State of Ohio Environmental Protection Agency

Street Address:
Lazarus Gov. Center
122 S. Front Street
Columbus, OH 43215

**TELE:** (614) 644-3020 **FAX:** (614) 644-2329

Mailing Address:
Lazarus Gov. Center
P.O. Box 1049
Columbus, OH 43216-1049

**RE: FINAL PERMIT TO INSTALL**
**ASHTABULA COUNTY**
**Application No: 02-18558**

**CERTIFIED MAIL**

| | |
|---|---|
| | TOXIC REVIEW |
| | PSD |
| Y | SYNTHETIC MINOR |
| | CEMS |
| | MACT |
| | NSPS |
| | NESHAPS |
| | NETTING |
| | MAJOR NON-ATTAINMENT |
| | MODELING SUBMITTED |
| | GASOLINE DISPENSING FACILITY |

**DATE: 12/9/2003**

Kraftmaid Cabinetry, Plant 3
Bennett Wetzel
15535 South State St.
Middlefield, OH 440621055

Enclosed please find an Ohio EPA Permit to Install which will allow you to install the described source(s) in a manner indicated in the permit. Because this permit contains several conditions and restrictions, I urge you to read it carefully.

The Ohio EPA is urging companies to investigate pollution prevention and energy conservation. Not only will this reduce pollution and energy consumption, but it can also save you money. If you would like to learn ways you can save money while protecting the environment, please contact our Office of Pollution Prevention at (614) 644-3469.

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

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: 12/9/2003** |
| **Terms and Conditions** | **Effective Date: 12/9/2003** |

**FINAL PERMIT TO INSTALL 02-18558**

| | |
|---|---|
| Application Number: | 02-18558 |
| APS Premise Number: | 0204000360 |
| Permit Fee: | **$4600** |
| Name of Facility: | Kraftmaid Cabinetry, Plant 3 |
| Person to Contact: | Bennett Wetzel |
| Address: | 15535 South State St.<br>Middlefield, OH 440621055 |

Location of proposed air contaminant source(s) [emissions unit(s)]:
**150 Grand Valley Ave.**
**Orwell**, **Ohio**

Description of proposed emissions unit(s):
**new spray booths.**

The above named entity is hereby granted a Permit to Install for the above described emissions unit(s) pursuant to Chapter 3745-31 of the Ohio Administrative Code. Issuance of this permit 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 emissions unit(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 and specifications, the above described emissions unit(s) of pollutants will be granted the necessary permits to operate (air) or NPDES permits as applicable.

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 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 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.

**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**

| Pollutant | Tons Per Year |
|---|---|
| VOC | 55.4 |
| Single HAP | 9.5 |
| Total HAP | 24.8 |
| NOx | 3.2 |
| CO | 2.7 |

## 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 |
|---|---|---|
| K007 - Spray booth 1 of overhead conveyor line 3, controlled by regenerative thermal oxidizer No. 1 | OAC rule 3745-31-05(A)(3) | Volatile Organic Compound (VOC) emissions shall not exceed 151.8 pounds per day.<br><br>Hazardous Air Pollutant (HAP) emissions shall not exceed 792 pounds per month for an individual HAP and 2,067 pounds per month for combined HAPs.<br><br>Nitrogen Oxide (NOx) emissions from the combustion of natural gas from the thermal oxidizer shall not exceed 0.7 pound per hour, 3.2 tons per year.<br><br>Carbon Monoxide (CO) emissions from the combustion of natural gas from the thermal oxidizer shall not exceed 0.6 pound per hour, 2.7 tons per year.<br><br>The requirements of this rule also include compliance with the requirements of OAC rule 3745-35-02(D) |
| | OAC rule 3745-35-07(B) | See Section A.2.a through A.2.c. |
| | OAC rule 3745-21-07(G)(2) | See Section A.2.d and A.2.e. |



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| | The requirements of this rule are less stringent than the requirements established pursuant to OAC rule 3745-31-05(A)(3). |

**2. Additional Terms and Conditions**

**2.a** The permittee shall design enclosure #1 that will house K007, K008, K009, K010, K011, K012, K013, K014, K015, K016 and K017 in such a manner as to function as a permanent total enclosure (PTE) as defined by U.S. EPA Method 204. The use of the PTE, as defined in Reference Method 204, provides for 100% capture efficiency.

**2.b** The permittee shall install and maintain an incineration system to control the VOC emissions from the permanent total enclosure, PTE #1. The incinerator system shall have a VOC destruction efficiency of at least 99% by weight.

**2.c** The volatile organic compound (VOC) content of the Coatings (including stains, toners, glazes, topcoats and sealers) and Solvents & Support Materials used by the permittee at this facility shall not exceed the following VOC content, minus water:

| | |
|---|---|
| Coatings | 7.5 lbs VOC/gallon |
| Solvents & Support Materials | 9.0 lbs VOC/gallon |

**2.d** Emissions from the Regenerative Thermal Oxidizer (RTO) #1 shall be restricted in such a manner to limit emissions from emissions units K007, K008, K009, K010, K011, K012, K013, K014, K015, K016 and K017 to the following:

i. 27.7 tons VOC per rolling 12 month period
ii. 4.75 tons per rolling 12 month period of any individual HAP
iii. 12.4 tons per rolling 12 month period of total aggregate HAPs

**2.e** Emissions from the entire facility shall not exceed the following limits:

i. 55.4 tons VOC per rolling 12 month period
ii. 9.5 tons per rolling 12 month period of any individual HAP
iii. 24.8 tons per rolling 12 month period of total aggregate HAPs

**B. Operational Restrictions**

1. The average combustion temperature within RTO #1, for any 3-hour block of time when an associated emissions unit is in operation, shall not be more than 50 degrees Fahrenheit below the average temperature during the most recent emission test that demonstrated the RTO system was in compliance with the destruction efficiency requirement.



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2. The permanent total enclosure shall be maintained under negative pressure, at a minimum pressure differential that is not less than the minimum pressure differential (inches of water) established during the most recent emission test that demonstrated the emissions unit was in compliance or 0.007 inches of water as established in Method 204, whenever the emissions unit is in operation.

3. The permittee shall limit the total coating and solvent usage for PTE #1 (K007, K008, K009, K010, K011, K012, K013, K014, K015, K016 and K017) as follows:

| | |
|---|---|
| Coatings (including stains, toners, glazes, topcoats and sealers) | 43,196 gallons/month |
| Solvents & Support Materials | 15,300 gallons/month |

## C. Monitoring and/or Recordkeeping Requirements

1. The permittee shall install, maintain and operate monitoring devices and a recorder which simultaneously measure and record the pressure inside and outside the permanent total enclosure.

   The monitoring and recording devices 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 following information on a daily basis:

   a. The difference in pressure between the permanent total enclosure and the surrounding area(s).

   b. A log or record of operating time for the capture (collection) system, control device, monitoring equipment, and the associated emissions unit.

2. The permittee shall operate and maintain a continuous temperature monitor and recorder which measures and records the combustion temperature within the thermal incinerator when the emissions unit is in operation. Units shall be in degrees Fahrenheit. The monitoring and recording devices shall be capable of accurately measuring the desired parameter. The temperature monitor and recorder shall be installed, calibrated, operated and maintained in accordance with the manufacturer's recommendations, with any modifications deemed necessary by the permittee.

3. The permittee shall collect and record the following information for each day for RTO #1:

   a. A log of operating time for the capture (collection) system, control device, monitoring equipment, and the associated emissions units.

   b. All 3-hour blocks of time during which the average combustion temperature within the thermal incinerator, when any of the associated emissions unit was in operation, was more than 50 degrees Fahrenheit below the average temperature during the most recent


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emission test that demonstrated the incinerator system was in compliance with the destruction efficiency requirement.

4. The permittee shall collect and record the following information each day for emissions units K007, K008, K009, K010, K011, K012, K013, K014, K015, K016 and K017.

   a. The name and identification number of each coating, solvent and support material, and cleanup material, as applied.

   b. The VOC content of each coating, solvent and support material, and cleanup material, as applied, in pounds per gallon and in pounds per gallon excluding water and exempt solvents.

   c. The number of gallons of each coating, solvent and support material, and cleanup material employed.

   d. The content of each individual HAP (i.e. xylene, toluene, and any other HAP) in each coating, solvent and support material and cleanup material employed, in pounds per gallon.

   e. The total uncontrolled VOC emission rate for all coatings, solvent and support materials, and cleanup materials employed, in pounds per day. This calculation is the summation of the product of (4.b or VOC content in pounds per gallon) times (4.c or number of gallons per day) for each coating, solvent, support material and cleanup material employed.

   f. The total uncontrolled emission rate for each individual HAP from all coatings, solvent and support materials and cleanup materials employed, in pounds per day. This calculation is the summation of the product of (4.d or individual HAP content in pounds per gallon) times (4.c or number of gallons per day) for each coating, solvent, support material and cleanup material employed.

   g. The total uncontrolled emission rate of all HAPs collectively from all coatings, solvent and support materials and cleanup materials employed, in pounds per day. This calculation is summation of each individual HAP emission rate, as determined above in 4.f.

   h. The calculated, controlled VOC emission rate for all coatings, solvent and support materials and cleanup materials, in pounds per day. The controlled, daily VOC emission rate shall be calculated using the overall control efficiency for the control equipment as determined during the most recent emission test that demonstrated that the emissions unit was in compliance. The controlled VOC emission rate is the uncontrolled VOC emission rate multiplied by (1 minus the overall control efficiency, in percentage).

   i. The calculated, controlled emission rate for each individual HAP from all coatings, solvent and support materials and cleanup materials, in pounds per day. The controlled



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emission rate shall be calculated using the overall control efficiency for the control equipment as determined during the most recent emission test that demonstrated that the emissions unit was in compliance. The controlled emission rate for each individual HAP is the uncontrolled emission rate multiplied by (1 minus the overall control efficiency, in percentage).

j. The total controlled emission rate of all HAPs collectively from all coatings, solvent and support materials and cleanup materials employed, in pounds per day. This calculation is summation of each individual HAP controlled emission rate, as determined above in 4.i.

5. The permittee shall collect and record the following information each month for emissions units K007, K008, K009, K010, K011, K012, K013, K014, K015, K016 and K017.

a. The controlled emission rate for each individual HAP from all coatings, solvent and support materials and cleanup materials, in pounds per rolling 12 month period. This calculation is the summation of each daily emission rate, as recorded per Section C.4.i, for the past twelve months and then multiplied by ton/2,000 lbs.

b. The controlled emission rate for all HAPs collectively from all coatings, solvent and support materials and cleanup materials, in pounds per rolling 12 month period. This calculation is the summation of each daily emission rate, as recorded per Section C.4.j, for the past twelve months and then multiplied by ton/2,000 lbs.

c. The controlled VOC emission rate for all coatings, solvent and support materials and cleanup materials, in tons per rolling 12 month period. This calculation is the summation of each daily emission rate, as recorded per Section C.4.h, for the past twelve months and then multiplied by ton/2,000 lbs.

d. The coating usage rate as described in Section B.3 in gallons per month.

e. The solvent usage rate as described in Section B.3 in gallons per month.

6. The permit to install for this emissions unit 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 for each pollutant emitted by this emissions unit using data from the permit to install application and the SCREEN 3.0 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 table summarizes the results of the modeling from RTO #1:

| Compound | TLV ($ug.m^3$) | MAGLC = TLV/42 ($ug.m^3$) | Emission rate (g/s) | Predicted 1-hr max ground level conc. ($ug.m^3$) | MAGLC exceeded (Y/N) |
|---|---|---|---|---|---|


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| | | | | | |
|---|---|---|---|---|---|
| formaldehyde | 271 | 6 | 0.0011 | 0.12 | N |
| methanol | 262,086 | 6,240 | 0.23 | 26.43 | N |
| acetone | 1,187,116 | 28,264 | 0.01 | 1.15 | N |
| MEK | 589,775 | 14,042 | 0.32 | 35.88 | N |
| naphthalene | 52,429 | 1,248 | 0.0001 | 0.008 | N |
| cumene | 245,787 | 5,852 | 0.000001 | 0.0001 | N |
| ethylbenzene | 4343,192 | 10,338 | 0.22 | 25.35 | N |
| MIBK | 204,826 | 4,877 | 0.18 | 20.91 | N |
| toluene | 188,405 | 4,486 | 0.57 | 65.11 | N |
| hexane | 1,762,372 | 41,961 | 0.000001 | 0.0001 | N |
| xylene | 434,192 | 10,338 | 1.03 | 116.63 | N |

7. 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 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.).

   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



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(other than (VV)(1)(a)(ii)), then the permittee shall obtain a final permit to install prior to the change(s).

8. 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 satisfied 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 quarterly summaries of the following records:

   a. A log of operating time for the capture (collection) system, control device, monitoring equipment, and the associated emission unit.

   b. All 3-hour blocks of time during which the average combustion temperature within the thermal incinerator does not comply with the temperature limitation specified above.

   c. All periods of time during which the permanent total enclosure was not maintained at the required differential pressure specified above.

   d. A list of all days when the daily VOC emission rate from RTO #1 exceeded 151.8 pounds.

   e. A list of any days when noncomplying coatings were used.

   f. A list of all months when the amount of coatings (including stains, toners, glazes, topcoats and sealers) exceeded 43,196 gallons, and the amount of solvent and support materials exceeded 15,300 gallons.

2. The permittee shall also submit a quarterly deviation report when the total controlled emissions of VOC, individual HAPs, and the total aggregate HAPs from RTO #1 exceed the limits listed in A.2.d and A.2.e respectively.

## E. Testing Requirements

1. The permittee shall conduct, or have conducted, emission testing for this emission unit in accordance with the following requirements:



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a. The emission testing shall be conducted within 3 months after issuance of this permit.

b. The emission testing shall be conducted to demonstrate compliance with the VOC capture efficiency and control efficiency requirement specified in Section A.2.a. Emission testing shall also be conducted to establish the average combustion temperature within the thermal incinerator, as specified in Section B.1, and to establish the minimum pressure differential within the permanent total enclosure, as specified in Section B.2.

c. The test(s) shall be conducted while the emissions units are operating at or near their maximum capacity, unless otherwise specified or approved by the Ohio EPA Northeast District Office.

d. The capture efficiency shall be determined using Methods 204 through 204F, as specified in 40 CFR part 51, Appendix M, or the permittee may request to use an alternative method or procedure for the determination of capture efficiency in accordance with the U.S. EPA's "Guideline for Determining Capture Efficiency," dated January 9, 1995. (The Ohio EPA will consider the request, including an evaluation of the applicability, necessity, and validity of the alternative, and may approve the use of the alternative if such approval does not contravene any other applicable requirement.)

e. The control efficiency (i.e., the percent reduction in mass emissions between the inlet and outlet of the control system) shall be determined in accordance with the test methods and procedures specified in OAC rule 3745-21-10 or an approved alternative test protocol. The test methods and procedures selected shall be based on a consideration of the diversity of the organic species present and their total concentration, and on a consideration of the potential presence of interfering gases.

f. U.S. EPA Method 24 shall be used, in accordance with OAC rule 3745-21-04(B)(5), to determine the VOC contents for all coatings, solvent and support materials, and cleanup materials used during the performance test(s). If, pursuant to section 4.3 of Method 24, 40 CFR part 60, Appendix A, an owner or operator determines that Method 24 cannot be used for a particular coating, solvent and support material, or cleanup material, the permittee shall so notify the Administrator of the U.S. EPA and shall use formulation data for that coating, solvent and support material, or cleanup material to demonstrate compliance until the U.S. EPA provides alternative analytical procedures or alternative precision statements for Method 24.

g. Not later than 30 days prior to the proposed test date(s), the permittee shall submit an "Intent to Test" notification to the Ohio EPA Northeast District Office. The "Intent to Test" notification shall describe in detail the proposed test methods and procedures, the emissions unit operating parameters, the time(s) and date(s) of the test(s), and the person(s) who will be conducting the test(s). Failure to submit such notification for review and approval prior to the test(s) may result in the Ohio EPA Northeast District Office's refusal to accept the results of the emission test(s).



