OC content of any mold spray material employed in this emissions unit shall not exceed 45% by weight (0.45 lb. OC/ lb. mold spray).
- 2.c** The hourly and annual PE/PM10 emissions limitations outlined above are based upon the emissions unit's potential to emit. Therefore, no records are required to demonstrate compliance with these limits.
- 2.d** The hourly OC emission limitations outlined above are based upon the emissions unit's potential to emit. Therefore, no hourly records are required to demonstrate compliance with these limits.
- 2.e** The OC content of any mold release material employed in this emissions unit shall not exceed 93% by weight (0.93 lb. OC/ lb. mold release).

B. Operational Restrictions

- 1.** The use of photochemically reactive materials (PCRM), as defined in OAC rule 3745-21-01(C)(5) is prohibited in this emissions unit.
- 2.** The maximum annual mold spray material usage shall not exceed 36,000 pounds per year and the maximum annual supplemental alcohol usage in the core washing process shall not exceed 20,000 pounds per year, based upon rolling, 12-month summation of the usage figures.

To ensure enforceability during the first 12 calendar months of operation following the issuance of this permit, the permittee shall not exceed the material usage levels specified in the following table:

<u>Month(s)</u>	<u>Maximum Allowable Cumulative Cumulative Mold Spray Usage (lbs)</u>	<u>Maximum Allowable Alcohol Usage (lbs)</u>
1	18,000	10,000

Modification Issued: 2/9/2006

1-2	18,000	10,000
1-3	18,000	10,000
1-4	18,000	10,000
1-5	18,000	10,000
1-6	18,000	10,000
1-7	21,000	11,667
1-8	24,000	13,333
1-9	27,000	15,000
1-10	30,000	16,667
1-11	33,000	18,333
1-12	36,000	20,000

After the first 12 calendar months of operation following the issuance of this permit, compliance with the annual mold spray material usage and supplemental alcohol usage limitations shall be based upon rolling, 12-month summations of the usage figures.

C. Monitoring and/or Record keeping Requirements

1. The permittee shall collect and record the following information each month for this emissions unit:
 - a. The name and company identification of each mold spray and mold release material employed and the name and identification of each alcohol employed in the core wash;
 - b. The quantity of each mold spray material employed, in pounds;
 - c. The quantity of each alcohol employed in the core wash, in pounds;
 - d. The quantity of mold release material employed, in pounds;
 - e. The OC content of each mold spray material employed, in percent (%) by weight (lb. OC/lb. mold spray);
 - f. The OC content of each alcohol employed, in percent (%) by weight (lb. OC/lb. alcohol);
 - g. The OC content of each mold release material employed, in percent (%) by weight (lb. OC/lb. mold release);

A and B Foundry

PTI Application: 11 05111

Modif

Facility ID: 148304039

Emissions Unit ID: **F003**

- h. During the first 12 calendar months of operation following the issuance of this permit, the permittee shall record the cumulative mold spray material usage and the cumulative supplemental alcohol usage for each calendar month;
 - i. Beginning after the first 12 calendar months of operation following the issuance of this permit, the rolling, 12-month summation of the mold spray material usage, in pounds;
 - j. Beginning after the first 12 calendar months of operation following the issuance of this permit, the rolling, 12-month summation of the supplemental alcohol usage, in pounds;
 - k. The monthly OC emissions from usage of the mold spray material, mold release material and supplemental alcohol, in pounds $[(b \times e) + c \times f) + (d \times g)]$; and
 - l. The updated rolling, 12-month summation of OC emissions, in tons. This shall include the emissions for the current month and the preceding eleven calendar months.
2. The permittee shall collect and record the following information each month for this emissions unit:
 - a. The company identification of each liquid organic material employed in this emissions unit; and
 - b. A record of each liquid organic material employed in this emissions unit indicating whether or not the liquid organic material is photochemically reactive as identified in OAC rule 3745-21-01(C)(5).
3. The permit to install for this emissions unit [F003] was evaluated based on the actual materials and the design parameters of the emissions unit's exhaust system, as specified by the permittee in the permit to install application. The Ohio EPA's "Review of New Sources of Air Toxic Emissions" policy ("Air Toxic Policy") was applied to this emissions unit for each toxic pollutant, using data from the permit to install application, and modeling was performed for the toxic pollutant(s) emitted at over a ton per year using the SCREEN 3.0 model or other Ohio EPA approved model. The predicted 1-hour maximum ground-level concentration result(s) from the use of the SCREEN 3.0 (or other approved) model, was compared to the Maximum Acceptable Ground-Level Concentration (MAGLC), calculated as required in Engineering Guide #70. The following summarizes the results of the modeling for the "worst case" pollutant(s):

