State of Ohio Environmental Protection Agency

RE: FINAL PERMIT TO INSTALL MODIFICATION **CERTIFIED MAIL**
COLUMBIANA COUNTY

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: 02-16560

DATE: 8/22/2002

Humtown Pattern Company
Dianna Stump
PO Box 367
Columbiana, OH 44408

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
236 East Town Street, Room 300
Columbus, Ohio 43215

Very truly yours,
Michael W. Ahern
Michael W. Ahern, Supervisor
Field Operations and Permit Section
Division of Air Pollution Control

CC: **USEPA** **NEDO**

STATE OF OHIO ENVIRONMENTAL PROTECTION AGENCY

Permit To Install **Issue Date: 8/22/2002**
Terms and Conditions **Effective Date: 8/22/2002**

FINAL ADMINISTRATIVE MODIFICATION OF PERMIT TO INSTALL 02-16560

Application Number:	02-16560
APS Premise Number:	0215000242
Permit Fee:	**$0**
Name of Facility:	Humtown Pattern Company
Person to Contact:	Dianna Stump
Address:	PO Box 367 Columbiana, OH 44408

Location of proposed air contaminant source(s) [emissions unit(s)]:
44708 Columbiana-Waterford Rd
Columbiana, **Ohio**

Description of proposed emissions unit(s):
Administrative Modification to PTI 02-16560 issued on Aug. 1, 2002 to replace incorrect Terms and Conditions.

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 Related to Monitoring and Recordkeeping 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 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)

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 application must be made to the Director for the installation or modification of any other emissions unit(s).

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

a. If the permittee is required to apply for a Title V permit pursuant to OAC Chapter

3745-77, the permittee shall submit a complete Title V permit application or a complete Title V permit modification application within twelve (12) months after commencing operation of the emissions units covered by this permit. However, if the proposed new or modified source(s) would be prohibited by the terms and conditions of an existing Title V permit, a Title V permit modification must be obtained before the operation of such new or modified source(s) pursuant to OAC rule 3745-77-04(D) and OAC rule 3745-77-08(C)(3)(d).

b. If the permittee is required to apply for permit(s) pursuant to OAC Chapter 3745-35, the source(s) identified in this Permit To Install is (are) permitted to operate for a period of up to one year from the date the source(s) commenced operation. 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 thirty (30) days after commencing operation of the source(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

Pollutant	Tons Per Year
VOC	15.4 tpy
Particulate	8.77 tpy

Emissions Unit ID: **P017**

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.

Operations, Property, and/or Equipment	Applicable Rules/Requirements	
P017 - Mold Core Station No. 17 (Hor 22) vented to a sulfuric acid packed bed wet scrubber. Modification	OAC rule 3745-31-05(A)(3)	OAC rule 3745-21-07(G)(9)(h)
	OAC rule 3745-17-07(A)(1)	
	OAC rule 3745-17-11(B)(1)	
	OAC rule 3745-21-07(G)	

Applicable Emissions Limitations/Control Measures	
0.30 pound per hour and 1.32 ton per year of organic compound emissions.	
0.10 pound per hour and 0.44 ton per year of particulate emissions.	
This facility shall maintain for this emissions unit a sulfuric acid scrubber system with a control efficiency (i.e., destruction or removal efficiency) which is at least 98% by weight of the catalyst gas emissions (i.e., DMEA or DMIPA).	
Visible particulate emissions from the scrubber stack shall not exceed 10% opacity, as a six-minute average.	
The visible particulate emission limitation specified by this rule is less stringent than the limitation established pursuant to OAC rule 3745-31-05(A)(3).	
The emission limitation specified by this rule is less stringent than the limitation established pursuant to OAC rule 3745-31-05(A)(3).	
Exempt, per OAC rule 3745-21-07(G)(9)(h).	
The emission limitation specified by this rule is equivalent to the limitation established pursuant to OAC rule 3745-31-05(A)(3).	

2. Additional Terms and Conditions

2.a None

B. Operational Restrictions

1. The sulfuric acid scrubber system shall be used while this emissions unit is in operation.

2. The scrubber solution flow rate shall be continuously maintained at a value of not less than 150 gallons per minute at all times while the emissions unit is in operation.

3. The pH of the scrubber solution shall be maintained at or below 4.5.

4. The fluid level in the scrubber solution holding tanks shall be maintained above 11 inches.

5. The building in which this emissions unit is located shall be totally enclosed such that all catalyst gas emissions are captured for venting to the scrubber system. The differential pressure between the inside and outside of the enclosure shall not be less than 0.01 inch of water.

C. Monitoring and/or Recordkeeping Requirements

1. The permittee shall operate and maintain a system to continuously monitor and record hourly the following information:

   a. the scrubber solution flow rate, in gallons per minute;
   b. the pH of the scrubber solution; and
   c. the fluid level in the scrubber solution holding tanks.

2. The permittee shall maintain a daily log or record of operating time for the capture (collection) system, control device, monitoring equipment, and the associated emissions unit.

3. The permittee shall maintain the following records on a daily basis for this emissions unit:

   a. the operating hours of the emissions unit;
   b. the total amount of sand employed (in tons);
   c. the total amount of resin employed (in pounds); and
   d. the total amount of acid employed in the scrubber (in pounds).

4. The permittee shall install, maintain and operate monitoring devices which measure the pressure inside and outside the enclosure. The monitoring device shall be installed, calibrated, operated and maintained in accordance with the manufacturer's recommendations, instructions and operating manuals. The permittee shall record and maintain the difference in pressure between the enclosure and the surrounding area(s) on a daily basis.