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Personnel from the Ohio EPA Northeast District Office shall be permitted to witness the test(s), examine the testing equipment, and acquire data and information necessary to ensure that the operation of the emissions unit and the testing procedures provide a valid characterization of the emissions from the emissions unit and/or the performance of the control equipment.

h. A comprehensive written report on the results of the emissions test(s) shall be signed by the person or persons responsible for the tests and submitted to the Ohio EPA Northeast District Office within 30 days following completion of the test(s).

2. Emission Limitation:
151.8 lbs VOC /day and 27.7 tons VOC per rolling 12 month period from RTO #1

Applicable Compliance Method:
Compliance shall be based upon the recordkeeping specified in Section C.4 and C.5.

3. Emission Limitation:
792 lbs/month and 4.75 tons per rolling 12 month period of an individual HAP from RTO #1

Applicable Compliance Method:
Compliance shall be based upon the recordkeeping specified in Section C.5.

4. Emission Limitation:
2,067 lbs/month and 12.4 tons per rolling 12 month period of all HAPs from RTO #1

Applicable Compliance Method:
Compliance shall be based upon the recordkeeping specified in Section C.5.

5. Compliance with the VOC content restrictions of each coating, solvent and support material, and cleanup material shall be based upon the use of U.S. EPA Method 24.

6. Emission Limitation:
0.7 lb NOx/hr and 3.2 tons NOx/year from the combustion of natural gas in the thermal oxidizer.

Applicable Compliance Method:
The following equation shall be used to determine the hourly emission rate.

$$E = EF \times R \times 1/H$$

where:

E = Emission rate, in lbs/hr

EF = Emission factor (AP-42, Section 1.4) for NOx is 100 lbs/mmcf.



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R = Maximum rating of the thermal oxidizer reported to be 7.5 mmBtu/hr.

H = Heating value of the natural gas, in Btu/cf. 1,020 Btu/cf was used in the emission calculation for this permit.

The yearly rate, in tons/year, shall be determined by multiplying the hourly rate (lbs/hr) as calculated above, by (# hrs of operation/year) and (ton/2,000 lbs).

**7.** Emission Limitation:
0.6 lb CO/hr and 2.7 tons CO/year from the combustion of natural gas in the thermal oxidizer.

Applicable Compliance Method:
The following equation shall be used to determine the hourly emission rate.

E = EF x R x 1/H

where:

E = Emission rate, in lbs/hr

EF = Emission factor (AP-42, Section 1.4) for CO is 84 lbs/mmcf.

R = Maximum rating of the thermal oxidizer reported to be 7.5 mmBtu/hr.

H = Heating value of the natural gas, in Btu/cf. 1,020 Btu/cf was used in the emission calculation for this permit.

The yearly rate (tons/year) shall be determined by multiplying the hourly rate (lbs/hr), as calculated above, by (# hrs of operation/year) and (ton/2,000 lbs).

## F. Miscellaneous Requirements

1. In accordance with the provisions of OAC rule 3745-35-07, the following terms and conditions of this permit to install are federally enforceable: A-F, except C.6, C.7 and C.8.

2. The terms and condition of this permit supercede those contained with PTI # 02-12833. The exemption would be that the terms and conditions for F003 (Sawdust Storage Bin #1 Load-out) and F004 (Sawdust Storage Bin #2 Load-out) contained in PTI #02-12833 are still applicable.



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## 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 |
|---|---|---|
| K008 - Spray booth 2 of overhead conveyor line 3, controlled by regenerative thermal oxidizer No. 1 | OAC rule 3745-31-05(A)(3) | Volatile Organic Compound (VOC) emissions shall not exceed 151.8 pounds per day.<br><br>Hazardous Air Pollutant (HAP) emissions shall not exceed 792 pounds per month for an individual HAP and 2,067 pounds per month for combined HAPs.<br><br>Nitrogen Oxide (NOx) emissions from the combustion of natural gas from the thermal oxidizer shall not exceed 0.7 pound per hour, 3.2 tons per year.<br><br>Carbon Monoxide (CO) emissions from the combustion of natural gas from the thermal oxidizer shall not exceed 0.6 pound per hour, 2.7 tons per year.<br><br>The requirements of this rule also include compliance with the requirements of OAC rule 3745-35-02(D) |
| | OAC rule 3745-35-07(B) | See Section A.2.a through A.2.c. |
| | OAC rule 3745-21-07(G)(2) | See Section A.2.d and A.2.e. |



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| | |
|---|---|
| | The requirements of this rule are less stringent than the requirements established pursuant to OAC rule 3745-31-05(A)(3). |

**2. Additional Terms and Conditions**

**2.a** The permittee shall design enclosure #1 that will house K007, K008, K009, K010, K011, K012, K013, K014, K015, K016 and K017 in such a manner as to function as a permanent total enclosure (PTE) as defined by U.S. EPA Method 204. The use of the PTE, as defined in Reference Method 204, provides for 100% capture efficiency.

**2.b** The permittee shall install and maintain an incineration system to control the VOC emissions from the permanent total enclosure, PTE #1. The incinerator system shall have a VOC destruction efficiency of at least 99% by weight.

**2.c** The volatile organic compound (VOC) content of the Coatings (including stains, toners, glazes, topcoats and sealers) and Solvents & Support Materials used by the permittee at this facility shall not exceed the following VOC content, minus water:

| | |
|---|---|
| Coatings | 7.5 lbs VOC/gallon |
| Solvents & Support Materials | 9.0 lbs VOC/gallon |

**2.d** Emissions from the Regenerative Thermal Oxidizer (RTO) #1 shall be restricted in such a manner to limit emissions from emissions units K007, K008, K009, K010, K011, K012, K013, K014, K015, K016 and K017 to the following:

i. 27.7 tons VOC per rolling 12 month period
ii. 4.75 tons per rolling 12 month period of any individual HAP
iii. 12.4 tons per rolling 12 month period of total aggregate HAPs

**2.e** Emissions from the entire facility shall not exceed the following limits:

i. 55.4 tons VOC per rolling 12 month period
ii. 9.5 tons per rolling 12 month period of any individual HAP
iii. 24.8 tons per rolling 12 month period of total aggregate HAPs

**B. Operational Restrictions**

1. The average combustion temperature within RTO #1, for any 3-hour block of time when an associated emissions unit is in operation, shall not be more than 50 degrees Fahrenheit below the average temperature during the most recent emission test that demonstrated the RTO system was in compliance with the destruction efficiency requirement.



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2. The permanent total enclosure shall be maintained under negative pressure, at a minimum pressure differential that is not less than the minimum pressure differential (inches of water) established during the most recent emission test that demonstrated the emissions unit was in compliance or 0.007 inches of water as established in Method 204, whenever the emissions unit is in operation.

3. The permittee shall limit the total coating and solvent usage for PTE #1 (K007, K008, K009, K010, K011, K012, K013, K014, K015, K016 and K017) as follows:

| | |
|---|---|
| Coatings (including stains, toners, glazes, topcoats and sealers) | 43,196 gallons/month |
| Solvents & Support Materials | 15,300 gallons/month |

## C. Monitoring and/or Recordkeeping Requirements

1. The permittee shall install, maintain and operate monitoring devices and a recorder which simultaneously measure and record the pressure inside and outside the permanent total enclosure.

   The monitoring and recording devices 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 following information on a daily basis:

   a. The difference in pressure between the permanent total enclosure and the surrounding area(s).

   b. A log or record of operating time for the capture (collection) system, control device, monitoring equipment, and the associated emissions unit.

2. The permittee shall operate and maintain a continuous temperature monitor and recorder which measures and records the combustion temperature within the thermal incinerator when the emissions unit is in operation. Units shall be in degrees Fahrenheit. The monitoring and recording devices shall be capable of accurately measuring the desired parameter. The temperature monitor and recorder shall be installed, calibrated, operated and maintained in accordance with the manufacturer's recommendations, with any modifications deemed necessary by the permittee.

3. The permittee shall collect and record the following information for each day for RTO #1:

   a. A log of operating time for the capture (collection) system, control device, monitoring equipment, and the associated emissions units.

   b. All 3-hour blocks of time during which the average combustion temperature within the thermal incinerator, when any of the associated emissions unit was in operation, was more than 50 degrees Fahrenheit below the average temperature during the most recent


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emission test that demonstrated the incinerator system was in compliance with the destruction efficiency requirement.

4. The permittee shall collect and record the following information each day for emissions units K007, K008, K009, K010, K011, K012, K013, K014, K015, K016 and K017.

   a. The name and identification number of each coating, solvent and support material, and cleanup material, as applied.

   b. The VOC content of each coating, solvent and support material, and cleanup material, as applied, in pounds per gallon and in pounds per gallon excluding water and exempt solvents.

   c. The number of gallons of each coating, solvent and support material, and cleanup material employed.

   d. The content of each individual HAP (i.e. xylene, toluene, and any other HAP) in each coating, solvent and support material and cleanup material employed, in pounds per gallon.

   e. The total uncontrolled VOC emission rate for all coatings, solvent and support materials, and cleanup materials employed, in pounds per day. This calculation is the summation of the product of (4.b or VOC content in pounds per gallon) times (4.c or number of gallons per day) for each coating, solvent, support material and cleanup material employed.

   f. The total uncontrolled emission rate for each individual HAP from all coatings, solvent and support materials and cleanup materials employed, in pounds per day. This calculation is the summation of the product of (4.d or individual HAP content in pounds per gallon) times (4.c or number of gallons per day) for each coating, solvent, support material and cleanup material employed.

   g. The total uncontrolled emission rate of all HAPs collectively from all coatings, solvent and support materials and cleanup materials employed, in pounds per day. This calculation is summation of each individual HAP emission rate, as determined above in 4.f.

   h. The calculated, controlled VOC emission rate for all coatings, solvent and support materials and cleanup materials, in pounds per day. The controlled, daily VOC emission rate shall be calculated using the overall control efficiency for the control equipment as determined during the most recent emission test that demonstrated that the emissions unit was in compliance. The controlled VOC emission rate is the uncontrolled VOC emission rate multiplied by (1 minus the overall control efficiency, in percentage).



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i. The calculated, controlled emission rate for each individual HAP from all coatings, solvent and support materials and cleanup materials, in pounds per day. The controlled emission rate shall be calculated using the overall control efficiency for the control equipment as determined during the most recent emission test that demonstrated that the emissions unit was in compliance. The controlled emission rate for each individual HAP is the uncontrolled emission rate multiplied by (1 minus the overall control efficiency, in percentage).

j. The total controlled emission rate of all HAPs collectively from all coatings, solvent and support materials and cleanup materials employed, in pounds per day. This calculation is summation of each individual HAP controlled emission rate, as determined above in 4.i.

5. The permittee shall collect and record the following information each month for emissions units K007, K008, K009, K010, K011, K012, K013, K014, K015, K016 and K017.

a. The controlled emission rate for each individual HAP from all coatings, solvent and support materials and cleanup materials, in pounds per rolling 12 month period. This calculation is the summation of each daily emission rate, as recorded per Section C.4.i, for the past twelve months and then multiplied by ton/2,000 lbs.

b. The controlled emission rate for all HAPs collectively from all coatings, solvent and support materials and cleanup materials, in pounds per rolling 12 month period. This calculation is the summation of each daily emission rate, as recorded per Section C.4.j, for the past twelve months and then multiplied by ton/2,000 lbs.

c. The controlled VOC emission rate for all coatings, solvent and support materials and cleanup materials, in tons per rolling 12 month period. This calculation is the summation of each daily emission rate, as recorded per Section C.4.h, for the past twelve months and then multiplied by ton/2,000 lbs.

d. The coating usage rate as described in Section B.3 in gallons per month.

e. The solvent usage rate as described in Section B.3 in gallons per month.

6. The permit to install for this emissions unit 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 for each pollutant emitted by this emissions unit using data from the permit to install application and the SCREEN 3.0 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 table summarizes the results of the modeling from RTO #1:



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| Compound | TLV (ug.m$^3$) | MAGLC = TLV/42 (ug.m$^3$) | Emission rate (g/s) | Predicted 1-hr max ground level conc. (ug.m$^3$) | MAGLC exceeded (Y/N) |
|---|---|---|---|---|---|
| formaldehyde | 271 | 6 | 0.0011 | 0.12 | N |
| methanol | 262,086 | 6,240 | 0.23 | 26.43 | N |
| acetone | 1,187,116 | 28,264 | 0.01 | 1.15 | N |
| MEK | 589,775 | 14,042 | 0.32 | 35.88 | N |
| naphthalene | 52,429 | 1,248 | 0.0001 | 0.008 | N |
| cumene | 245,787 | 5,852 | 0.000001 | 0.0001 | N |
| ethylbenzene | 4343,192 | 10,338 | 0.22 | 25.35 | N |
| MIBK | 204,826 | 4,877 | 0.18 | 20.91 | N |
| toluene | 188,405 | 4,486 | 0.57 | 65.11 | N |
| hexane | 1,762,372 | 41,961 | 0.000001 | 0.0001 | N |
| xylene | 434,192 | 10,338 | 1.03 | 116.63 | N |

7. 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 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.).



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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(s).

8. 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 satisfied 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 quarterly summaries of the following records:

   a. A log of operating time for the capture (collection) system, control device, monitoring equipment, and the associated emission unit.

   b. All 3-hour blocks of time during which the average combustion temperature within the thermal incinerator does not comply with the temperature limitation specified above.

   c. All periods of time during which the permanent total enclosure was not maintained at the required differential pressure specified above.

   d. A list of all days when the daily VOC emission rate from RTO #1 exceeded 151.8 pounds.

   e. A list of any days when noncomplying coatings were used.

   f. A list of all months when the amount of coatings (including stains, toners, glazes, topcoats and sealers) exceeded 43,196 gallons, and the amount of solvent and support materials exceeded 15,300 gallons.