The following summarizes the results of the modeling for the "worst case" pollutant(s):

Pollutant: n-hexane

TLV ($\mu\text{g}/\text{m}^3$): 176,230

Maximum Hourly Emission Rate (lbs/hr): 10.5

Predicted 1-Hour Maximum Ground-Level
Concentration ($\mu\text{g}/\text{m}^3$): 3764

MAGLC ($\mu\text{g}/\text{m}^3$): 4196

Physical changes to or changes in the method of operation of the emissions unit after its installation or modification could affect the parameters used to determine whether or not the "Air Toxic Policy" is satisfied. Consequently, prior to making a change that could impact such parameters, the permittee shall conduct an evaluation to determine that the "Air Toxic Policy" will still be satisfied. If, upon evaluation, the permittee determines that the "Air Toxic Policy" will not be satisfied, the permittee will not make the change. Changes that can affect the parameters used in applying the "Air Toxic Policy" include the following:

- a. Changes in the composition of the materials used or the use of new materials, that would result in the emission of a compound or chemical with a lower Threshold Limit Value (TLV) than the lowest TLV previously modeled, as documented in the most current version of the American Conference of Governmental Industrial Hygienists' (ACGIH's) handbook entitled "TLVs and BEIs" ("Threshold Limit Values for Chemical Substances and Physical Agents, Biological Exposure Indices");
- b. Changes in the composition of the materials, or use of new materials, that would result in an increase in emissions of any pollutant with a listed TLV that was proposed in the application and modeled; and
- c. Physical changes to the emissions unit or its exhaust parameters (e.g., increased/ decreased exhaust flow, changes in stack height, changes in stack diameter, etc.).

If the permittee determines that the "Air Toxic Policy" will be satisfied for the above

A and B Foundry

PTI Application: 11-05111

Modif

Facility ID: 148304039

Emissions Unit ID: **F003**

changes, the Ohio EPA will not consider the change(s) to be a "modification" under OAC rule 3745-31-01 solely due to the emissions of any type of toxic air contaminant not previously emitted, and a modification of the existing permit to install will not be required, even if the toxic air contaminant emissions are greater than the de minimis level in OAC rule 3745-15-05. If the change(s) meet(s) the definition of a "modification" under other provisions of the rule, then the permittee shall obtain a final permit to install prior to the change.

The permittee shall collect, record, and retain the following information when it conducts evaluations to determine that the changed emissions unit will still satisfy the "Air Toxic Policy":

- a. A description of the parameters changed (composition of materials, new pollutants emitted, change in stack/exhaust parameters, etc.);
- b. Documentation of the evaluation and determination that the changed emissions unit still satisfies the "Air Toxic Policy"; and
- c. Where computer modeling is performed, a copy of the resulting computer model runs that show the results of the application of the "Air Toxic Policy" for the change.

D. Reporting Requirements

1. The permittee shall submit deviation (excursion) reports that identify all exceedances of the mold spray OC content limitation outlined in term A.2.b. or the mold release OC content limitation outlined in term A.2.e. The permittee shall state the probable cause of the deviations and any corrective actions or preventative measure which have been or will be taken.
2. The permittee shall submit deviation (excursion) reports that identify all exceedances of the mold spray and alcohol usage limitations outlined in term B.2. The permittee shall state the probable cause of the deviations and any corrective actions or preventative measure which have been or will be taken. If no deviations occurred, the permittee shall state so in the report.
3. The permittee shall notify the Hamilton County Department of Environmental Services in writing identifying each day during which any photochemically reactive material [as defined in OAC rule 3745-21-01(C)(5)] was employed in this emissions unit. This report shall identify the cause for the use of the photochemically reactive material(s) and the estimated total quantity of organic compound emissions emitted each such day. This

A and B Foundry

PTI Application: 11-05111

Modif

Facility ID: 148304039

Emissions Unit ID: **F003**

report shall be submitted to the Hamilton County Department of Environmental Services within 30 days after the exceedance occurs.