5. The permit to install for this emissions unit (P017) and the other emissions unit in this project (P018, P019, P020, P021) was evaluated based on the actual materials (typically coatings and cleanup 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 for each pollutant emitted by this emissions unit using data from the permit to install application and the SCREEN 3.0 model (or other Ohio EPA approved model). The predicted 1-hour maximum ground-level concentration from the use of the SCREEN 3.0 model was compared to the Maximum Acceptable Ground-Level Concentration (MAGLC). The following summarizes the results of the modeling for the "worst case" pollutant(s):

Pollutant: Xylene
TLV (mg/m^3): 434.19 mg/m^3
Maximum Hourly Emission Rate (lbs/hr): 0.49 lb/hr*
Predicted 1-Hour Maximum Ground-Level Concentration (ug/m^3): 6.37 ug/m^3
MAGLC (ug/m^3): 10,338 ug/m^3

Pollutant: Cumene
TLV (mg/m^3): 245.79 mg/m^3
Maximum Hourly Emission Rate (lbs/hr): 0.35 lb/hr*
Predicted 1-Hour Maximum Ground-Level Concentration (ug/m^3): 4.55 ug/m^3
MAGLC (ug/m^3): 5,852 ug/m^3

Pollutant: Naphthalene
TLV (mg/m^3): 52.43 mg/m^3
Maximum Hourly Emission Rate (lbs/hr): 0.35 lb/hr*
Predicted 1-Hour Maximum Ground-Level Concentration (ug/m^3): 4.55 ug/m^3
MAGLC (ug/m^3): 1,248 ug/m^3

Pollutant: Phenol
TLV (mg/m^3): 19.24 mg/m^3
Maximum Hourly Emission Rate (lbs/hr): 0.28 lb/hr*
Predicted 1-Hour Maximum Ground-Level Concentration (ug/m^3): 3.64 ug/m^3
MAGLC (ug/m^3): 458 ug/m^3

Emissions Unit ID: **P017**

*This was modeled for emissions units P017, P018, P019, P020, and P021 combined.

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 still 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 (typically for coatings or cleanup materials), or the use of new materials, that would result in the emission of a compound with a lower Threshold Limit Value (TLV), as indicated in the most recent version of the handbook entitled "American Conference of Governmental Industrial Hygienists (ACGIH)," than the lowest TLV value previously modeled;

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.).

6. If the permittee determines that the "Air Toxic Policy" will be satisfied for the above changes, the Ohio EPA will not consider the change(s) to be a "modification" under OAC rule 3745-31-01(VV)(1)(a)(ii), and a modification of the existing permit to install will not be required. If the change(s) is (are) defined as a modification under other provisions of the modification definition (other than (VV)(1)(a)(ii)), 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 its 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 semi-annual deviation (excursion) reports that identify all periods of time when the sulfuric acid scrubber system was not in use while this emissions unit was in operation.

2. The permittee shall submit semi-annual deviation (excursion) reports that identify all periods of time during which the following scrubber parameters were not maintained at or above the required levels:

   a. the scrubber solution flow rate;
   b. the fluid level in the scrubber solution holding tanks; and
   c. the scrubber solution pH.

3. The permittee shall submit semi-annual pressure differential deviation (excursion) reports that identify all periods of time during which the enclosure was not maintained at the required differential pressure specified above.

4. The permittee shall submit an annual report to Ohio EPA, Northeast District Office, which includes the following information for the core making operation. The report shall be submitted by February 15 of each year and shall include the following information for the previous year:

   a. the annual operating hours of the scrubber system;
   b. the total amount of acid employed in the scrubber (in pounds); and
   c. the total amount of resins employed (in pounds).

E. Testing Requirements

1. <u>Emission Limitation</u>
   0.30 pound of OC emissions per hour

   <u>Applicable Compliance Method</u>
   If required by Ohio EPA, compliance with the allowable OC emission limit shall be determined in accordance with U.S. EPA Reference Methods 1 - 4, 25 or 25A of 40 CFR Part 60, Appendix A.

   The following calculation shall be used to document the hourly OC emission rate:

   E (lb/hr) = (amount of sand used, ton/hr) x (EF) x (percentage of OC emitted)

   Where: E = organic compound emission rate in pounds per hour
   EF = Ohio Cast Metals Association (OCMA) emission factor, 0.65 pounds of OC emissions per ton of sand used.
   percentage of OC emitted = 50% based on estimations provided by the permittee from similar emissions units at the facility.

2. Emission Limitation
1.32 ton of OC emissions per year

Applicable Compliance Method
At the end of each year, the permittee shall calculate and document the annual OC emissions using the following calculation:

E (ton/yr) = (tons of sand used per year) x (EF) x (percentage of OC emitted) x (1 ton / 2,000 pounds)

Where: E = organic compound emission rate in tons per year
EF = Ohio Cast Metals Association (OCMA) emission factor, 0.65 pounds of OC emissions per ton of sand used.
percentage of OC emitted = 50% based on estimations provided by the permittee from similar emissions units at the facility.

3. Emission Limitation
0.10 pound of particulate emissions per hour

Applicable Compliance Method
If required by Ohio EPA, compliance with the allowable particulate emission limit shall be determined in accordance with U.S. EPA Reference Methods 1 - 5 of 40 CFR Part 60, Appendix A.

The following calculation shall be used to document the hourly particulate emission rate:

E (lb/hr) = (amount of sand used, ton/hr) x (EF) x (percentage of particulate emitted)

Where: E = particulate emission rate in pounds per hour
EF = RACM emission factor, 0.35 pounds of particulate emissions per ton of sand used.
percentage of particulate emitted = 10% based on estimations provided by the permittee from similar emissions units at the facility.

4. Emission Limitation
0.44 ton of particulate emissions per year

Applicable Compliance Method
This limit is based on the allowable hourly emission rate (0.10 lb/hr) multiplied by the maximum

possible operating hours (8,760 hrs/yr), and divided by 2,000 lbs/ton. Therefore, compliance with the hourly limit shall also be a demonstration with the annual limit.

5. Emission Limitation
10% opacity for visible particulate emissions

Applicable Compliance Method
If required by Ohio EPA, compliance shall be determined by visible emission evaluations performed in accordance with OAC rule 3745-17-03(B)(1), using the procedures specified in U.S. EPA reference Method 9.

6. Emission Limitation
98% by weight control efficiency for catalyst gas emissions

Applicable Compliance Method
If required by Ohio EPA, the permittee shall determine compliance with the 98% control efficiency for catalysist gas emissions using U.S. EPA Reference Methods 1-4, and 18 of 40 CFR Part 60, Appendix A.

F. Miscellaneous Requirements

1. The terms and conditions in sections A, B, C.1 through C.4, D, and E of this permit are federally enforceable.

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.