2. The permittee shall also submit a quarterly deviation report when the total controlled emissions of VOC, individual HAPs, and the total aggregate HAPs from RTO #1 exceed the limits listed in A.2.d and A.2.e respectively.



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## E. Testing Requirements

1. The permittee shall conduct, or have conducted, emission testing for this emission unit in accordance with the following requirements:

   a. The emission testing shall be conducted within 3 months after issuance of this permit.

   b. The emission testing shall be conducted to demonstrate compliance with the VOC capture efficiency and control efficiency requirement specified in Section A.2.a. Emission testing shall also be conducted to establish the average combustion temperature within the thermal incinerator, as specified in Section B.1, and to establish the minimum pressure differential within the permanent total enclosure, as specified in Section B.2.

   c. The test(s) shall be conducted while the emissions units are operating at or near their maximum capacity, unless otherwise specified or approved by the Ohio EPA Northeast District Office.

   d. The capture efficiency shall be determined using Methods 204 through 204F, as specified in 40 CFR part 51, Appendix M, or the permittee may request to use an alternative method or procedure for the determination of capture efficiency in accordance with the U.S. EPA's "Guideline for Determining Capture Efficiency," dated January 9, 1995. (The Ohio EPA will consider the request, including an evaluation of the applicability, necessity, and validity of the alternative, and may approve the use of the alternative if such approval does not contravene any other applicable requirement.)

   e. The control efficiency (i.e., the percent reduction in mass emissions between the inlet and outlet of the control system) shall be determined in accordance with the test methods and procedures specified in OAC rule 3745-21-10 or an approved alternative test protocol. The test methods and procedures selected shall be based on a consideration of the diversity of the organic species present and their total concentration, and on a consideration of the potential presence of interfering gases.

   f. U.S. EPA Method 24 shall be used, in accordance with OAC rule 3745-21-04(B)(5), to determine the VOC contents for all coatings, solvent and support materials, and cleanup materials used during the performance test(s). If, pursuant to section 4.3 of Method 24, 40 CFR part 60, Appendix A, an owner or operator determines that Method 24 cannot be used for a particular coating, solvent and support material, or cleanup material, the permittee shall so notify the Administrator of the U.S. EPA and shall use formulation data for that coating, solvent and support material, or cleanup material to demonstrate compliance until the U.S. EPA provides alternative analytical procedures or alternative precision statements for Method 24.

   g. Not later than 30 days prior to the proposed test date(s), the permittee shall submit an "Intent to Test" notification to the Ohio EPA Northeast District Office. The "Intent to Test" notification shall describe in detail the proposed test methods and procedures, the



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emissions unit operating parameters, the time(s) and date(s) of the test(s), and the person(s) who will be conducting the test(s). Failure to submit such notification for review and approval prior to the test(s) may result in the Ohio EPA Northeast District Office's refusal to accept the results of the emission test(s).

Personnel from the Ohio EPA Northeast District Office shall be permitted to witness the test(s), examine the testing equipment, and acquire data and information necessary to ensure that the operation of the emissions unit and the testing procedures provide a valid characterization of the emissions from the emissions unit and/or the performance of the control equipment.

h. A comprehensive written report on the results of the emissions test(s) shall be signed by the person or persons responsible for the tests and submitted to the Ohio EPA Northeast District Office within 30 days following completion of the test(s).

2. Emission Limitation:
151.8 lbs VOC /day and 27.7 tons VOC per rolling 12 month period from RTO #1

Applicable Compliance Method:
Compliance shall be based upon the recordkeeping specified in Section C.4 and C.5.

3. Emission Limitation:
792 lbs/month and 4.75 tons per rolling 12 month period of an individual HAP from RTO #1

Applicable Compliance Method:
Compliance shall be based upon the recordkeeping specified in Section C.5.

4. Emission Limitation:
2,067 lbs/month and 12.4 tons per rolling 12 month period of all HAPs from RTO #1

Applicable Compliance Method:
Compliance shall be based upon the recordkeeping specified in Section C.5.

5. Compliance with the VOC content restrictions of each coating, solvent and support material, and cleanup material shall be based upon the use of U.S. EPA Method 24.

6. Emission Limitation:
0.7 lb NOx/hr and 3.2 tons NOx/year from the combustion of natural gas in the thermal oxidizer.

Applicable Compliance Method:
The following equation shall be used to determine the hourly emission rate.

$$E = EF \times R \times 1/H$$

where:



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E = Emission rate, in lbs/hr

EF = Emission factor (AP-42, Section 1.4) for NOx is 100 lbs/mmcf.

R = Maximum rating of the thermal oxidizer reported to be 7.5 mmBtu/hr.

H = Heating value of the natural gas, in Btu/cf. 1,020 Btu/cf was used in the emission calculation for this permit.

The yearly rate, in tons/year, shall be determined by multiplying the hourly rate (lbs/hr) as calculated above, by (# hrs of operation/year) and (ton/2,000 lbs).

**7.** Emission Limitation:
0.6 lb CO/hr and 2.7 tons CO/year from the combustion of natural gas in the thermal oxidizer.

Applicable Compliance Method:
The following equation shall be used to determine the hourly emission rate.

E = EF x R x 1/H

where:

E = Emission rate, in lbs/hr

EF = Emission factor (AP-42, Section 1.4) for CO is 84 lbs/mmcf.

R = Maximum rating of the thermal oxidizer reported to be 7.5 mmBtu/hr.

H = Heating value of the natural gas, in Btu/cf. 1,020 Btu/cf was used in the emission calculation for this permit.

The yearly rate (tons/year) shall be determined by multiplying the hourly rate (lbs/hr), as calculated above, by (# hrs of operation/year) and (ton/2,000 lbs).

## F. Miscellaneous Requirements

1. In accordance with the provisions of OAC rule 3745-35-07, the following terms and conditions of this permit to install are federally enforceable: A-F, except C.6, C.7 and C.8.

2. The terms and condition of this permit supercede those contained with PTI # 02-12833. The exemption would be that the terms and conditions for F003 (Sawdust Storage Bin #1 Load-out) and F004 (Sawdust Storage Bin #2 Load-out) contained in PTI #02-12833 are still applicable.



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## 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 |
|---|---|---|
| K009 - Spray booth 3 of overhead conveyor line 3, controlled by regenerative thermal oxidizer No. 1 | OAC rule 3745-31-05(A)(3) | Volatile Organic Compound (VOC) emissions shall not exceed 151.8 pounds per day.<br><br>Hazardous Air Pollutant (HAP) emissions shall not exceed 792 pounds per month for an individual HAP and 2,067 pounds per month for combined HAPs.<br><br>Nitrogen Oxide (NOx) emissions from the combustion of natural gas from the thermal oxidizer shall not exceed 0.7 pound per hour, 3.2 tons per year.<br><br>Carbon Monoxide (CO) emissions from the combustion of natural gas from the thermal oxidizer shall not exceed 0.6 pound per hour, 2.7 tons per year.<br><br>The requirements of this rule also include compliance with the requirements of OAC rule 3745-35-02(D) |
| | OAC rule 3745-35-07(B) | See Section A.2.a through A.2.c. |
| | OAC rule 3745-21-07(G)(2) | See Section A.2.d and A.2.e. |



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| | |
|---|---|
| | The requirements of this rule are less stringent than the requirements established pursuant to OAC rule 3745-31-05(A)(3). |

**2. Additional Terms and Conditions**

**2.a** The permittee shall design enclosure #1 that will house K007, K008, K009, K010, K011, K012, K013, K014, K015, K016 and K017 in such a manner as to function as a permanent total enclosure (PTE) as defined by U.S. EPA Method 204. The use of the PTE, as defined in Reference Method 204, provides for 100% capture efficiency.

**2.b** The permittee shall install and maintain an incineration system to control the VOC emissions from the permanent total enclosure, PTE #1. The incinerator system shall have a VOC destruction efficiency of at least 99% by weight.

**2.c** The volatile organic compound (VOC) content of the Coatings (including stains, toners, glazes, topcoats and sealers) and Solvents & Support Materials used by the permittee at this facility shall not exceed the following VOC content, minus water:

| | |
|---|---|
| Coatings | 7.5 lbs VOC/gallon |
| Solvents & Support Materials | 9.0 lbs VOC/gallon |

**2.d** Emissions from the Regenerative Thermal Oxidizer (RTO) #1 shall be restricted in such a manner to limit emissions from emissions units K007, K008, K009, K010, K011, K012, K013, K014, K015, K016 and K017 to the following:

i. 27.7 tons VOC per rolling 12 month period
ii. 4.75 tons per rolling 12 month period of any individual HAP
iii. 12.4 tons per rolling 12 month period of total aggregate HAPs

**2.e** Emissions from the entire facility shall not exceed the following limits:

i. 55.4 tons VOC per rolling 12 month period
ii. 9.5 tons per rolling 12 month period of any individual HAP
iii. 24.8 tons per rolling 12 month period of total aggregate HAPs

**B. Operational Restrictions**

1. The average combustion temperature within RTO #1, for any 3-hour block of time when an associated emissions unit is in operation, shall not be more than 50 degrees Fahrenheit below the average temperature during the most recent emission test that demonstrated the RTO system was in compliance with the destruction efficiency requirement.



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2. The permanent total enclosure shall be maintained under negative pressure, at a minimum pressure differential that is not less than the minimum pressure differential (inches of water) established during the most recent emission test that demonstrated the emissions unit was in compliance or 0.007 inches of water as established in Method 204, whenever the emissions unit is in operation.

3. The permittee shall limit the total coating and solvent usage for PTE #1 (K007, K008, K009, K010, K011, K012, K013, K014, K015, K016 and K017) as follows:

| | |
|---|---|
| Coatings (including stains, toners, glazes, topcoats and sealers) | 43,196 gallons/month |
| Solvents & Support Materials | 15,300 gallons/month |

## C. Monitoring and/or Recordkeeping Requirements

1. The permittee shall install, maintain and operate monitoring devices and a recorder which simultaneously measure and record the pressure inside and outside the permanent total enclosure.

   The monitoring and recording devices 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 following information on a daily basis:

   a. The difference in pressure between the permanent total enclosure and the surrounding area(s).

   b. A log or record of operating time for the capture (collection) system, control device, monitoring equipment, and the associated emissions unit.

2. The permittee shall operate and maintain a continuous temperature monitor and recorder which measures and records the combustion temperature within the thermal incinerator when the emissions unit is in operation. Units shall be in degrees Fahrenheit. The monitoring and recording devices shall be capable of accurately measuring the desired parameter. The temperature monitor and recorder shall be installed, calibrated, operated and maintained in accordance with the manufacturer's recommendations, with any modifications deemed necessary by the permittee.

3. The permittee shall collect and record the following information for each day for RTO #1:

   a. A log of operating time for the capture (collection) system, control device, monitoring equipment, and the associated emissions units.

   b. All 3-hour blocks of time during which the average combustion temperature within the thermal incinerator, when any of the associated emissions unit was in operation, was more than 50 degrees Fahrenheit below the average temperature during the most recent


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emission test that demonstrated the incinerator system was in compliance with the destruction efficiency requirement.

4. The permittee shall collect and record the following information each day for emissions units K007, K008, K009, K010, K011, K012, K013, K014, K015, K016 and K017.

   a. The name and identification number of each coating, solvent and support material, and cleanup material, as applied.

   b. The VOC content of each coating, solvent and support material, and cleanup material, as applied, in pounds per gallon and in pounds per gallon excluding water and exempt solvents.

   c. The number of gallons of each coating, solvent and support material, and cleanup material employed.

   d. The content of each individual HAP (i.e. xylene, toluene, and any other HAP) in each coating, solvent and support material and cleanup material employed, in pounds per gallon.

   e. The total uncontrolled VOC emission rate for all coatings, solvent and support materials, and cleanup materials employed, in pounds per day. This calculation is the summation of the product of (4.b or VOC content in pounds per gallon) times (4.c or number of gallons per day) for each coating, solvent, support material and cleanup material employed.

   f. The total uncontrolled emission rate for each individual HAP from all coatings, solvent and support materials and cleanup materials employed, in pounds per day. This calculation is the summation of the product of (4.d or individual HAP content in pounds per gallon) times (4.c or number of gallons per day) for each coating, solvent, support material and cleanup material employed.

   g. The total uncontrolled emission rate of all HAPs collectively from all coatings, solvent and support materials and cleanup materials employed, in pounds per day. This calculation is summation of each individual HAP emission rate, as determined above in 4.f.

   h. The calculated, controlled VOC emission rate for all coatings, solvent and support materials and cleanup materials, in pounds per day. The controlled, daily VOC emission rate shall be calculated using the overall control efficiency for the control equipment as determined during the most recent emission test that demonstrated that the emissions unit was in compliance. The controlled VOC emission rate is the uncontrolled VOC emission rate multiplied by (1 minus the overall control efficiency, in percentage).

   i. The calculated, controlled emission rate for each individual HAP from all coatings, solvent and support materials and cleanup materials, in pounds per day. The controlled



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emission rate shall be calculated using the overall control efficiency for the control equipment as determined during the most recent emission test that demonstrated that the emissions unit was in compliance. The controlled emission rate for each individual HAP is the uncontrolled emission rate multiplied by (1 minus the overall control efficiency, in percentage).

j. The total controlled emission rate of all HAPs collectively from all coatings, solvent and support materials and cleanup materials employed, in pounds per day. This calculation is summation of each individual HAP controlled emission rate, as determined above in 4.i.

5. The permittee shall collect and record the following information each month for emissions units K007, K008, K009, K010, K011, K012, K013, K014, K015, K016 and K017.

a. The controlled emission rate for each individual HAP from all coatings, solvent and support materials and cleanup materials, in pounds per rolling 12 month period. This calculation is the summation of each daily emission rate, as recorded per Section C.4.i, for the past twelve months and then multiplied by ton/2,000 lbs.

b. The controlled emission rate for all HAPs collectively from all coatings, solvent and support materials and cleanup materials, in pounds per rolling 12 month period. This calculation is the summation of each daily emission rate, as recorded per Section C.4.j, for the past twelve months and then multiplied by ton/2,000 lbs.

c. The controlled VOC emission rate for all coatings, solvent and support materials and cleanup materials, in tons per rolling 12 month period. This calculation is the summation of each daily emission rate, as recorded per Section C.4.h, for the past twelve months and then multiplied by ton/2,000 lbs.

d. The coating usage rate as described in Section B.3 in gallons per month.

e. The solvent usage rate as described in Section B.3 in gallons per month.