4. The permittee shall notify the Hamilton County Department of Environmental Services of any exceedance of the rolling, 12-month OC emissions limitations set forth in term A.2.b. The reports shall be submitted to the Director (the Hamilton County Department of Environmental Services) by January 31, April 30, July 31 and October 31 of each year and shall cover the previous three calendar months (October through December, January through March, April through June and July through September, respectively.)

If no exceedances occurred, the permittee shall state so in the report.

5. The deviation reports shall be submitted in accordance with the reporting requirements of the General Terms and Conditions of this permit.

E. Testing Requirements

1. Compliance with the emissions limitations specified in Section A.1.1. shall be determined by the following methods:

Emissions Limitations

0.03 lb/hr PE; 0.14 TPY PE
0.027 lb/hr PM10; 0.13 TPY PM10

Applicable Compliance Method

Compliance with the PE emissions limitations in section A.1. shall be demonstrated by the following calculations using $\frac{1}{2}$ the emission factor (per the American Foundrymen's Society for vacuum mold making - aluminum castings) in RACM Chapter 2.8 (0.04 lbs/ton). Compliance with the PM10 emissions limitations shall be demonstrated by multiplying the PE emissions by 90%, based on AP-42, Table 12.10-9, 1995:

- a. Vacuum mold making actual production (tons metal/hr) x $\frac{1}{2}$ RACM EF (0.02 lbs/ton) = lbs/hr PE; and
- b. Vacuum mold making actual production (tons metal/yr) x $\frac{1}{2}$ RACM EF (0.02 lbs/ton) x ton/2000 lbs = TPY PE.

Emissions Limitations

10.5 lbs/hr OC; 18.3 TPY OC

Applicable Compliance Method

Compliance with the OC emissions limitations in term A.1. shall be demonstrated by the following calculations using the OC percent (%), by weight, from the Material Safety Data Sheet (MSDS) of each mold spray material, mold release and supplementary alcohol :

- a. $[\text{Actual mold spray usage (lbs/hr)} \times \text{weight percent OC (lbs OC/lb mold spray)}] + [\text{actual alcohol usage (lbs/hr)} \times \text{weight percent OC (lbs OC/lb alcohol)}] + [\text{actual mold release usage (lbs/hr)} \times \text{weight percent OC (lbs OC/lb mold release)}] = \text{lbs/hr OC}$
- b. $[\text{Actual mold spray usage (lbs/yr)} \times \text{weight percent OC (lbs OC/lb mold spray)}] + [\text{actual alcohol usage (lbs/yr)} \times \text{weight percent OC (lbs OC/lb alcohol)}] + [\text{actual mold release usage (lbs/yr)} \times \text{weight percent OC (lbs OC/lb mold release)}] \times \text{ton/2000 lbs} = \text{TPY OC.}$

Compliance with the rolling 12 month OC emissions limitation in term and condition A.1. shall be demonstrated by the record keeping requirement in term and condition C.1.

Emissions Limitation

Visible particulate emissions from any fugitive dust source shall not exceed 20 percent opacity, as a three-minute average.

Applicable Compliance Method

Compliance with the fugitive visible particulate emissions limitation in term A.1. shall be demonstrated by Method 9 visible emissions readings as outlined in 40 CFR 60, Appendix A.

2. Formulation data or USEPA method 24 or 24A shall be used to determine the OC contents of the mold spray, mold release and alcohol.
3. Compliance with the rolling, 12-month mold spray and alcohol usage limits in term B.2. shall be demonstrated by the record keeping requirements in term C.1.
4. Compliance with the PCRM limitation in term and condition B.1. shall be demonstrated by the record keeping requirement in term and condition C.2.

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Modification Issued: 2/9/2006

Emissions Unit ID: **F003**

F. Miscellaneous Requirements

1. The terms and conditions listed in this permit to install shall supercede all the air pollution control requirements for this emission unit contained in permit to install 14-04394 as issued on December 8, 1999 and permit to install 14-05111 as issued on July 17, 2001.