Operations, Property, and/or Equipment	Applicable Rules/Requirements	
P018 - Mold Core Station No. 18 (CB 50) vented to a sulfuric acid packed bed wet scrubber. Modification	OAC rule 3745-31-05(A)(3)	OAC rule 3745-21-07(G)
		OAC rule 3745-21-07(G)(9)(h)
	OAC rule 3745-17-07(A)(1)	
	OAC rule 3745-17-11(B)(1)	

Applicable Emissions Limitations/Control Measures	
0.60 pound per hour and 2.63 tons per year of organic compound emissions.	
0.10 pound per hour and 0.44 ton per year of particulate emissions.	
This facility shall maintain for this emissions unit a sulfuric acid scrubber system with a control efficiency (i.e., destruction or removal efficiency) which is at least 98% by weight of the catalyst gas emissions (i.e., DMEA or DMIPA).	
Visible particulate emissions from the scrubber stack shall not exceed 10% opacity, as a six-minute average.	
The visible particulate emission limitation specified by this rule is less stringent than the limitation established pursuant to OAC rule 3745-31-05(A)(3).	
The emission limitation specified by this rule is less stringent than the limitation established pursuant to OAC rule 3745-31-05(A)(3).	
Exempt, per OAC rule 3745-21-07(G)(9)(h).	
The emission limitation specified by this rule is equivalent to the limitation established pursuant to OAC rule 3745-31-05(A)(3).	

2. Additional Terms and Conditions

2.a None

B. Operational Restrictions

1. The sulfuric acid scrubber system shall be used while this emissions unit is in operation.

2. The scrubber solution flow rate shall be continuously maintained at a value of not less than 150 gallons per minute at all times while the emissions unit is in operation.

3. The pH of the scrubber solution shall be maintained at or below 4.5.

4. The fluid level in the scrubber solution holding tanks shall be maintained above 11 inches.

5. The building in which this emissions unit is located shall be totally enclosed such that all catalyst gas emissions are captured for venting to the scrubber system. The differential pressure between the inside and outside of the enclosure shall not be less than 0.01 inch of water.

C. Monitoring and/or Recordkeeping Requirements

1. The permittee shall operate and maintain a system to continuously monitor and record hourly the following information:

   a. the scrubber solution flow rate, in gallons per minute;
   b. the pH of the scrubber solution; and
   c. the fluid level in the scrubber solution holding tanks.

2. The permittee shall maintain a daily log or record of operating time for the capture (collection) system, control device, monitoring equipment, and the associated emissions unit.

3. The permittee shall maintain the following records on a daily basis for this emissions unit:

   a. the operating hours of the emissions unit;
   b. the total amount of sand employed (in tons);
   c. the total amount of resin employed (in pounds); and
   d. the total amount of acid employed in the scrubber (in pounds).

4. The permittee shall install, maintain and operate monitoring devices which measure the pressure inside and outside the enclosure. The monitoring device shall be installed, calibrated, operated and maintained in accordance with the manufacturer's recommendations, instructions and operating manuals. The permittee shall record and maintain the difference in pressure between the enclosure and the surrounding area(s) on a daily basis.

5. The permit to install for this emissions unit (P018) and the other emissions unit in this project (P017, P019, P020, P021) was evaluated based on the actual materials (typically coatings and cleanup 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 for each pollutant emitted by this emissions unit using data from the permit to install application and the SCREEN 3.0 model (or other Ohio EPA approved model). The predicted 1-hour maximum ground-level concentration from the use of the SCREEN 3.0 model was compared to the Maximum Acceptable Ground-Level Concentration (MAGLC). The following summarizes the results of the modeling for the "worst case" pollutant(s):

Pollutant: Xylene
TLV (mg/m^3): 434.19 mg/m^3
Maximum Hourly Emission Rate (lbs/hr): 0.49 lb/hr*
Predicted 1-Hour Maximum Ground-Level Concentration (ug/m^3): 6.37 ug/m^3
MAGLC (ug/m^3): 10,338 ug/m^3

Pollutant: Cumene
TLV (mg/m^3): 245.79 mg/m^3
Maximum Hourly Emission Rate (lbs/hr): 0.35 lb/hr*
Predicted 1-Hour Maximum Ground-Level Concentration (ug/m^3): 4.55 ug/m^3
MAGLC (ug/m^3): 5,852 ug/m^3

Pollutant: Naphthalene
TLV (mg/m^3): 52.43 mg/m^3
Maximum Hourly Emission Rate (lbs/hr): 0.35 lb/hr*
Predicted 1-Hour Maximum Ground-Level Concentration (ug/m^3): 4.55 ug/m^3
MAGLC (ug/m^3): 1,248 ug/m^3

Pollutant: Phenol
TLV (mg/m^3): 19.24 mg/m^3
Maximum Hourly Emission Rate (lbs/hr): 0.28 lb/hr*
Predicted 1-Hour Maximum Ground-Level Concentration (ug/m^3): 3.64 ug/m^3
MAGLC (ug/m^3): 458 ug/m^3

Emissions Unit ID: **P018**

*This was modeled for emissions units P017, P018, P019, P020, and P021 combined.

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 still 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 (typically for coatings or cleanup materials), or the use of new materials, that would result in the emission of a compound with a lower Threshold Limit Value (TLV), as indicated in the most recent version of the handbook entitled "American Conference of Governmental Industrial Hygienists (ACGIH)," than the lowest TLV value previously modeled;

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.).

6. If the permittee determines that the "Air Toxic Policy" will be satisfied for the above changes, the Ohio EPA will not consider the change(s) to be a "modification" under OAC rule 3745-31-01(VV)(1)(a)(ii), and a modification of the existing permit to install will not be required. If the change(s) is (are) defined as a modification under other provisions of the modification definition (other than (VV)(1)(a)(ii)), 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 its 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 semi-annual deviation (excursion) reports that identify all periods of time when the sulfuric acid scrubber system was not in use while this emissions unit was in operation.

2. The permittee shall submit semi-annual deviation (excursion) reports that identify all periods of time during which the following scrubber parameters were not maintained at or above the required levels:

   a. the scrubber solution flow rate;
   b. the fluid level in the scrubber solution holding tanks; and
   c. the scrubber solution pH.