6. The permit to install for this emissions unit 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 for each pollutant emitted by this emissions unit using data from the permit to install application and the SCREEN 3.0 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 table summarizes the results of the modeling from RTO #1:

| Compound | TLV ($ug.m^3$) | MAGLC = TLV/42 ($ug.m^3$) | Emission rate (g/s) | Predicted 1-hr max ground level conc. ($ug.m^3$) | MAGLC exceeded (Y/N) |
|---|---|---|---|---|---|


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| | | | | | |
|---|---|---|---|---|---|
| formaldehyde | 271 | 6 | 0.0011 | 0.12 | N |
| methanol | 262,086 | 6,240 | 0.23 | 26.43 | N |
| acetone | 1,187,116 | 28,264 | 0.01 | 1.15 | N |
| MEK | 589,775 | 14,042 | 0.32 | 35.88 | N |
| naphthalene | 52,429 | 1,248 | 0.0001 | 0.008 | N |
| cumene | 245,787 | 5,852 | 0.000001 | 0.0001 | N |
| ethylbenzene | 4343,192 | 10,338 | 0.22 | 25.35 | N |
| MIBK | 204,826 | 4,877 | 0.18 | 20.91 | N |
| toluene | 188,405 | 4,486 | 0.57 | 65.11 | N |
| hexane | 1,762,372 | 41,961 | 0.000001 | 0.0001 | N |
| xylene | 434,192 | 10,338 | 1.03 | 116.63 | N |

7. 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 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.).

   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



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(other than (VV)(1)(a)(ii)), then the permittee shall obtain a final permit to install prior to the change(s).

8. 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 satisfied 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 quarterly summaries of the following records:

   a. A log of operating time for the capture (collection) system, control device, monitoring equipment, and the associated emission unit.

   b. All 3-hour blocks of time during which the average combustion temperature within the thermal incinerator does not comply with the temperature limitation specified above.

   c. All periods of time during which the permanent total enclosure was not maintained at the required differential pressure specified above.

   d. A list of all days when the daily VOC emission rate from RTO #1 exceeded 151.8 pounds.

   e. A list of any days when noncomplying coatings were used.

   f. A list of all months when the amount of coatings (including stains, toners, glazes, topcoats and sealers) exceeded 43,196 gallons, and the amount of solvent and support materials exceeded 15,300 gallons.

2. The permittee shall also submit a quarterly deviation report when the total controlled emissions of VOC, individual HAPs, and the total aggregate HAPs from RTO #1 exceed the limits listed in A.2.d and A.2.e respectively.

## E. Testing Requirements

1. The permittee shall conduct, or have conducted, emission testing for this emission unit in accordance with the following requirements:



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a. The emission testing shall be conducted within 3 months after issuance of this permit.

b. The emission testing shall be conducted to demonstrate compliance with the VOC capture efficiency and control efficiency requirement specified in Section A.2.a. Emission testing shall also be conducted to establish the average combustion temperature within the thermal incinerator, as specified in Section B.1, and to establish the minimum pressure differential within the permanent total enclosure, as specified in Section B.2.

c. The test(s) shall be conducted while the emissions units are operating at or near their maximum capacity, unless otherwise specified or approved by the Ohio EPA Northeast District Office.

d. The capture efficiency shall be determined using Methods 204 through 204F, as specified in 40 CFR part 51, Appendix M, or the permittee may request to use an alternative method or procedure for the determination of capture efficiency in accordance with the U.S. EPA's "Guideline for Determining Capture Efficiency," dated January 9, 1995. (The Ohio EPA will consider the request, including an evaluation of the applicability, necessity, and validity of the alternative, and may approve the use of the alternative if such approval does not contravene any other applicable requirement.)

e. The control efficiency (i.e., the percent reduction in mass emissions between the inlet and outlet of the control system) shall be determined in accordance with the test methods and procedures specified in OAC rule 3745-21-10 or an approved alternative test protocol. The test methods and procedures selected shall be based on a consideration of the diversity of the organic species present and their total concentration, and on a consideration of the potential presence of interfering gases.

f. U.S. EPA Method 24 shall be used, in accordance with OAC rule 3745-21-04(B)(5), to determine the VOC contents for all coatings, solvent and support materials, and cleanup materials used during the performance test(s). If, pursuant to section 4.3 of Method 24, 40 CFR part 60, Appendix A, an owner or operator determines that Method 24 cannot be used for a particular coating, solvent and support material, or cleanup material, the permittee shall so notify the Administrator of the U.S. EPA and shall use formulation data for that coating, solvent and support material, or cleanup material to demonstrate compliance until the U.S. EPA provides alternative analytical procedures or alternative precision statements for Method 24.

g. Not later than 30 days prior to the proposed test date(s), the permittee shall submit an "Intent to Test" notification to the Ohio EPA Northeast District Office. The "Intent to Test" notification shall describe in detail the proposed test methods and procedures, the emissions unit operating parameters, the time(s) and date(s) of the test(s), and the person(s) who will be conducting the test(s). Failure to submit such notification for review and approval prior to the test(s) may result in the Ohio EPA Northeast District Office's refusal to accept the results of the emission test(s).



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Personnel from the Ohio EPA Northeast District Office shall be permitted to witness the test(s), examine the testing equipment, and acquire data and information necessary to ensure that the operation of the emissions unit and the testing procedures provide a valid characterization of the emissions from the emissions unit and/or the performance of the control equipment.

h. A comprehensive written report on the results of the emissions test(s) shall be signed by the person or persons responsible for the tests and submitted to the Ohio EPA Northeast District Office within 30 days following completion of the test(s).

2. Emission Limitation:
151.8 lbs VOC /day and 27.7 tons VOC per rolling 12 month period from RTO #1

Applicable Compliance Method:
Compliance shall be based upon the recordkeeping specified in Section C.4 and C.5.

3. Emission Limitation:
792 lbs/month and 4.75 tons per rolling 12 month period of an individual HAP from RTO #1

Applicable Compliance Method:
Compliance shall be based upon the recordkeeping specified in Section C.5.

4. Emission Limitation:
2,067 lbs/month and 12.4 tons per rolling 12 month period of all HAPs from RTO #1

Applicable Compliance Method:
Compliance shall be based upon the recordkeeping specified in Section C.5.

5. Compliance with the VOC content restrictions of each coating, solvent and support material, and cleanup material shall be based upon the use of U.S. EPA Method 24.

6. Emission Limitation:
0.7 lb NOx/hr and 3.2 tons NOx/year from the combustion of natural gas in the thermal oxidizer.

Applicable Compliance Method:
The following equation shall be used to determine the hourly emission rate.

$$E = EF \times R \times 1/H$$

where:

E = Emission rate, in lbs/hr

EF = Emission factor (AP-42, Section 1.4) for NOx is 100 lbs/mmcf.



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R = Maximum rating of the thermal oxidizer reported to be 7.5 mmBtu/hr.

H = Heating value of the natural gas, in Btu/cf. 1,020 Btu/cf was used in the emission calculation for this permit.

The yearly rate, in tons/year, shall be determined by multiplying the hourly rate (lbs/hr) as calculated above, by (# hrs of operation/year) and (ton/2,000 lbs).

**7.** Emission Limitation:
0.6 lb CO/hr and 2.7 tons CO/year from the combustion of natural gas in the thermal oxidizer.

Applicable Compliance Method:
The following equation shall be used to determine the hourly emission rate.

E = EF x R x 1/H

where:

E = Emission rate, in lbs/hr

EF = Emission factor (AP-42, Section 1.4) for CO is 84 lbs/mmcf.

R = Maximum rating of the thermal oxidizer reported to be 7.5 mmBtu/hr.

H = Heating value of the natural gas, in Btu/cf. 1,020 Btu/cf was used in the emission calculation for this permit.

The yearly rate (tons/year) shall be determined by multiplying the hourly rate (lbs/hr), as calculated above, by (# hrs of operation/year) and (ton/2,000 lbs).

## F. Miscellaneous Requirements

1. In accordance with the provisions of OAC rule 3745-35-07, the following terms and conditions of this permit to install are federally enforceable: A-F, except C.6, C.7 and C.8.

2. The terms and condition of this permit supercede those contained with PTI # 02-12833. The exemption would be that the terms and conditions for F003 (Sawdust Storage Bin #1 Load-out) and F004 (Sawdust Storage Bin #2 Load-out) contained in PTI #02-12833 are still applicable.



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## 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 |
|---|---|---|
| K010 - Spray booth 4 of overhead conveyor line 3, controlled by regenerative thermal oxidizer No. 1 | OAC rule 3745-31-05(A)(3) | Volatile Organic Compound (VOC) emissions shall not exceed 151.8 pounds per day.<br><br>Hazardous Air Pollutant (HAP) emissions shall not exceed 792 pounds per month for an individual HAP and 2,067 pounds per month for combined HAPs.<br><br>Nitrogen Oxide (NOx) emissions from the combustion of natural gas from the thermal oxidizer shall not exceed 0.7 pound per hour, 3.2 tons per year.<br><br>Carbon Monoxide (CO) emissions from the combustion of natural gas from the thermal oxidizer shall not exceed 0.6 pound per hour, 2.7 tons per year.<br><br>The requirements of this rule also include compliance with the requirements of OAC rule 3745-35-02(D) |
| | OAC rule 3745-35-07(B) | See Section A.2.a through A.2.c. |
| | OAC rule 3745-21-07(G)(2) | See Section A.2.d and A.2.e. |



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| | |
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| | The requirements of this rule are less stringent than the requirements established pursuant to OAC rule 3745-31-05(A)(3). |

**2. Additional Terms and Conditions**

**2.a** The permittee shall design enclosure #1 that will house K007, K008, K009, K010, K011, K012, K013, K014, K015, K016 and K017 in such a manner as to function as a permanent total enclosure (PTE) as defined by U.S. EPA Method 204. The use of the PTE, as defined in Reference Method 204, provides for 100% capture efficiency.

**2.b** The permittee shall install and maintain an incineration system to control the VOC emissions from the permanent total enclosure, PTE #1. The incinerator system shall have a VOC destruction efficiency of at least 99% by weight.

**2.c** The volatile organic compound (VOC) content of the Coatings (including stains, toners, glazes, topcoats and sealers) and Solvents & Support Materials used by the permittee at this facility shall not exceed the following VOC content, minus water:

| | |
|---|---|
| Coatings | 7.5 lbs VOC/gallon |
| Solvents & Support Materials | 9.0 lbs VOC/gallon |

**2.d** Emissions from the Regenerative Thermal Oxidizer (RTO) #1 shall be restricted in such a manner to limit emissions from emissions units K007, K008, K009, K010, K011, K012, K013, K014, K015, K016 and K017 to the following:

i. 27.7 tons VOC per rolling 12 month period
ii. 4.75 tons per rolling 12 month period of any individual HAP
iii. 12.4 tons per rolling 12 month period of total aggregate HAPs

**2.e** Emissions from the entire facility shall not exceed the following limits:

i. 55.4 tons VOC per rolling 12 month period
ii. 9.5 tons per rolling 12 month period of any individual HAP
iii. 24.8 tons per rolling 12 month period of total aggregate HAPs

**B. Operational Restrictions**

1. The average combustion temperature within RTO #1, for any 3-hour block of time when an associated emissions unit is in operation, shall not be more than 50 degrees Fahrenheit below the average temperature during the most recent emission test that demonstrated the RTO system was in compliance with the destruction efficiency requirement.



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2. The permanent total enclosure shall be maintained under negative pressure, at a minimum pressure differential that is not less than the minimum pressure differential (inches of water) established during the most recent emission test that demonstrated the emissions unit was in compliance or 0.007 inches of water as established in Method 204, whenever the emissions unit is in operation.

3. The permittee shall limit the total coating and solvent usage for PTE #1 (K007, K008, K009, K010, K011, K012, K013, K014, K015, K016 and K017) as follows:

| | |
|---|---|
| Coatings (including stains, toners, glazes, topcoats and sealers) | 43,196 gallons/month |
| Solvents & Support Materials | 15,300 gallons/month |

## C. Monitoring and/or Recordkeeping Requirements

1. The permittee shall install, maintain and operate monitoring devices and a recorder which simultaneously measure and record the pressure inside and outside the permanent total enclosure.

   The monitoring and recording devices 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 following information on a daily basis:

   a. The difference in pressure between the permanent total enclosure and the surrounding area(s).

   b. A log or record of operating time for the capture (collection) system, control device, monitoring equipment, and the associated emissions unit.

2. The permittee shall operate and maintain a continuous temperature monitor and recorder which measures and records the combustion temperature within the thermal incinerator when the emissions unit is in operation. Units shall be in degrees Fahrenheit. The monitoring and recording devices shall be capable of accurately measuring the desired parameter. The temperature monitor and recorder shall be installed, calibrated, operated and maintained in accordance with the manufacturer's recommendations, with any modifications deemed necessary by the permittee.

3. The permittee shall collect and record the following information for each day for RTO #1:

   a. A log of operating time for the capture (collection) system, control device, monitoring equipment, and the associated emissions units.

   b. All 3-hour blocks of time during which the average combustion temperature within the thermal incinerator, when any of the associated emissions unit was in operation, was more than 50 degrees Fahrenheit below the average temperature during the most recent


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emission test that demonstrated the incinerator system was in compliance with the destruction efficiency requirement.

4. The permittee shall collect and record the following information each day for emissions units K007, K008, K009, K010, K011, K012, K013, K014, K015, K016 and K017.

   a. The name and identification number of each coating, solvent and support material, and cleanup material, as applied.

   b. The VOC content of each coating, solvent and support material, and cleanup material, as applied, in pounds per gallon and in pounds per gallon excluding water and exempt solvents.

   c. The number of gallons of each coating, solvent and support material, and cleanup material employed.

   d. The content of each individual HAP (i.e. xylene, toluene, and any other HAP) in each coating, solvent and support material and cleanup material employed, in pounds per gallon.

   e. The total uncontrolled VOC emission rate for all coatings, solvent and support materials, and cleanup materials employed, in pounds per day. This calculation is the summation of the product of (4.b or VOC content in pounds per gallon) times (4.c or number of gallons per day) for each coating, solvent, support material and cleanup material employed.

   f. The total uncontrolled emission rate for each individual HAP from all coatings, solvent and support materials and cleanup materials employed, in pounds per day. This calculation is the summation of the product of (4.d or individual HAP content in pounds per gallon) times (4.c or number of gallons per day) for each coating, solvent, support material and cleanup material employed.

   g. The total uncontrolled emission rate of all HAPs collectively from all coatings, solvent and support materials and cleanup materials employed, in pounds per day. This calculation is summation of each individual HAP emission rate, as determined above in 4.f.

   h. The calculated, controlled VOC emission rate for all coatings, solvent and support materials and cleanup materials, in pounds per day. The controlled, daily VOC emission rate shall be calculated using the overall control efficiency for the control equipment as determined during the most recent emission test that demonstrated that the emissions unit was in compliance. The controlled VOC emission rate is the uncontrolled VOC emission rate multiplied by (1 minus the overall control efficiency, in percentage).

   i. The calculated, controlled emission rate for each individual HAP from all coatings, solvent and support materials and cleanup materials, in pounds per day. The controlled



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emission rate shall be calculated using the overall control efficiency for the control equipment as determined during the most recent emission test that demonstrated that the emissions unit was in compliance. The controlled emission rate for each individual HAP is the uncontrolled emission rate multiplied by (1 minus the overall control efficiency, in percentage).

j. The total controlled emission rate of all HAPs collectively from all coatings, solvent and support materials and cleanup materials employed, in pounds per day. This calculation is summation of each individual HAP controlled emission rate, as determined above in 4.i.

5. The permittee shall collect and record the following information each month for emissions units K007, K008, K009, K010, K011, K012, K013, K014, K015, K016 and K017.

a. The controlled emission rate for each individual HAP from all coatings, solvent and support materials and cleanup materials, in pounds per rolling 12 month period. This calculation is the summation of each daily emission rate, as recorded per Section C.4.i, for the past twelve months and then multiplied by ton/2,000 lbs.

b. The controlled emission rate for all HAPs collectively from all coatings, solvent and support materials and cleanup materials, in pounds per rolling 12 month period. This calculation is the summation of each daily emission rate, as recorded per Section C.4.j, for the past twelve months and then multiplied by ton/2,000 lbs.

c. The controlled VOC emission rate for all coatings, solvent and support materials and cleanup materials, in tons per rolling 12 month period. This calculation is the summation of each daily emission rate, as recorded per Section C.4.h, for the past twelve months and then multiplied by ton/2,000 lbs.

d. The coating usage rate as described in Section B.3 in gallons per month.

e. The solvent usage rate as described in Section B.3 in gallons per month.

6. The permit to install for this emissions unit 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 for each pollutant emitted by this emissions unit using data from the permit to install application and the SCREEN 3.0 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 table summarizes the results of the modeling from RTO #1:

| Compound | TLV ($ug.m^3$) | MAGLC = TLV/42 ($ug.m^3$) | Emission rate (g/s) | Predicted 1-hr max ground level conc. ($ug.m^3$) | MAGLC exceeded (Y/N) |
|---|---|---|---|---|---|



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| | | | | | |
|---|---|---|---|---|---|
| formaldehyde | 271 | 6 | 0.0011 | 0.12 | N |
| methanol | 262,086 | 6,240 | 0.23 | 26.43 | N |
| acetone | 1,187,116 | 28,264 | 0.01 | 1.15 | N |
| MEK | 589,775 | 14,042 | 0.32 | 35.88 | N |
| naphthalene | 52,429 | 1,248 | 0.0001 | 0.008 | N |
| cumene | 245,787 | 5,852 | 0.000001 | 0.0001 | N |
| ethylbenzene | 4343,192 | 10,338 | 0.22 | 25.35 | N |
| MIBK | 204,826 | 4,877 | 0.18 | 20.91 | N |
| toluene | 188,405 | 4,486 | 0.57 | 65.11 | N |
| hexane | 1,762,372 | 41,961 | 0.000001 | 0.0001 | N |
| xylene | 434,192 | 10,338 | 1.03 | 116.63 | N |

7. 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 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.).

   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



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(other than (VV)(1)(a)(ii)), then the permittee shall obtain a final permit to install prior to the change(s).

8. 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 satisfied 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 quarterly summaries of the following records:

   a. A log of operating time for the capture (collection) system, control device, monitoring equipment, and the associated emission unit.

   b. All 3-hour blocks of time during which the average combustion temperature within the thermal incinerator does not comply with the temperature limitation specified above.

   c. All periods of time during which the permanent total enclosure was not maintained at the required differential pressure specified above.

   d. A list of all days when the daily VOC emission rate from RTO #1 exceeded 151.8 pounds.

   e. A list of any days when noncomplying coatings were used.

   f. A list of all months when the amount of coatings (including stains, toners, glazes, topcoats and sealers) exceeded 43,196 gallons, and the amount of solvent and support materials exceeded 15,300 gallons.

2. The permittee shall also submit a quarterly deviation report when the total controlled emissions of VOC, individual HAPs, and the total aggregate HAPs from RTO #1 exceed the limits listed in A.2.d and A.2.e respectively.

## E. Testing Requirements

1. The permittee shall conduct, or have conducted, emission testing for this emission unit in accordance with the following requirements:



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a. The emission testing shall be conducted within 3 months after issuance of this permit.

b. The emission testing shall be conducted to demonstrate compliance with the VOC capture efficiency and control efficiency requirement specified in Section A.2.a. Emission testing shall also be conducted to establish the average combustion temperature within the thermal incinerator, as specified in Section B.1, and to establish the minimum pressure differential within the permanent total enclosure, as specified in Section B.2.

c. The test(s) shall be conducted while the emissions units are operating at or near their maximum capacity, unless otherwise specified or approved by the Ohio EPA Northeast District Office.

d. The capture efficiency shall be determined using Methods 204 through 204F, as specified in 40 CFR part 51, Appendix M, or the permittee may request to use an alternative method or procedure for the determination of capture efficiency in accordance with the U.S. EPA's "Guideline for Determining Capture Efficiency," dated January 9, 1995. (The Ohio EPA will consider the request, including an evaluation of the applicability, necessity, and validity of the alternative, and may approve the use of the alternative if such approval does not contravene any other applicable requirement.)

e. The control efficiency (i.e., the percent reduction in mass emissions between the inlet and outlet of the control system) shall be determined in accordance with the test methods and procedures specified in OAC rule 3745-21-10 or an approved alternative test protocol. The test methods and procedures selected shall be based on a consideration of the diversity of the organic species present and their total concentration, and on a consideration of the potential presence of interfering gases.

f. U.S. EPA Method 24 shall be used, in accordance with OAC rule 3745-21-04(B)(5), to determine the VOC contents for all coatings, solvent and support materials, and cleanup materials used during the performance test(s). If, pursuant to section 4.3 of Method 24, 40 CFR part 60, Appendix A, an owner or operator determines that Method 24 cannot be used for a particular coating, solvent and support material, or cleanup material, the permittee shall so notify the Administrator of the U.S. EPA and shall use formulation data for that coating, solvent and support material, or cleanup material to demonstrate compliance until the U.S. EPA provides alternative analytical procedures or alternative precision statements for Method 24.

g. Not later than 30 days prior to the proposed test date(s), the permittee shall submit an "Intent to Test" notification to the Ohio EPA Northeast District Office. The "Intent to Test" notification shall describe in detail the proposed test methods and procedures, the emissions unit operating parameters, the time(s) and date(s) of the test(s), and the person(s) who will be conducting the test(s). Failure to submit such notification for review and approval prior to the test(s) may result in the Ohio EPA Northeast District Office's refusal to accept the results of the emission test(s).



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Personnel from the Ohio EPA Northeast District Office shall be permitted to witness the test(s), examine the testing equipment, and acquire data and information necessary to ensure that the operation of the emissions unit and the testing procedures provide a valid characterization of the emissions from the emissions unit and/or the performance of the control equipment.

h. A comprehensive written report on the results of the emissions test(s) shall be signed by the person or persons responsible for the tests and submitted to the Ohio EPA Northeast District Office within 30 days following completion of the test(s).

2. Emission Limitation:
151.8 lbs VOC /day and 27.7 tons VOC per rolling 12 month period from RTO #1

Applicable Compliance Method:
Compliance shall be based upon the recordkeeping specified in Section C.4 and C.5.

3. Emission Limitation:
792 lbs/month and 4.75 tons per rolling 12 month period of an individual HAP from RTO #1

Applicable Compliance Method:
Compliance shall be based upon the recordkeeping specified in Section C.5.

4. Emission Limitation:
2,067 lbs/month and 12.4 tons per rolling 12 month period of all HAPs from RTO #1

Applicable Compliance Method:
Compliance shall be based upon the recordkeeping specified in Section C.5.

5. Compliance with the VOC content restrictions of each coating, solvent and support material, and cleanup material shall be based upon the use of U.S. EPA Method 24.

6. Emission Limitation:
0.7 lb NOx/hr and 3.2 tons NOx/year from the combustion of natural gas in the thermal oxidizer.

Applicable Compliance Method:
The following equation shall be used to determine the hourly emission rate.

$$E = EF \times R \times 1/H$$

where:

E = Emission rate, in lbs/hr

EF = Emission factor (AP-42, Section 1.4) for NOx is 100 lbs/mmcf.



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R = Maximum rating of the thermal oxidizer reported to be 7.5 mmBtu/hr.

H = Heating value of the natural gas, in Btu/cf. 1,020 Btu/cf was used in the emission calculation for this permit.

The yearly rate, in tons/year, shall be determined by multiplying the hourly rate (lbs/hr) as calculated above, by (# hrs of operation/year) and (ton/2,000 lbs).

**7.** Emission Limitation:
0.6 lb CO/hr and 2.7 tons CO/year from the combustion of natural gas in the thermal oxidizer.

Applicable Compliance Method:
The following equation shall be used to determine the hourly emission rate.

E = EF x R x 1/H

where:

E = Emission rate, in lbs/hr

EF = Emission factor (AP-42, Section 1.4) for CO is 84 lbs/mmcf.

R = Maximum rating of the thermal oxidizer reported to be 7.5 mmBtu/hr.

H = Heating value of the natural gas, in Btu/cf. 1,020 Btu/cf was used in the emission calculation for this permit.

The yearly rate (tons/year) shall be determined by multiplying the hourly rate (lbs/hr), as calculated above, by (# hrs of operation/year) and (ton/2,000 lbs).

## F. Miscellaneous Requirements

1. In accordance with the provisions of OAC rule 3745-35-07, the following terms and conditions of this permit to install are federally enforceable: A-F, except C.6, C.7 and C.8.

2. The terms and condition of this permit supercede those contained with PTI # 02-12833. The exemption would be that the terms and conditions for F003 (Sawdust Storage Bin #1 Load-out) and F004 (Sawdust Storage Bin #2 Load-out) contained in PTI #02-12833 are still applicable.



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## 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 |
|---|---|---|
| K011 - Spray booth 5 overhead conveyor line 3, controlled by regenerative thermal oxidizer No. 1 | OAC rule 3745-31-05(A)(3) | Volatile Organic Compound (VOC) emissions shall not exceed 151.8 pounds per day.<br><br>Hazardous Air Pollutant (HAP) emissions shall not exceed 792 pounds per month for an individual HAP and 2,067 pounds per month for combined HAPs.<br><br>Nitrogen Oxide (NOx) emissions from the combustion of natural gas from the thermal oxidizer shall not exceed 0.7 pound per hour, 3.2 tons per year.<br><br>Carbon Monoxide (CO) emissions from the combustion of natural gas from the thermal oxidizer shall not exceed 0.6 pound per hour, 2.7 tons per year.<br><br>The requirements of this rule also include compliance with the requirements of OAC rule 3745-35-02(D) |
| | OAC rule 3745-35-07(B) | See Section A.2.a through A.2.c. |
| | OAC rule 3745-21-07(G)(2) | See Section A.2.d and A.2.e. |



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| | |
|---|---|
| | The requirements of this rule are less stringent than the requirements established pursuant to OAC rule 3745-31-05(A)(3). |

**2. Additional Terms and Conditions**

**2.a** The permittee shall design enclosure #1 that will house K007, K008, K009, K010, K011, K012, K013, K014, K015, K016 and K017 in such a manner as to function as a permanent total enclosure (PTE) as defined by U.S. EPA Method 204. The use of the PTE, as defined in Reference Method 204, provides for 100% capture efficiency.

**2.b** The permittee shall install and maintain an incineration system to control the VOC emissions from the permanent total enclosure, PTE #1. The incinerator system shall have a VOC destruction efficiency of at least 99% by weight.

**2.c** The volatile organic compound (VOC) content of the Coatings (including stains, toners, glazes, topcoats and sealers) and Solvents & Support Materials used by the permittee at this facility shall not exceed the following VOC content, minus water:

| | |
|---|---|
| Coatings | 7.5 lbs VOC/gallon |
| Solvents & Support Materials | 9.0 lbs VOC/gallon |

**2.d** Emissions from the Regenerative Thermal Oxidizer (RTO) #1 shall be restricted in such a manner to limit emissions from emissions units K007, K008, K009, K010, K011, K012, K013, K014, K015, K016 and K017 to the following:

i. 27.7 tons VOC per rolling 12 month period
ii. 4.75 tons per rolling 12 month period of any individual HAP
iii. 12.4 tons per rolling 12 month period of total aggregate HAPs

**2.e** Emissions from the entire facility shall not exceed the following limits:

i. 55.4 tons VOC per rolling 12 month period
ii. 9.5 tons per rolling 12 month period of any individual HAP
iii. 24.8 tons per rolling 12 month period of total aggregate HAPs

**B. Operational Restrictions**

1. The average combustion temperature within RTO #1, for any 3-hour block of time when an associated emissions unit is in operation, shall not be more than 50 degrees Fahrenheit below the average temperature during the most recent emission test that demonstrated the RTO system was in compliance with the destruction efficiency requirement.



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2. The permanent total enclosure shall be maintained under negative pressure, at a minimum pressure differential that is not less than the minimum pressure differential (inches of water) established during the most recent emission test that demonstrated the emissions unit was in compliance or 0.007 inches of water as established in Method 204, whenever the emissions unit is in operation.

3. The permittee shall limit the total coating and solvent usage for PTE #1 (K007, K008, K009, K010, K011, K012, K013, K014, K015, K016 and K017) as follows:

| | |
|---|---|
| Coatings (including stains, toners, glazes, topcoats and sealers) | 43,196 gallons/month |
| Solvents & Support Materials | 15,300 gallons/month |

## C. Monitoring and/or Recordkeeping Requirements

1. The permittee shall install, maintain and operate monitoring devices and a recorder which simultaneously measure and record the pressure inside and outside the permanent total enclosure.

   The monitoring and recording devices 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 following information on a daily basis:

   a. The difference in pressure between the permanent total enclosure and the surrounding area(s).

   b. A log or record of operating time for the capture (collection) system, control device, monitoring equipment, and the associated emissions unit.

2. The permittee shall operate and maintain a continuous temperature monitor and recorder which measures and records the combustion temperature within the thermal incinerator when the emissions unit is in operation. Units shall be in degrees Fahrenheit. The monitoring and recording devices shall be capable of accurately measuring the desired parameter. The temperature monitor and recorder shall be installed, calibrated, operated and maintained in accordance with the manufacturer's recommendations, with any modifications deemed necessary by the permittee.

3. The permittee shall collect and record the following information for each day for RTO #1:

   a. A log of operating time for the capture (collection) system, control device, monitoring equipment, and the associated emissions units.

   b. All 3-hour blocks of time during which the average combustion temperature within the thermal incinerator, when any of the associated emissions unit was in operation, was more than 50 degrees Fahrenheit below the average temperature during the most recent


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emission test that demonstrated the incinerator system was in compliance with the destruction efficiency requirement.