3. The permittee shall submit semi-annual pressure differential deviation (excursion) reports that identify all periods of time during which the enclosure was not maintained at the required differential pressure specified above.

4. The permittee shall submit an annual report to Ohio EPA, Northeast District Office, which includes the following information for the core making operation. The report shall be submitted by February 15 of each year and shall include the following information for the previous year:

   a. the annual operating hours of the scrubber system;
   b. the total amount of acid employed in the scrubber (in pounds); and
   c. the total amount of resins employed (in pounds).

E. Testing Requirements

1. <u>Emission Limitation</u>
   0.60 pound of OC emissions per hour

   <u>Applicable Compliance Method</u>
   If required by Ohio EPA, compliance with the allowable OC emission limit shall be determined in accordance with U.S. EPA Reference Methods 1 - 4, 25 or 25A of 40 CFR Part 60, Appendix A.

   The following calculation shall be used to document the hourly OC emission rate:

   E (lb/hr) = (amount of sand used, ton/hr) x (EF) x (percentage of OC emitted)

   Where: E = organic compound emission rate in pounds per hour
   EF = Ohio Cast Metals Association (OCMA) emission factor, 0.65 pounds of OC emissions per ton of sand used.
   percentage of OC emitted = 50% based on estimations provided by the permittee from similar emissions units at the facility.

2. Emission Limitation
2.63 tons of OC emissions per year

Applicable Compliance Method
At the end of each year, the permittee shall calculate and document the annual OC emissions using the following calculation:

E (ton/yr) = (tons of sand used per year) x (EF) x (percentage of OC emitted) x (1 ton / 2,000 pounds)

Where: E = organic compound emission rate in tons per year
EF = Ohio Cast Metals Association (OCMA) emission factor, 0.65 pounds of OC emissions per ton of sand used.
percentage of OC emitted = 50% based on estimations provided by the permittee from similar emissions units at the facility.

3. Emission Limitation
0.10 pound of particulate emissions per hour

Applicable Compliance Method
If required by Ohio EPA, compliance with the allowable particulate emission limit shall be determined in accordance with U.S. EPA Reference Methods 1 - 5 of 40 CFR Part 60, Appendix A.

The following calculation shall be used to document the hourly particulate emission rate:

E (lb/hr) = (amount of sand used, ton/hr) x (EF) x (percentage of particulate emitted)

Where: E = particulate emission rate in pounds per hour
EF = RACM emission factor, 0.35 pounds of particulate emissions per ton of sand used.
percentage of particulate emitted = 10% based on estimations provided by the permittee from similar emissions units at the facility.

4. Emission Limitation
0.44 ton of particulate emissions per year

Applicable Compliance Method
This limit is based on the allowable hourly emission rate (0.10 lb/hr) multiplied by the maximum

possible operating hours (8,760 hrs/yr), and divided by 2,000 lbs/ton. Therefore, compliance with the hourly limit shall also be a demonstration with the annual limit.

5. Emission Limitation
10% opacity for visible particulate emissions

Applicable Compliance Method
If required by Ohio EPA, compliance shall be determined by visible emission evaluations performed in accordance with OAC rule 3745-17-03(B)(1), using the procedures specified in U.S. EPA reference Method 9.

6. Emission Limitation
98% by weight control efficiency for catalyst gas emissions

Applicable Compliance Method
If required by Ohio EPA, the permittee shall determine compliance with the 98% control efficiency for catalysist gas emissions using U.S. EPA Reference Methods 1-4, and 18 of 40 CFR Part 60, Appendix A.

F. Miscellaneous Requirements

1. The terms and conditions in sections A, B, C.1 through C.4, D, and E of this permit are federally enforceable.

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.

Operations, Property, and/or Equipment	Applicable Rules/Requirements	
P019 - Mold Core Station No. 19 (Laempe) vented to a sulfuric acid packed bed wet scrubber. Modification	OAC rule 3745-31-05(A)(3)	OAC rule 3745-21-07(G)
		OAC rule 3745-21-07(G)(9)(h)
	OAC rule 3745-17-07(A)(1)	
	OAC rule 3745-17-11(B)(1)	

Applicable Emissions
Limitations/Control Measures

0.50 pound per hour and 2.19 tons per year of organic compound emissions.

0.10 pound per hour and 0.44 ton per year of particulate emissions.

This facility shall maintain for this emissions unit a sulfuric acid scrubber system with a control efficiency (i.e., destruction or removal efficiency) which is at least 98% by weight of the catalyst gas emissions (i.e., DMEA or DMIPA).

Visible particulate emissions from the scrubber stack shall not exceed 10% opacity, as a six-minute average.

The visible particulate emission limitation specified by this rule is less stringent than the limitation established pursuant to OAC rule 3745-31-05(A)(3).

The emission limitation specified by this rule is less stringent than the limitation established pursuant to OAC rule 3745-31-05(A)(3).

Exempt, per OAC rule 3745-21-07(G)(9)(h).
The emission limitation specified by this rule is equivalent to the limitation established pursuant to OAC rule 3745-31-05(A)(3).

2. Additional Terms and Conditions

2.a None

B. Operational Restrictions

1. The sulfuric acid scrubber system shall be used while this emissions unit is in operation.

2. The scrubber solution flow rate shall be continuously maintained at a value of not less than 150 gallons per minute at all times while the emissions unit is in operation.

3. The pH of the scrubber solution shall be maintained at or below 4.5.

4. The fluid level in the scrubber solution holding tanks shall be maintained above 11 inches.

5. The building in which this emissions unit is located shall be totally enclosed such that all catalyst gas emissions are captured for venting to the scrubber system. The differential pressure between the inside and outside of the enclosure shall not be less than 0.01 inch of water.

C. Monitoring and/or Recordkeeping Requirements

1. The permittee shall operate and maintain a system to continuously monitor and record hourly the following information:

   a. the scrubber solution flow rate, in gallons per minute;
   b. the pH of the scrubber solution; and
   c. the fluid level in the scrubber solution holding tanks.