4. The permittee shall collect and record the following information each day for emissions units K007, K008, K009, K010, K011, K012, K013, K014, K015, K016 and K017.

   a. The name and identification number of each coating, solvent and support material, and cleanup material, as applied.

   b. The VOC content of each coating, solvent and support material, and cleanup material, as applied, in pounds per gallon and in pounds per gallon excluding water and exempt solvents.

   c. The number of gallons of each coating, solvent and support material, and cleanup material employed.

   d. The content of each individual HAP (i.e. xylene, toluene, and any other HAP) in each coating, solvent and support material and cleanup material employed, in pounds per gallon.

   e. The total uncontrolled VOC emission rate for all coatings, solvent and support materials, and cleanup materials employed, in pounds per day. This calculation is the summation of the product of (4.b or VOC content in pounds per gallon) times (4.c or number of gallons per day) for each coating, solvent, support material and cleanup material employed.

   f. The total uncontrolled emission rate for each individual HAP from all coatings, solvent and support materials and cleanup materials employed, in pounds per day. This calculation is the summation of the product of (4.d or individual HAP content in pounds per gallon) times (4.c or number of gallons per day) for each coating, solvent, support material and cleanup material employed.

   g. The total uncontrolled emission rate of all HAPs collectively from all coatings, solvent and support materials and cleanup materials employed, in pounds per day. This calculation is summation of each individual HAP emission rate, as determined above in 4.f.

   h. The calculated, controlled VOC emission rate for all coatings, solvent and support materials and cleanup materials, in pounds per day. The controlled, daily VOC emission rate shall be calculated using the overall control efficiency for the control equipment as determined during the most recent emission test that demonstrated that the emissions unit was in compliance. The controlled VOC emission rate is the uncontrolled VOC emission rate multiplied by (1 minus the overall control efficiency, in percentage).

   i. The calculated, controlled emission rate for each individual HAP from all coatings, solvent and support materials and cleanup materials, in pounds per day. The controlled



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emission rate shall be calculated using the overall control efficiency for the control equipment as determined during the most recent emission test that demonstrated that the emissions unit was in compliance. The controlled emission rate for each individual HAP is the uncontrolled emission rate multiplied by (1 minus the overall control efficiency, in percentage).

j. The total controlled emission rate of all HAPs collectively from all coatings, solvent and support materials and cleanup materials employed, in pounds per day. This calculation is summation of each individual HAP controlled emission rate, as determined above in 4.i.

5. The permittee shall collect and record the following information each month for emissions units K007, K008, K009, K010, K011, K012, K013, K014, K015, K016 and K017.

a. The controlled emission rate for each individual HAP from all coatings, solvent and support materials and cleanup materials, in pounds per rolling 12 month period. This calculation is the summation of each daily emission rate, as recorded per Section C.4.i, for the past twelve months and then multiplied by ton/2,000 lbs.

b. The controlled emission rate for all HAPs collectively from all coatings, solvent and support materials and cleanup materials, in pounds per rolling 12 month period. This calculation is the summation of each daily emission rate, as recorded per Section C.4.j, for the past twelve months and then multiplied by ton/2,000 lbs.

c. The controlled VOC emission rate for all coatings, solvent and support materials and cleanup materials, in tons per rolling 12 month period. This calculation is the summation of each daily emission rate, as recorded per Section C.4.h, for the past twelve months and then multiplied by ton/2,000 lbs.

d. The coating usage rate as described in Section B.3 in gallons per month.

e. The solvent usage rate as described in Section B.3 in gallons per month.

6. The permit to install for this emissions unit 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 for each pollutant emitted by this emissions unit using data from the permit to install application and the SCREEN 3.0 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 table summarizes the results of the modeling from RTO #1:

| Compound | TLV ($ug.m^3$) | MAGLC = TLV/42 ($ug.m^3$) | Emission rate (g/s) | Predicted 1-hr max ground level conc. ($ug.m^3$) | MAGLC exceeded (Y/N) |
|---|---|---|---|---|---|


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| | | | | | |
|---|---|---|---|---|---|
| formaldehyde | 271 | 6 | 0.0011 | 0.12 | N |
| methanol | 262,086 | 6,240 | 0.23 | 26.43 | N |
| acetone | 1,187,116 | 28,264 | 0.01 | 1.15 | N |
| MEK | 589,775 | 14,042 | 0.32 | 35.88 | N |
| naphthalene | 52,429 | 1,248 | 0.0001 | 0.008 | N |
| cumene | 245,787 | 5,852 | 0.000001 | 0.0001 | N |
| ethylbenzene | 4343,192 | 10,338 | 0.22 | 25.35 | N |
| MIBK | 204,826 | 4,877 | 0.18 | 20.91 | N |
| toluene | 188,405 | 4,486 | 0.57 | 65.11 | N |
| hexane | 1,762,372 | 41,961 | 0.000001 | 0.0001 | N |
| xylene | 434,192 | 10,338 | 1.03 | 116.63 | N |

7. 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 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.).

   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



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(other than (VV)(1)(a)(ii)), then the permittee shall obtain a final permit to install prior to the change(s).

8. 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 satisfied 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 quarterly summaries of the following records:

   a. A log of operating time for the capture (collection) system, control device, monitoring equipment, and the associated emission unit.

   b. All 3-hour blocks of time during which the average combustion temperature within the thermal incinerator does not comply with the temperature limitation specified above.

   c. All periods of time during which the permanent total enclosure was not maintained at the required differential pressure specified above.

   d. A list of all days when the daily VOC emission rate from RTO #1 exceeded 151.8 pounds.

   e. A list of any days when noncomplying coatings were used.

   f. A list of all months when the amount of coatings (including stains, toners, glazes, topcoats and sealers) exceeded 43,196 gallons, and the amount of solvent and support materials exceeded 15,300 gallons.

2. The permittee shall also submit a quarterly deviation report when the total controlled emissions of VOC, individual HAPs, and the total aggregate HAPs from RTO #1 exceed the limits listed in A.2.d and A.2.e respectively.

## E. Testing Requirements

1. The permittee shall conduct, or have conducted, emission testing for this emission unit in accordance with the following requirements:



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a. The emission testing shall be conducted within 3 months after issuance of this permit.

b. The emission testing shall be conducted to demonstrate compliance with the VOC capture efficiency and control efficiency requirement specified in Section A.2.a. Emission testing shall also be conducted to establish the average combustion temperature within the thermal incinerator, as specified in Section B.1, and to establish the minimum pressure differential within the permanent total enclosure, as specified in Section B.2.

c. The test(s) shall be conducted while the emissions units are operating at or near their maximum capacity, unless otherwise specified or approved by the Ohio EPA Northeast District Office.

d. The capture efficiency shall be determined using Methods 204 through 204F, as specified in 40 CFR part 51, Appendix M, or the permittee may request to use an alternative method or procedure for the determination of capture efficiency in accordance with the U.S. EPA's "Guideline for Determining Capture Efficiency," dated January 9, 1995. (The Ohio EPA will consider the request, including an evaluation of the applicability, necessity, and validity of the alternative, and may approve the use of the alternative if such approval does not contravene any other applicable requirement.)

e. The control efficiency (i.e., the percent reduction in mass emissions between the inlet and outlet of the control system) shall be determined in accordance with the test methods and procedures specified in OAC rule 3745-21-10 or an approved alternative test protocol. The test methods and procedures selected shall be based on a consideration of the diversity of the organic species present and their total concentration, and on a consideration of the potential presence of interfering gases.

f. U.S. EPA Method 24 shall be used, in accordance with OAC rule 3745-21-04(B)(5), to determine the VOC contents for all coatings, solvent and support materials, and cleanup materials used during the performance test(s). If, pursuant to section 4.3 of Method 24, 40 CFR part 60, Appendix A, an owner or operator determines that Method 24 cannot be used for a particular coating, solvent and support material, or cleanup material, the permittee shall so notify the Administrator of the U.S. EPA and shall use formulation data for that coating, solvent and support material, or cleanup material to demonstrate compliance until the U.S. EPA provides alternative analytical procedures or alternative precision statements for Method 24.

g. Not later than 30 days prior to the proposed test date(s), the permittee shall submit an "Intent to Test" notification to the Ohio EPA Northeast District Office. The "Intent to Test" notification shall describe in detail the proposed test methods and procedures, the emissions unit operating parameters, the time(s) and date(s) of the test(s), and the person(s) who will be conducting the test(s). Failure to submit such notification for review and approval prior to the test(s) may result in the Ohio EPA Northeast District Office's refusal to accept the results of the emission test(s).



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Personnel from the Ohio EPA Northeast District Office shall be permitted to witness the test(s), examine the testing equipment, and acquire data and information necessary to ensure that the operation of the emissions unit and the testing procedures provide a valid characterization of the emissions from the emissions unit and/or the performance of the control equipment.

h. A comprehensive written report on the results of the emissions test(s) shall be signed by the person or persons responsible for the tests and submitted to the Ohio EPA Northeast District Office within 30 days following completion of the test(s).

2. Emission Limitation:
151.8 lbs VOC /day and 27.7 tons VOC per rolling 12 month period from RTO #1

Applicable Compliance Method:
Compliance shall be based upon the recordkeeping specified in Section C.4 and C.5.

3. Emission Limitation:
792 lbs/month and 4.75 tons per rolling 12 month period of an individual HAP from RTO #1

Applicable Compliance Method:
Compliance shall be based upon the recordkeeping specified in Section C.5.

4. Emission Limitation:
2,067 lbs/month and 12.4 tons per rolling 12 month period of all HAPs from RTO #1

Applicable Compliance Method:
Compliance shall be based upon the recordkeeping specified in Section C.5.

5. Compliance with the VOC content restrictions of each coating, solvent and support material, and cleanup material shall be based upon the use of U.S. EPA Method 24.

6. Emission Limitation:
0.7 lb NOx/hr and 3.2 tons NOx/year from the combustion of natural gas in the thermal oxidizer.

Applicable Compliance Method:
The following equation shall be used to determine the hourly emission rate.

$$E = EF \times R \times 1/H$$

where:

E = Emission rate, in lbs/hr

EF = Emission factor (AP-42, Section 1.4) for NOx is 100 lbs/mmcf.



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R = Maximum rating of the thermal oxidizer reported to be 7.5 mmBtu/hr.

H = Heating value of the natural gas, in Btu/cf. 1,020 Btu/cf was used in the emission calculation for this permit.

The yearly rate, in tons/year, shall be determined by multiplying the hourly rate (lbs/hr) as calculated above, by (# hrs of operation/year) and (ton/2,000 lbs).

**7.** Emission Limitation:
0.6 lb CO/hr and 2.7 tons CO/year from the combustion of natural gas in the thermal oxidizer.

Applicable Compliance Method:
The following equation shall be used to determine the hourly emission rate.

E = EF x R x 1/H

where:

E = Emission rate, in lbs/hr

EF = Emission factor (AP-42, Section 1.4) for CO is 84 lbs/mmcf.

R = Maximum rating of the thermal oxidizer reported to be 7.5 mmBtu/hr.

H = Heating value of the natural gas, in Btu/cf. 1,020 Btu/cf was used in the emission calculation for this permit.

The yearly rate (tons/year) shall be determined by multiplying the hourly rate (lbs/hr), as calculated above, by (# hrs of operation/year) and (ton/2,000 lbs).

## F. Miscellaneous Requirements

1. In accordance with the provisions of OAC rule 3745-35-07, the following terms and conditions of this permit to install are federally enforceable: A-F, except C.6, C.7 and C.8.

2. The terms and condition of this permit supercede those contained with PTI # 02-12833. The exemption would be that the terms and conditions for F003 (Sawdust Storage Bin #1 Load-out) and F004 (Sawdust Storage Bin #2 Load-out) contained in PTI #02-12833 are still applicable.



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## 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 |
|---|---|---|
| K012 - Spray booth 6 of overhead conveyor line 3, controlled by regenerative thermal oxidizer No. 1 | OAC rule 3745-31-05(A)(3) | Volatile Organic Compound (VOC) emissions shall not exceed 151.8 pounds per day.<br><br>Hazardous Air Pollutant (HAP) emissions shall not exceed 792 pounds per month for an individual HAP and 2,067 pounds per month for combined HAPs.<br><br>Nitrogen Oxide (NOx) emissions from the combustion of natural gas from the thermal oxidizer shall not exceed 0.7 pound per hour, 3.2 tons per year.<br><br>Carbon Monoxide (CO) emissions from the combustion of natural gas from the thermal oxidizer shall not exceed 0.6 pound per hour, 2.7 tons per year.<br><br>The requirements of this rule also include compliance with the requirements of OAC rule 3745-35-02(D) |
| | OAC rule 3745-35-07(B) | See Section A.2.a through A.2.c. |
| | OAC rule 3745-21-07(G)(2) | See Section A.2.d and A.2.e. |



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| | |
|---|---|
| | The requirements of this rule are less stringent than the requirements established pursuant to OAC rule 3745-31-05(A)(3). |

**2. Additional Terms and Conditions**

**2.a** The permittee shall design enclosure #1 that will house K007, K008, K009, K010, K011, K012, K013, K014, K015, K016 and K017 in such a manner as to function as a permanent total enclosure (PTE) as defined by U.S. EPA Method 204. The use of the PTE, as defined in Reference Method 204, provides for 100% capture efficiency.

**2.b** The permittee shall install and maintain an incineration system to control the VOC emissions from the permanent total enclosure, PTE #1. The incinerator system shall have a VOC destruction efficiency of at least 99% by weight.

**2.c** The volatile organic compound (VOC) content of the Coatings (including stains, toners, glazes, topcoats and sealers) and Solvents & Support Materials used by the permittee at this facility shall not exceed the following VOC content, minus water:

| | |
|---|---|
| Coatings | 7.5 lbs VOC/gallon |
| Solvents & Support Materials | 9.0 lbs VOC/gallon |

**2.d** Emissions from the Regenerative Thermal Oxidizer (RTO) #1 shall be restricted in such a manner to limit emissions from emissions units K007, K008, K009, K010, K011, K012, K013, K014, K015, K016 and K017 to the following:

i. 27.7 tons VOC per rolling 12 month period
ii. 4.75 tons per rolling 12 month period of any individual HAP
iii. 12.4 tons per rolling 12 month period of total aggregate HAPs

**2.e** Emissions from the entire facility shall not exceed the following limits:

i. 55.4 tons VOC per rolling 12 month period
ii. 9.5 tons per rolling 12 month period of any individual HAP
iii. 24.8 tons per rolling 12 month period of total aggregate HAPs

**B. Operational Restrictions**

1. The average combustion temperature within RTO #1, for any 3-hour block of time when an associated emissions unit is in operation, shall not be more than 50 degrees Fahrenheit below the average temperature during the most recent emission test that demonstrated the RTO system was in compliance with the destruction efficiency requirement.



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2. The permanent total enclosure shall be maintained under negative pressure, at a minimum pressure differential that is not less than the minimum pressure differential (inches of water) established during the most recent emission test that demonstrated the emissions unit was in compliance or 0.007 inches of water as established in Method 204, whenever the emissions unit is in operation.