2. The permittee shall maintain a daily log or record of operating time for the capture (collection) system, control device, monitoring equipment, and the associated emissions unit.

3. The permittee shall maintain the following records on a daily basis for this emissions unit:

   a. the operating hours of the emissions unit;
   b. the total amount of sand employed (in tons);
   c. the total amount of resin employed (in pounds); and
   d. the total amount of acid employed in the scrubber (in pounds).

4. The permittee shall install, maintain and operate monitoring devices which measure the pressure inside and outside the enclosure. The monitoring device shall be installed, calibrated, operated and maintained in accordance with the manufacturer's recommendations, instructions and operating manuals. The permittee shall record and maintain the difference in pressure between the enclosure and the surrounding area(s) on a daily basis.

5. The permit to install for this emissions unit (P019) and the other emissions unit in this project (P017, P018, P020, P021) was evaluated based on the actual materials (typically coatings and cleanup 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 for each pollutant emitted by this emissions unit using data from the permit to install application and the SCREEN 3.0 model (or other Ohio EPA approved model). The predicted 1-hour maximum ground-level concentration from the use of the SCREEN 3.0 model was compared to the Maximum Acceptable Ground-Level Concentration (MAGLC). The following summarizes the results of the modeling for the "worst case" pollutant(s):

Pollutant: Xylene
TLV (mg/m^3): 434.19 mg/m^3
Maximum Hourly Emission Rate (lbs/hr): 0.49 lb/hr*
Predicted 1-Hour Maximum Ground-Level Concentration (ug/m^3): 6.37 ug/m^3
MAGLC (ug/m^3): 10,338 ug/m^3

Pollutant: Cumene
TLV (mg/m^3): 245.79 mg/m^3
Maximum Hourly Emission Rate (lbs/hr): 0.35 lb/hr*
Predicted 1-Hour Maximum Ground-Level Concentration (ug/m^3): 4.55 ug/m^3
MAGLC (ug/m^3): 5,852 ug/m^3

Pollutant: Naphthalene
TLV (mg/m^3): 52.43 mg/m^3
Maximum Hourly Emission Rate (lbs/hr): 0.35 lb/hr*
Predicted 1-Hour Maximum Ground-Level Concentration (ug/m^3): 4.55 ug/m^3
MAGLC (ug/m^3): 1,248 ug/m^3

Pollutant: Phenol
TLV (mg/m^3): 19.24 mg/m^3
Maximum Hourly Emission Rate (lbs/hr): 0.28 lb/hr*
Predicted 1-Hour Maximum Ground-Level Concentration (ug/m^3): 3.64 ug/m^3
MAGLC (ug/m^3): 458 ug/m^3

Emissions Unit ID: **P019**

*This was modeled for emissions units P017, P018, P019, P020, and P021 combined.

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 still 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 (typically for coatings or cleanup materials), or the use of new materials, that would result in the emission of a compound with a lower Threshold Limit Value (TLV), as indicated in the most recent version of the handbook entitled "American Conference of Governmental Industrial Hygienists (ACGIH)," than the lowest TLV value previously modeled;

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.).

6. If the permittee determines that the "Air Toxic Policy" will be satisfied for the above changes, the Ohio EPA will not consider the change(s) to be a "modification" under OAC rule 3745-31-01(VV)(1)(a)(ii), and a modification of the existing permit to install will not be required. If the change(s) is (are) defined as a modification under other provisions of the modification definition (other than (VV)(1)(a)(ii)), 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 its 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 semi-annual deviation (excursion) reports that identify all periods of time when the sulfuric acid scrubber system was not in use while this emissions unit was in operation.

2. The permittee shall submit semi-annual deviation (excursion) reports that identify all periods of time during which the following scrubber parameters were not maintained at or above the required levels:

   a. the scrubber solution flow rate;
   b. the fluid level in the scrubber solution holding tanks; and
   c. the scrubber solution pH.

3. The permittee shall submit semi-annual pressure differential deviation (excursion) reports that identify all periods of time during which the enclosure was not maintained at the required differential pressure specified above.

4. The permittee shall submit an annual report to Ohio EPA, Northeast District Office, which includes the following information for the core making operation. The report shall be submitted by February 15 of each year and shall include the following information for the previous year:

   a. the annual operating hours of the scrubber system;
   b. the total amount of acid employed in the scrubber (in pounds); and
   c. the total amount of resins employed (in pounds).

E. Testing Requirements

1. <u>Emission Limitation</u>
   0.50 pound of OC emissions per hour

   <u>Applicable Compliance Method</u>
   If required by Ohio EPA, compliance with the allowable OC emission limit shall be determined in accordance with U.S. EPA Reference Methods 1 - 4, 25 or 25A of 40 CFR Part 60, Appendix A.

   The following calculation shall be used to document the hourly OC emission rate:

   E (lb/hr) = (amount of sand used, ton/hr) x (EF) x (percentage of OC emitted)

   Where: E = organic compound emission rate in pounds per hour
   EF = Ohio Cast Metals Association (OCMA) emission factor, 0.65 pounds of OC emissions per ton of sand used.
   percentage of OC emitted = 50% based on estimations provided by the permittee from similar emissions units at the facility.

2. Emission Limitation
2.19 tons of OC emissions per year

Applicable Compliance Method
At the end of each year, the permittee shall calculate and document the annual OC emissions using the following calculation:

E (ton/yr) = (tons of sand used per year) x (EF) x (percentage of OC emitted) x (1 ton / 2,000 pounds)

Where: E = organic compound emission rate in tons per year
EF = Ohio Cast Metals Association (OCMA) emission factor, 0.65 pounds of OC emissions per ton of sand used.
percentage of OC emitted = 50% based on estimations provided by the permittee from similar emissions units at the facility.

3. Emission Limitation
0.10 pound of particulate emissions per hour

Applicable Compliance Method
If required by Ohio EPA, compliance with the allowable particulate emission limit shall be determined in accordance with U.S. EPA Reference Methods 1 - 5 of 40 CFR Part 60, Appendix A.

The following calculation shall be used to document the hourly particulate emission rate:

E (lb/hr) = (amount of sand used, ton/hr) x (EF) x (percentage of particulate emitted)

Where: E = particulate emission rate in pounds per hour
EF = RACM emission factor, 0.35 pounds of particulate emissions per ton of sand used.
percentage of particulate emitted = 10% based on estimations provided by the permittee from similar emissions units at the facility.

4. Emission Limitation
0.44 ton of particulate emissions per year

Applicable Compliance Method
This limit is based on the allowable hourly emission rate (0.10 lb/hr) multiplied by the maximum

possible operating hours (8,760 hrs/yr), and divided by 2,000 lbs/ton. Therefore, compliance with the hourly limit shall also be a demonstration with the annual limit.

5. Emission Limitation
10% opacity for visible particulate emissions

Applicable Compliance Method
If required by Ohio EPA, compliance shall be determined by visible emission evaluations performed in accordance with OAC rule 3745-17-03(B)(1), using the procedures specified in U.S. EPA reference Method 9.

6. Emission Limitation
98% by weight control efficiency for catalyst gas emissions

Applicable Compliance Method
If required by Ohio EPA, the permittee shall determine compliance with the 98% control efficiency for catalysist gas emissions using U.S. EPA Reference Methods 1-4, and 18 of 40 CFR Part 60, Appendix A.

F. Miscellaneous Requirements

1. The terms and conditions in sections A, B, C.1 through C.4, D, and E of this permit are federally enforceable.

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.

Operations, Property, and/or Equipment	Applicable Rules/Requirements	
		OAC rule 3745-21-07(G)
P020 - Mold Core Station No. 20 (Shalco 321) vented to a sulfuric acid packed bed wet scrubber. Modification	OAC rule 3745-31-05(A)(3)	
		OAC rule 3745-21-07(G)(9)(h)
	OAC rule 3745-17-07(A)(1)	
	OAC rule 3745-17-11(B)(1)	

Applicable Emissions Limitations/Control Measures	
0.40 pound per hour and 1.76 ton per year of organic compound emissions.	OAC rule 3745-31-05(A)(3).
0.10 pound per hour and 0.44 ton per year of particulate emissions.	
This facility shall maintain for this emissions unit a sulfuric acid scrubber system with a control efficiency (i.e., destruction or removal efficiency) which is at least 98% by weight of the catalyst gas emissions (i.e., DMEA or DMIPA).	
Visible particulate emissions from the scrubber stack shall not exceed 10% opacity, as a six-minute average.	
The visible particulate emission limitation specified by this rule is less stringent than the limitation established pursuant to OAC rule 3745-31-05(A)(3).	
The emission limitation specified by this rule is less stringent than the limitation established pursuant to OAC rule 3745-31-05(A)(3).	
Exempt, per OAC rule 3745-21-07(G)(9)(h).	
The emission limitation specified by this rule is equivalent to the limitation established pursuant to	

2. Additional Terms and Conditions

2.a None

B. Operational Restrictions

1. The sulfuric acid scrubber system shall be used while this emissions unit is in operation.

2. The scrubber solution flow rate shall be continuously maintained at a value of not less than 150 gallons per minute at all times while the emissions unit is in operation.

3. The pH of the scrubber solution shall be maintained at or below 4.5.

4. The fluid level in the scrubber solution holding tanks shall be maintained above 11 inches.

5. The building in which this emissions unit is located shall be totally enclosed such that all catalyst gas emissions are captured for venting to the scrubber system. The differential pressure between the inside and outside of the enclosure shall not be less than 0.01 inch of water.

C. Monitoring and/or Recordkeeping Requirements

1. The permittee shall operate and maintain a system to continuously monitor and record hourly the following information:

   a. the scrubber solution flow rate, in gallons per minute;
   b. the pH of the scrubber solution; and
   c. the fluid level in the scrubber solution holding tanks.

2. The permittee shall maintain a daily log or record of operating time for the capture (collection) system, control device, monitoring equipment, and the associated emissions unit.

3. The permittee shall maintain the following records on a daily basis for this emissions unit:

   a. the operating hours of the emissions unit;
   b. the total amount of sand employed (in tons);
   c. the total amount of resin employed (in pounds); and
   d. the total amount of acid employed in the scrubber (in pounds).

4. The permittee shall install, maintain and operate monitoring devices which measure the pressure inside and outside the enclosure. The monitoring device shall be installed, calibrated, operated and maintained in accordance with the manufacturer's recommendations, instructions and operating manuals. The permittee shall record and maintain the difference in pressure between the enclosure and the surrounding area(s) on a daily basis.

5. The permit to install for this emissions unit (P020) and the other emissions unit in this project (P017, P018, P019, P021) was evaluated based on the actual materials (typically coatings and cleanup 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 for each pollutant emitted by this emissions unit using data from the permit to install application and the SCREEN 3.0 model (or other Ohio EPA approved model). The predicted 1-hour maximum ground-level concentration from the use of the SCREEN 3.0 model was compared to the Maximum Acceptable Ground-Level Concentration (MAGLC). The following summarizes the results of the modeling for the "worst case" pollutant(s):

Pollutant: Xylene
TLV (mg/m^3): 434.19 mg/m^3
Maximum Hourly Emission Rate (lbs/hr): 0.49 lb/hr*
Predicted 1-Hour Maximum Ground-Level Concentration (ug/m^3): 6.37 ug/m^3
MAGLC (ug/m^3): 10,338 ug/m^3

Pollutant: Cumene
TLV (mg/m^3): 245.79 mg/m^3
Maximum Hourly Emission Rate (lbs/hr): 0.35 lb/hr*
Predicted 1-Hour Maximum Ground-Level Concentration (ug/m^3): 4.55 ug/m^3
MAGLC (ug/m^3): 5,852 ug/m^3

Pollutant: Naphthalene
TLV (mg/m^3): 52.43 mg/m^3
Maximum Hourly Emission Rate (lbs/hr): 0.35 lb/hr*
Predicted 1-Hour Maximum Ground-Level Concentration (ug/m^3): 4.55 ug/m^3
MAGLC (ug/m^3): 1,248 ug/m^3

Pollutant: Phenol
TLV (mg/m^3): 19.24 mg/m^3
Maximum Hourly Emission Rate (lbs/hr): 0.28 lb/hr*
Predicted 1-Hour Maximum Ground-Level Concentration (ug/m^3): 3.64 ug/m^3
MAGLC (ug/m^3): 458 ug/m^3

Emissions Unit ID: **P020**

*This was modeled for emissions units P017, P018, P019, P020, and P021 combined.