3. The permittee shall limit the total coating and solvent usage for PTE #1 (K007, K008, K009, K010, K011, K012, K013, K014, K015, K016 and K017) as follows:

| | |
|---|---|
| Coatings (including stains, toners, glazes, topcoats and sealers) | 43,196 gallons/month |
| Solvents & Support Materials | 15,300 gallons/month |

**C. Monitoring and/or Recordkeeping Requirements**

1. The permittee shall install, maintain and operate monitoring devices and a recorder which simultaneously measure and record the pressure inside and outside the permanent total enclosure.

   The monitoring and recording devices 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 following information on a daily basis:

   a. The difference in pressure between the permanent total enclosure and the surrounding area(s).

   b. A log or record of operating time for the capture (collection) system, control device, monitoring equipment, and the associated emissions unit.

2. The permittee shall operate and maintain a continuous temperature monitor and recorder which measures and records the combustion temperature within the thermal incinerator when the emissions unit is in operation. Units shall be in degrees Fahrenheit. The monitoring and recording devices shall be capable of accurately measuring the desired parameter. The temperature monitor and recorder shall be installed, calibrated, operated and maintained in accordance with the manufacturer's recommendations, with any modifications deemed necessary by the permittee.

3. The permittee shall collect and record the following information for each day for RTO #1:

   a. A log of operating time for the capture (collection) system, control device, monitoring equipment, and the associated emissions units.

   b. All 3-hour blocks of time during which the average combustion temperature within the thermal incinerator, when any of the associated emissions unit was in operation, was more than 50 degrees Fahrenheit below the average temperature during the most recent


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emission test that demonstrated the incinerator system was in compliance with the destruction efficiency requirement.

4. The permittee shall collect and record the following information each day for emissions units K007, K008, K009, K010, K011, K012, K013, K014, K015, K016 and K017.

   a. The name and identification number of each coating, solvent and support material, and cleanup material, as applied.

   b. The VOC content of each coating, solvent and support material, and cleanup material, as applied, in pounds per gallon and in pounds per gallon excluding water and exempt solvents.

   c. The number of gallons of each coating, solvent and support material, and cleanup material employed.

   d. The content of each individual HAP (i.e. xylene, toluene, and any other HAP) in each coating, solvent and support material and cleanup material employed, in pounds per gallon.

   e. The total uncontrolled VOC emission rate for all coatings, solvent and support materials, and cleanup materials employed, in pounds per day. This calculation is the summation of the product of (4.b or VOC content in pounds per gallon) times (4.c or number of gallons per day) for each coating, solvent, support material and cleanup material employed.

   f. The total uncontrolled emission rate for each individual HAP from all coatings, solvent and support materials and cleanup materials employed, in pounds per day. This calculation is the summation of the product of (4.d or individual HAP content in pounds per gallon) times (4.c or number of gallons per day) for each coating, solvent, support material and cleanup material employed.

   g. The total uncontrolled emission rate of all HAPs collectively from all coatings, solvent and support materials and cleanup materials employed, in pounds per day. This calculation is summation of each individual HAP emission rate, as determined above in 4.f.

   h. The calculated, controlled VOC emission rate for all coatings, solvent and support materials and cleanup materials, in pounds per day. The controlled, daily VOC emission rate shall be calculated using the overall control efficiency for the control equipment as determined during the most recent emission test that demonstrated that the emissions unit was in compliance. The controlled VOC emission rate is the uncontrolled VOC emission rate multiplied by (1 minus the overall control efficiency, in percentage).

   i. The calculated, controlled emission rate for each individual HAP from all coatings, solvent and support materials and cleanup materials, in pounds per day. The controlled



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emission rate shall be calculated using the overall control efficiency for the control equipment as determined during the most recent emission test that demonstrated that the emissions unit was in compliance. The controlled emission rate for each individual HAP is the uncontrolled emission rate multiplied by (1 minus the overall control efficiency, in percentage).

j. The total controlled emission rate of all HAPs collectively from all coatings, solvent and support materials and cleanup materials employed, in pounds per day. This calculation is summation of each individual HAP controlled emission rate, as determined above in 4.i.

5. The permittee shall collect and record the following information each month for emissions units K007, K008, K009, K010, K011, K012, K013, K014, K015, K016 and K017.

a. The controlled emission rate for each individual HAP from all coatings, solvent and support materials and cleanup materials, in pounds per rolling 12 month period. This calculation is the summation of each daily emission rate, as recorded per Section C.4.i, for the past twelve months and then multiplied by ton/2,000 lbs.

b. The controlled emission rate for all HAPs collectively from all coatings, solvent and support materials and cleanup materials, in pounds per rolling 12 month period. This calculation is the summation of each daily emission rate, as recorded per Section C.4.j, for the past twelve months and then multiplied by ton/2,000 lbs.

c. The controlled VOC emission rate for all coatings, solvent and support materials and cleanup materials, in tons per rolling 12 month period. This calculation is the summation of each daily emission rate, as recorded per Section C.4.h, for the past twelve months and then multiplied by ton/2,000 lbs.

d. The coating usage rate as described in Section B.3 in gallons per month.

e. The solvent usage rate as described in Section B.3 in gallons per month.

6. The permit to install for this emissions unit 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 for each pollutant emitted by this emissions unit using data from the permit to install application and the SCREEN 3.0 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 table summarizes the results of the modeling from RTO #1:

| Compound | TLV ($ug.m^3$) | MAGLC = TLV/42 ($ug.m^3$) | Emission rate (g/s) | Predicted 1-hr max ground level conc. ($ug.m^3$) | MAGLC exceeded (Y/N) |
|---|---|---|---|---|---|


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| | | | | | |
|---|---|---|---|---|---|
| formaldehyde | 271 | 6 | 0.0011 | 0.12 | N |
| methanol | 262,086 | 6,240 | 0.23 | 26.43 | N |
| acetone | 1,187,116 | 28,264 | 0.01 | 1.15 | N |
| MEK | 589,775 | 14,042 | 0.32 | 35.88 | N |
| naphthalene | 52,429 | 1,248 | 0.0001 | 0.008 | N |
| cumene | 245,787 | 5,852 | 0.000001 | 0.0001 | N |
| ethylbenzene | 4343,192 | 10,338 | 0.22 | 25.35 | N |
| MIBK | 204,826 | 4,877 | 0.18 | 20.91 | N |
| toluene | 188,405 | 4,486 | 0.57 | 65.11 | N |
| hexane | 1,762,372 | 41,961 | 0.000001 | 0.0001 | N |
| xylene | 434,192 | 10,338 | 1.03 | 116.63 | N |

7. 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 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.).

   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



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(other than (VV)(1)(a)(ii)), then the permittee shall obtain a final permit to install prior to the change(s).

8. 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 satisfied 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 quarterly summaries of the following records:

   a. A log of operating time for the capture (collection) system, control device, monitoring equipment, and the associated emission unit.

   b. All 3-hour blocks of time during which the average combustion temperature within the thermal incinerator does not comply with the temperature limitation specified above.

   c. All periods of time during which the permanent total enclosure was not maintained at the required differential pressure specified above.

   d. A list of all days when the daily VOC emission rate from RTO #1 exceeded 151.8 pounds.

   e. A list of any days when noncomplying coatings were used.

   f. A list of all months when the amount of coatings (including stains, toners, glazes, topcoats and sealers) exceeded 43,196 gallons, and the amount of solvent and support materials exceeded 15,300 gallons.

2. The permittee shall also submit a quarterly deviation report when the total controlled emissions of VOC, individual HAPs, and the total aggregate HAPs from RTO #1 exceed the limits listed in A.2.d and A.2.e respectively.

## E. Testing Requirements

1. The permittee shall conduct, or have conducted, emission testing for this emission unit in accordance with the following requirements:



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a. The emission testing shall be conducted within 3 months after issuance of this permit.

b. The emission testing shall be conducted to demonstrate compliance with the VOC capture efficiency and control efficiency requirement specified in Section A.2.a. Emission testing shall also be conducted to establish the average combustion temperature within the thermal incinerator, as specified in Section B.1, and to establish the minimum pressure differential within the permanent total enclosure, as specified in Section B.2.

c. The test(s) shall be conducted while the emissions units are operating at or near their maximum capacity, unless otherwise specified or approved by the Ohio EPA Northeast District Office.

d. The capture efficiency shall be determined using Methods 204 through 204F, as specified in 40 CFR part 51, Appendix M, or the permittee may request to use an alternative method or procedure for the determination of capture efficiency in accordance with the U.S. EPA's "Guideline for Determining Capture Efficiency," dated January 9, 1995. (The Ohio EPA will consider the request, including an evaluation of the applicability, necessity, and validity of the alternative, and may approve the use of the alternative if such approval does not contravene any other applicable requirement.)

e. The control efficiency (i.e., the percent reduction in mass emissions between the inlet and outlet of the control system) shall be determined in accordance with the test methods and procedures specified in OAC rule 3745-21-10 or an approved alternative test protocol. The test methods and procedures selected shall be based on a consideration of the diversity of the organic species present and their total concentration, and on a consideration of the potential presence of interfering gases.

f. U.S. EPA Method 24 shall be used, in accordance with OAC rule 3745-21-04(B)(5), to determine the VOC contents for all coatings, solvent and support materials, and cleanup materials used during the performance test(s). If, pursuant to section 4.3 of Method 24, 40 CFR part 60, Appendix A, an owner or operator determines that Method 24 cannot be used for a particular coating, solvent and support material, or cleanup material, the permittee shall so notify the Administrator of the U.S. EPA and shall use formulation data for that coating, solvent and support material, or cleanup material to demonstrate compliance until the U.S. EPA provides alternative analytical procedures or alternative precision statements for Method 24.

g. Not later than 30 days prior to the proposed test date(s), the permittee shall submit an "Intent to Test" notification to the Ohio EPA Northeast District Office. The "Intent to Test" notification shall describe in detail the proposed test methods and procedures, the emissions unit operating parameters, the time(s) and date(s) of the test(s), and the person(s) who will be conducting the test(s). Failure to submit such notification for



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review and approval prior to the test(s) may result in the Ohio EPA Northeast District Office's refusal to accept the results of the emission test(s).

Personnel from the Ohio EPA Northeast District Office shall be permitted to witness the test(s), examine the testing equipment, and acquire data and information necessary to ensure that the operation of the emissions unit and the testing procedures provide a valid characterization of the emissions from the emissions unit and/or the performance of the control equipment.

h. A comprehensive written report on the results of the emissions test(s) shall be signed by the person or persons responsible for the tests and submitted to the Ohio EPA Northeast District Office within 30 days following completion of the test(s).

2. Emission Limitation:
151.8 lbs VOC /day and 27.7 tons VOC per rolling 12 month period from RTO #1

Applicable Compliance Method:
Compliance shall be based upon the recordkeeping specified in Section C.4 and C.5.

3. Emission Limitation:
792 lbs/month and 4.75 tons per rolling 12 month period of an individual HAP from RTO #1

Applicable Compliance Method:
Compliance shall be based upon the recordkeeping specified in Section C.5.

4. Emission Limitation:
2,067 lbs/month and 12.4 tons per rolling 12 month period of all HAPs from RTO #1

Applicable Compliance Method:
Compliance shall be based upon the recordkeeping specified in Section C.5.

5. Compliance with the VOC content restrictions of each coating, solvent and support material, and cleanup material shall be based upon the use of U.S. EPA Method 24.

6. Emission Limitation:
0.7 lb NOx/hr and 3.2 tons NOx/year from the combustion of natural gas in the thermal oxidizer.

Applicable Compliance Method:
The following equation shall be used to determine the hourly emission rate.

$$E = EF \times R \times 1/H$$

where:

E = Emission rate, in lbs/hr



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EF = Emission factor (AP-42, Section 1.4) for NOx is 100 lbs/mmcf.

R = Maximum rating of the thermal oxidizer reported to be 7.5 mmBtu/hr.

H = Heating value of the natural gas, in Btu/cf. 1,020 Btu/cf was used in the emission calculation for this permit.

The yearly rate, in tons/year, shall be determined by multiplying the hourly rate (lbs/hr) as calculated above, by (# hrs of operation/year) and (ton/2,000 lbs).

**7.** Emission Limitation:
0.6 lb CO/hr and 2.7 tons CO/year from the combustion of natural gas in the thermal oxidizer.

Applicable Compliance Method:
The following equation shall be used to determine the hourly emission rate.

E = EF x R x 1/H

where:

E = Emission rate, in lbs/hr

EF = Emission factor (AP-42, Section 1.4) for CO is 84 lbs/mmcf.

R = Maximum rating of the thermal oxidizer reported to be 7.5 mmBtu/hr.

H = Heating value of the natural gas, in Btu/cf. 1,020 Btu/cf was used in the emission calculation for this permit.

The yearly rate (tons/year) shall be determined by multiplying the hourly rate (lbs/hr), as calculated above, by (# hrs of operation/year) and (ton/2,000 lbs).

## F. Miscellaneous Requirements

1. In accordance with the provisions of OAC rule 3745-35-07, the following terms and conditions of this permit to install are federally enforceable: A-F, except C.6, C.7 and C.8.

2. The terms and condition of this permit supercede those contained with PTI # 02-12833. The exemption would be that the terms and conditions for F003 (Sawdust Storage Bin #1 Load-out) and F004 (Sawdust Storage Bin #2 Load-out) contained in PTI #02-12833 are still applicable.



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## 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 |
|---|---|---|
| K013 - Spray booth 7 of overhead conveyor line 3, controlled by regenerative thermal oxidizer No. 1 | OAC rule 3745-31-05(A)(3) | Volatile Organic Compound (VOC) emissions shall not exceed 151.8 pounds per day.<br><br>Hazardous Air Pollutant (HAP) emissions shall not exceed 792 pounds per month for an individual HAP and 2,067 pounds per month for combined HAPs.<br><br>Nitrogen Oxide (NOx) emissions from the combustion of natural gas from the thermal oxidizer shall not exceed 0.7 pound per hour, 3.2 tons per year.<br><br>Carbon Monoxide (CO) emissions from the combustion of natural gas from the thermal oxidizer shall not exceed 0.6 pound per hour, 2.7 tons per year.<br><br>The requirements of this rule also include compliance with the requirements of OAC rule 3745-35-02(D) |
| | OAC rule 3745-35-07(B) | See Section A.2.a through A.2.c. |
| | OAC rule 3745-21-07(G)(2) | See Section A.2.d and A.2.e. |



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| | |
|---|---|
| | The requirements of this rule are less stringent than the requirements established pursuant to OAC rule 3745-31-05(A)(3). |

**2. Additional Terms and Conditions**

**2.a** The permittee shall design enclosure #1 that will house K007, K008, K009, K010, K011, K012, K013, K014, K015, K016 and K017 in such a manner as to function as a permanent total enclosure (PTE) as defined by U.S. EPA Method 204. The use of the PTE, as defined in Reference Method 204, provides for 100% capture efficiency.

**2.b** The permittee shall install and maintain an incineration system to control the VOC emissions from the permanent total enclosure, PTE #1. The incinerator system shall have a VOC destruction efficiency of at least 99% by weight.