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 still 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 (typically for coatings or cleanup materials), or the use of new materials, that would result in the emission of a compound with a lower Threshold Limit Value (TLV), as indicated in the most recent version of the handbook entitled "American Conference of Governmental Industrial Hygienists (ACGIH)," than the lowest TLV value previously modeled;

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.).

6. If the permittee determines that the "Air Toxic Policy" will be satisfied for the above changes, the Ohio EPA will not consider the change(s) to be a "modification" under OAC rule 3745-31-01(VV)(1)(a)(ii), and a modification of the existing permit to install will not be required. If the change(s) is (are) defined as a modification under other provisions of the modification definition (other than (VV)(1)(a)(ii)), 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 its 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 semi-annual deviation (excursion) reports that identify all periods of time when the sulfuric acid scrubber system was not in use while this emissions unit was in operation.

2. The permittee shall submit semi-annual deviation (excursion) reports that identify all periods of time during which the following scrubber parameters were not maintained at or above the required levels:

   a. the scrubber solution flow rate;
   b. the fluid level in the scrubber solution holding tanks; and
   c. the scrubber solution pH.

3. The permittee shall submit semi-annual pressure differential deviation (excursion) reports that identify all periods of time during which the enclosure was not maintained at the required differential pressure specified above.

4. The permittee shall submit an annual report to Ohio EPA, Northeast District Office, which includes the following information for the core making operation. The report shall be submitted by February 15 of each year and shall include the following information for the previous year:

   a. the annual operating hours of the scrubber system;
   b. the total amount of acid employed in the scrubber (in pounds); and
   c. the total amount of resins employed (in pounds).

E. Testing Requirements

1. <u>Emission Limitation</u>
   0.40 pound of OC emissions per hour

   <u>Applicable Compliance Method</u>
   If required by Ohio EPA, compliance with the allowable OC emission limit shall be determined in accordance with U.S. EPA Reference Methods 1 - 4, 25 or 25A of 40 CFR Part 60, Appendix A.

   The following calculation shall be used to document the hourly OC emission rate:

   E (lb/hr) = (amount of sand used, ton/hr) x (EF) x (percentage of OC emitted)

   Where: E = organic compound emission rate in pounds per hour
   EF = Ohio Cast Metals Association (OCMA) emission factor, 0.65 pounds of OC emissions per ton of sand used.
   percentage of OC emitted = 50% based on estimations provided by the permittee from similar emissions units at the facility.

2. Emission Limitation
1.75 ton of OC emissions per year

Applicable Compliance Method
At the end of each year, the permittee shall calculate and document the annual OC emissions using the following calculation:

E (ton/yr) = (tons of sand used per year) x (EF) x (percentage of OC emitted) x (1 ton / 2,000 pounds)

Where: E = organic compound emission rate in tons per year
EF = Ohio Cast Metals Association (OCMA) emission factor, 0.65 pounds of OC emissions per ton of sand used.
percentage of OC emitted = 50% based on estimations provided by the permittee from similar emissions units at the facility.

3. Emission Limitation
0.10 pound of particulate emissions per hour

Applicable Compliance Method
If required by Ohio EPA, compliance with the allowable particulate emission limit shall be determined in accordance with U.S. EPA Reference Methods 1 - 5 of 40 CFR Part 60, Appendix A.

The following calculation shall be used to document the hourly particulate emission rate:

E (lb/hr) = (amount of sand used, ton/hr) x (EF) x (percentage of particulate emitted)

Where: E = particulate emission rate in pounds per hour
EF = RACM emission factor, 0.35 pounds of particulate emissions per ton of sand used.
percentage of particulate emitted = 10% based on estimations provided by the permittee from similar emissions units at the facility.

4. Emission Limitation
0.44 ton of particulate emissions per year

Applicable Compliance Method
This limit is based on the allowable hourly emission rate (0.10 lb/hr) multiplied by the maximum

possible operating hours (8,760 hrs/yr), and divided by 2,000 lbs/ton. Therefore, compliance with the hourly limit shall also be a demonstration with the annual limit.

5. Emission Limitation
10% opacity for visible particulate emissions

Applicable Compliance Method
If required by Ohio EPA, compliance shall be determined by visible emission evaluations performed in accordance with OAC rule 3745-17-03(B)(1), using the procedures specified in U.S. EPA reference Method 9.

6. Emission Limitation
98% by weight control efficiency for catalyst gas emissions

Applicable Compliance Method
If required by Ohio EPA, the permittee shall determine compliance with the 98% control efficiency for catalysist gas emissions using U.S. EPA Reference Methods 1-4, and 18 of 40 CFR Part 60, Appendix A.

F. Miscellaneous Requirements

1. The terms and conditions in sections A, B, C.1 through C.4, D, and E of this permit are federally enforceable.

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.

Operations, Property, and/or Equipment	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
P021 - Two sand/binder mixers (CE-600 Mixer 1 and CE-600 Mixer 2) vented to a sulfuric acid packed bed wet scrubber. One mixer is designated as a back-up only. Modification	OAC rule 3745-31-05(A)(3)	1.70 pound per hour and 7.45 tons per year of organic compound emissions. 1.60 pound per hour and 7.01 tons per year of particulate emissions. Visible particulate emissions from the scrubber stack shall not exceed 10% opacity, as a six-minute average.
	OAC rule 3745-17-07(A)(1)	The visible particulate emission limitation specified by this rule is less stringent than the limitation established pursuant to OAC rule 3745-31-05(A)(3).
	OAC rule 3745-17-11(B)(1)	The emission limitation specified by this rule is less stringent than the limitation established pursuant to OAC rule 3745-31-05(A)(3).

2. Additional Terms and Conditions

2.a None

B. Operational Restrictions

None

C. Monitoring and/or Recordkeeping Requirements

1. The permittee shall maintain the following records on a daily basis for this emissions unit:

   a. the operating hours of the emissions unit;
   b. the total amount of sand employed (in tons); and
   c. the total amount of resin employed (in pounds).

2. The permit to install for this emissions unit (P021) and the other emissions unit in this project (P017, P018, P019, P020) was evaluated based on the actual materials (typically coatings and cleanup 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 for each pollutant emitted by this emissions unit using data from the permit to install application and the SCREEN 3.0 model (or other Ohio EPA approved model). The predicted 1-hour maximum ground-level concentration from the use of the SCREEN 3.0 model was compared to the Maximum Acceptable Ground-Level Concentration (MAGLC). The following summarizes the results of the modeling for the "worst case" pollutant(s):

   Pollutant: Xylene
   TLV (mg/m^3): 434.19 mg/m^3
   Maximum Hourly Emission Rate (lbs/hr): 0.49 lb/hr*
   Predicted 1-Hour Maximum Ground-Level Concentration (ug/m^3): 6.37 ug/m^3
   MAGLC (ug/m^3): 10,338 ug/m^3

   Pollutant: Cumene
   TLV (mg/m^3): 245.79 mg/m^3
   Maximum Hourly Emission Rate (lbs/hr): 0.35 lb/hr*
   Predicted 1-Hour Maximum Ground-Level Concentration (ug/m^3): 4.55 ug/m^3
   MAGLC (ug/m^3): 5,852 ug/m^3

   Pollutant: Naphthalene
   TLV (mg/m^3): 52.43 mg/m^3
   Maximum Hourly Emission Rate (lbs/hr): 0.35 lb/hr*
   Predicted 1-Hour Maximum Ground-Level Concentration (ug/m^3): 4.55 ug/m^3
   MAGLC (ug/m^3): 1,248 ug/m^3

   Pollutant: Phenol
   TLV (mg/m^3): 19.24 mg/m^3

Maximum Hourly Emission Rate (lbs/hr): 0.28 lb/hr*
Predicted 1-Hour Maximum Ground-Level Concentration (ug/m^3): 3.64 ug/m^3
MAGLC (ug/m^3): 458 ug/m^3

*This was modeled for emissions units P017, P018, P019, P020, and P021 combined.

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 still 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 (typically for coatings or cleanup materials), or the use of new materials, that would result in the emission of a compound with a lower Threshold Limit Value (TLV), as indicated in the most recent version of the handbook entitled "American Conference of Governmental Industrial Hygienists (ACGIH)," than the lowest TLV value previously modeled;

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.).

3. If the permittee determines that the "Air Toxic Policy" will be satisfied for the above changes, the Ohio EPA will not consider the change(s) to be a "modification" under OAC rule 3745-31-01(VV)(1)(a)(ii), and a modification of the existing permit to install will not be required. If the change(s) is (are) defined as a modification under other provisions of the modification definition (other than (VV)(1)(a)(ii)), 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 its 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 semi-annual pressure differential deviation (excursion) reports that identify all periods of time during which the permanent total enclosure was not maintained at the required differential pressure specified above.

2. The permittee shall submit an annual report to Ohio EPA, Northeast District Office, which includes the following information for the core making operation. The report shall be submitted by February 15 of each year and shall include the following information for the previous year:

   a. the operating hours of the emissions unit;
   b. the total amount of sand employed (in tons); and
   c. the total amount of resin employed (in pounds).

E. Testing Requirements

1. Emission Limitation
   1.70 pound of OC emissions per hour

   Applicable Compliance Method
   If required by Ohio EPA, compliance with the allowable OC emission limit shall be determined in accordance with U.S. EPA Reference Methods 1 - 4, 25 or 25A of 40 CFR Part 60, Appendix A.

   The following calculation shall be used to document the hourly OC emission rate:

   E (lb/hr) = (amount of sand used, ton/hr) x (EF) x (percentage of OC emitted)

   Where: E = organic compound emission rate in pounds per hour
   EF = Ohio Cast Metals Association (OCMA) emission factor, 0.65 pounds of OC emissions per ton of sand used.
   percentage of OC emitted = 50% based on estimations provided by the permittee from similar emissions units at the facility.

2. Emission Limitation
   7.45 tons of OC emissions per year

   Applicable Compliance Method
   At the end of each year, the permittee shall calculate and document the annual OC emissions using

the following calculation:

E (ton/yr) = (tons of sand used per year) x (EF) x (percentage of OC emitted) x (1 ton / 2,000 pounds)

Where: E = organic compound emission rate in tons per year
EF = Ohio Cast Metals Association (OCMA) emission factor, 0.65 pounds of OC emissions per ton of sand used.
percentage of OC emitted = 50% based on estimations provided by the permittee from similar emissions units at the facility.

3. Emission Limitation
1.60 pound of particulate emissions per hour

Applicable Compliance Method
If required by Ohio EPA, compliance with the allowable particulate emission limit shall be determined in accordance with U.S. EPA Reference Methods 1 - 5 of 40 CFR Part 60, Appendix A.

The following calculation shall be used to document the hourly particulate emission rate:

E (lb/hr) = (amount of sand used, ton/hr) x (EF) x (percentage of particulate emitted)

Where: E = particulate emission rate in pounds per hour
EF = RACM emission factor, 0.35 pounds of particulate emissions per ton of sand used.
percentage of particulate emitted = 90% based on estimations provided by the permittee from similar emissions units at the facility.

4. Emission Limitation
7.01 tons of particulate emissions per year

Applicable Compliance Method
This limit is based on the allowable hourly emission rate (1.60 lbs/hr) multiplied by the maximum possible operating hours (8,760 hrs/yr), and divided by 2,000 lbs/ton. Therefore, compliance with the hourly limit shall also be a demonstration with the annual limit.

5. Emission Limitation
10% opacity for visible particulate emissions

Applicable Compliance Method
If required by Ohio EPA, compliance shall be determined by visible emission evaluations performed in accordance with OAC rule 3745-17-03(B)(1), using the procedures specified in U.S. EPA reference Method 9.

F. Miscellaneous Requirements

1. The terms and conditions in sections A, B, C.1, D, and E of this permit are federally enforceable.