**2.c** The volatile organic compound (VOC) content of the Coatings (including stains, toners, glazes, topcoats and sealers) and Solvents & Support Materials used by the permittee at this facility shall not exceed the following VOC content, minus water:

| | |
|---|---|
| Coatings | 7.5 lbs VOC/gallon |
| Solvents & Support Materials | 9.0 lbs VOC/gallon |

**2.d** Emissions from the Regenerative Thermal Oxidizer (RTO) #1 shall be restricted in such a manner to limit emissions from emissions units K007, K008, K009, K010, K011, K012, K013, K014, K015, K016 and K017 to the following:

i. 27.7 tons VOC per rolling 12 month period
ii. 4.75 tons per rolling 12 month period of any individual HAP
iii. 12.4 tons per rolling 12 month period of total aggregate HAPs

**2.e** Emissions from the entire facility shall not exceed the following limits:

i. 55.4 tons VOC per rolling 12 month period
ii. 9.5 tons per rolling 12 month period of any individual HAP
iii. 24.8 tons per rolling 12 month period of total aggregate HAPs

**B. Operational Restrictions**

1. The average combustion temperature within RTO #1, for any 3-hour block of time when an associated emissions unit is in operation, shall not be more than 50 degrees Fahrenheit below the average temperature during the most recent emission test that demonstrated the RTO system was in compliance with the destruction efficiency requirement.



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2. The permanent total enclosure shall be maintained under negative pressure, at a minimum pressure differential that is not less than the minimum pressure differential (inches of water) established during the most recent emission test that demonstrated the emissions unit was in compliance or 0.007 inches of water as established in Method 204, whenever the emissions unit is in operation.

3. The permittee shall limit the total coating and solvent usage for PTE #1 (K007, K008, K009, K010, K011, K012, K013, K014, K015, K016 and K017) as follows:

| | |
|---|---|
| Coatings (including stains, toners, glazes, topcoats and sealers) | 43,196 gallons/month |
| Solvents & Support Materials | 15,300 gallons/month |

## C. Monitoring and/or Recordkeeping Requirements

1. The permittee shall install, maintain and operate monitoring devices and a recorder which simultaneously measure and record the pressure inside and outside the permanent total enclosure.

   The monitoring and recording devices 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 following information on a daily basis:

   a. The difference in pressure between the permanent total enclosure and the surrounding area(s).

   b. A log or record of operating time for the capture (collection) system, control device, monitoring equipment, and the associated emissions unit.

2. The permittee shall operate and maintain a continuous temperature monitor and recorder which measures and records the combustion temperature within the thermal incinerator when the emissions unit is in operation. Units shall be in degrees Fahrenheit. The monitoring and recording devices shall be capable of accurately measuring the desired parameter. The temperature monitor and recorder shall be installed, calibrated, operated and maintained in accordance with the manufacturer's recommendations, with any modifications deemed necessary by the permittee.

3. The permittee shall collect and record the following information for each day for RTO #1:

   a. A log of operating time for the capture (collection) system, control device, monitoring equipment, and the associated emissions units.

   b. All 3-hour blocks of time during which the average combustion temperature within the thermal incinerator, when any of the associated emissions unit was in operation, was more than 50 degrees Fahrenheit below the average temperature during the most recent


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emission test that demonstrated the incinerator system was in compliance with the destruction efficiency requirement.

4. The permittee shall collect and record the following information each day for emissions units K007, K008, K009, K010, K011, K012, K013, K014, K015, K016 and K017.

   a. The name and identification number of each coating, solvent and support material, and cleanup material, as applied.

   b. The VOC content of each coating, solvent and support material, and cleanup material, as applied, in pounds per gallon and in pounds per gallon excluding water and exempt solvents.

   c. The number of gallons of each coating, solvent and support material, and cleanup material employed.

   d. The content of each individual HAP (i.e. xylene, toluene, and any other HAP) in each coating, solvent and support material and cleanup material employed, in pounds per gallon.

   e. The total uncontrolled VOC emission rate for all coatings, solvent and support materials, and cleanup materials employed, in pounds per day. This calculation is the summation of the product of (4.b or VOC content in pounds per gallon) times (4.c or number of gallons per day) for each coating, solvent, support material and cleanup material employed.

   f. The total uncontrolled emission rate for each individual HAP from all coatings, solvent and support materials and cleanup materials employed, in pounds per day. This calculation is the summation of the product of (4.d or individual HAP content in pounds per gallon) times (4.c or number of gallons per day) for each coating, solvent, support material and cleanup material employed.

   g. The total uncontrolled emission rate of all HAPs collectively from all coatings, solvent and support materials and cleanup materials employed, in pounds per day. This calculation is summation of each individual HAP emission rate, as determined above in 4.f.

   h. The calculated, controlled VOC emission rate for all coatings, solvent and support materials and cleanup materials, in pounds per day. The controlled, daily VOC emission rate shall be calculated using the overall control efficiency for the control equipment as determined during the most recent emission test that demonstrated that the emissions unit was in compliance. The controlled VOC emission rate is the uncontrolled VOC emission rate multiplied by (1 minus the overall control efficiency, in percentage).

   i. The calculated, controlled emission rate for each individual HAP from all coatings, solvent and support materials and cleanup materials, in pounds per day. The controlled



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emission rate shall be calculated using the overall control efficiency for the control equipment as determined during the most recent emission test that demonstrated that the emissions unit was in compliance. The controlled emission rate for each individual HAP is the uncontrolled emission rate multiplied by (1 minus the overall control efficiency, in percentage).

j. The total controlled emission rate of all HAPs collectively from all coatings, solvent and support materials and cleanup materials employed, in pounds per day. This calculation is summation of each individual HAP controlled emission rate, as determined above in 4.i.

5. The permittee shall collect and record the following information each month for emissions units K007, K008, K009, K010, K011, K012, K013, K014, K015, K016 and K017.

a. The controlled emission rate for each individual HAP from all coatings, solvent and support materials and cleanup materials, in pounds per rolling 12 month period. This calculation is the summation of each daily emission rate, as recorded per Section C.4.i, for the past twelve months and then multiplied by ton/2,000 lbs.

b. The controlled emission rate for all HAPs collectively from all coatings, solvent and support materials and cleanup materials, in pounds per rolling 12 month period. This calculation is the summation of each daily emission rate, as recorded per Section C.4.j, for the past twelve months and then multiplied by ton/2,000 lbs.

c. The controlled VOC emission rate for all coatings, solvent and support materials and cleanup materials, in tons per rolling 12 month period. This calculation is the summation of each daily emission rate, as recorded per Section C.4.h, for the past twelve months and then multiplied by ton/2,000 lbs.

d. The coating usage rate as described in Section B.3 in gallons per month.

e. The solvent usage rate as described in Section B.3 in gallons per month.

6. The permit to install for this emissions unit 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 for each pollutant emitted by this emissions unit using data from the permit to install application and the SCREEN 3.0 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 table summarizes the results of the modeling from RTO #1:

| Compound | TLV ($ug.m^3$) | MAGLC = TLV/42 ($ug.m^3$) | Emission rate (g/s) | Predicted 1-hr max ground level conc. ($ug.m^3$) | MAGLC exceeded (Y/N) |
|---|---|---|---|---|---|


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| | | | | | |
|---|---|---|---|---|---|
| formaldehyde | 271 | 6 | 0.0011 | 0.12 | N |
| methanol | 262,086 | 6,240 | 0.23 | 26.43 | N |
| acetone | 1,187,116 | 28,264 | 0.01 | 1.15 | N |
| MEK | 589,775 | 14,042 | 0.32 | 35.88 | N |
| naphthalene | 52,429 | 1,248 | 0.0001 | 0.008 | N |
| cumene | 245,787 | 5,852 | 0.000001 | 0.0001 | N |
| ethylbenzene | 4343,192 | 10,338 | 0.22 | 25.35 | N |
| MIBK | 204,826 | 4,877 | 0.18 | 20.91 | N |
| toluene | 188,405 | 4,486 | 0.57 | 65.11 | N |
| hexane | 1,762,372 | 41,961 | 0.000001 | 0.0001 | N |
| xylene | 434,192 | 10,338 | 1.03 | 116.63 | N |

7. 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 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.).

   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



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(other than (VV)(1)(a)(ii)), then the permittee shall obtain a final permit to install prior to the change(s).

8. 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 satisfied 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 quarterly summaries of the following records:

   a. A log of operating time for the capture (collection) system, control device, monitoring equipment, and the associated emission unit.

   b. All 3-hour blocks of time during which the average combustion temperature within the thermal incinerator does not comply with the temperature limitation specified above.

   c. All periods of time during which the permanent total enclosure was not maintained at the required differential pressure specified above.

   d. A list of all days when the daily VOC emission rate from RTO #1 exceeded 151.8 pounds.

   e. A list of any days when noncomplying coatings were used.

   f. A list of all months when the amount of coatings (including stains, toners, glazes, topcoats and sealers) exceeded 43,196 gallons, and the amount of solvent and support materials exceeded 15,300 gallons.

2. The permittee shall also submit a quarterly deviation report when the total controlled emissions of VOC, individual HAPs, and the total aggregate HAPs from RTO #1 exceed the limits listed in A.2.d and A.2.e respectively.

## E. Testing Requirements

1. The permittee shall conduct, or have conducted, emission testing for this emission unit in accordance with the following requirements:



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a. The emission testing shall be conducted within 3 months after issuance of this permit.

b. The emission testing shall be conducted to demonstrate compliance with the VOC capture efficiency and control efficiency requirement specified in Section A.2.a. Emission testing shall also be conducted to establish the average combustion temperature within the thermal incinerator, as specified in Section B.1, and to establish the minimum pressure differential within the permanent total enclosure, as specified in Section B.2.

c. The test(s) shall be conducted while the emissions units are operating at or near their maximum capacity, unless otherwise specified or approved by the Ohio EPA Northeast District Office.

d. The capture efficiency shall be determined using Methods 204 through 204F, as specified in 40 CFR part 51, Appendix M, or the permittee may request to use an alternative method or procedure for the determination of capture efficiency in accordance with the U.S. EPA's "Guideline for Determining Capture Efficiency," dated January 9, 1995. (The Ohio EPA will consider the request, including an evaluation of the applicability, necessity, and validity of the alternative, and may approve the use of the alternative if such approval does not contravene any other applicable requirement.)

e. The control efficiency (i.e., the percent reduction in mass emissions between the inlet and outlet of the control system) shall be determined in accordance with the test methods and procedures specified in OAC rule 3745-21-10 or an approved alternative test protocol. The test methods and procedures selected shall be based on a consideration of the diversity of the organic species present and their total concentration, and on a consideration of the potential presence of interfering gases.

f. U.S. EPA Method 24 shall be used, in accordance with OAC rule 3745-21-04(B)(5), to determine the VOC contents for all coatings, solvent and support materials, and cleanup materials used during the performance test(s). If, pursuant to section 4.3 of Method 24, 40 CFR part 60, Appendix A, an owner or operator determines that Method 24 cannot be used for a particular coating, solvent and support material, or cleanup material, the permittee shall so notify the Administrator of the U.S. EPA and shall use formulation data for that coating, solvent and support material, or cleanup material to demonstrate compliance until the U.S. EPA provides alternative analytical procedures or alternative precision statements for Method 24.

g. Not later than 30 days prior to the proposed test date(s), the permittee shall submit an "Intent to Test" notification to the Ohio EPA Northeast District Office. The "Intent to Test" notification shall describe in detail the proposed test methods and procedures, the emissions unit operating parameters, the time(s) and date(s) of the test(s), and the person(s) who will be conducting the test(s). Failure to submit such notification for



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review and approval prior to the test(s) may result in the Ohio EPA Northeast District Office's refusal to accept the results of the emission test(s).

Personnel from the Ohio EPA Northeast District Office shall be permitted to witness the test(s), examine the testing equipment, and acquire data and information necessary to ensure that the operation of the emissions unit and the testing procedures provide a valid characterization of the emissions from the emissions unit and/or the performance of the control equipment.

h. A comprehensive written report on the results of the emissions test(s) shall be signed by the person or persons responsible for the tests and submitted to the Ohio EPA Northeast District Office within 30 days following completion of the test(s).

2. Emission Limitation:
151.8 lbs VOC /day and 27.7 tons VOC per rolling 12 month period from RTO #1

Applicable Compliance Method:
Compliance shall be based upon the recordkeeping specified in Section C.4 and C.5.

3. Emission Limitation:
792 lbs/month and 4.75 tons per rolling 12 month period of an individual HAP from RTO #1

Applicable Compliance Method:
Compliance shall be based upon the recordkeeping specified in Section C.5.

4. Emission Limitation:
2,067 lbs/month and 12.4 tons per rolling 12 month period of all HAPs from RTO #1

Applicable Compliance Method:
Compliance shall be based upon the recordkeeping specified in Section C.5.

5. Compliance with the VOC content restrictions of each coating, solvent and support material, and cleanup material shall be based upon the use of U.S. EPA Method 24.

6. Emission Limitation:
0.7 lb NOx/hr and 3.2 tons NOx/year from the combustion of natural gas in the thermal oxidizer.

Applicable Compliance Method:
The following equation shall be used to determine the hourly emission rate.

$$E = EF \times R \times 1/H$$

where:

E = Emission rate, in lbs/hr



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EF = Emission factor (AP-42, Section 1.4) for NOx is 100 lbs/mmcf.

R = Maximum rating of the thermal oxidizer reported to be 7.5 mmBtu/hr.

H = Heating value of the natural gas, in Btu/cf. 1,020 Btu/cf was used in the emission calculation for this permit.

The yearly rate, in tons/year, shall be determined by multiplying the hourly rate (lbs/hr) as calculated above, by (# hrs of operation/year) and (ton/2,000 lbs).

**7.** Emission Limitation:
0.6 lb CO/hr and 2.7 tons CO/year from the combustion of natural gas in the thermal oxidizer.

Applicable Compliance Method:
The following equation shall be used to determine the hourly emission rate.

E = EF x R x 1/H

where:

E = Emission rate, in lbs/hr

EF = Emission factor (AP-42, Section 1.4) for CO is 84 lbs/mmcf.

R = Maximum rating of the thermal oxidizer reported to be 7.5 mmBtu/hr.

H = Heating value of the natural gas, in Btu/cf. 1,020 Btu/cf was used in the emission calculation for this permit.

The yearly rate (tons/year) shall be determined by multiplying the hourly rate (lbs/hr), as calculated above, by (# hrs of operation/year) and (ton/2,000 lbs).

## F. Miscellaneous Requirements

1. In accordance with the provisions of OAC rule 3745-35-07, the following terms and conditions of this permit to install are federally enforceable: A-F, except C.6, C.7 and C.8.

2. The terms and condition of this permit supercede those contained with PTI # 02-12833. The exemption would be that the terms and conditions for F003 (Sawdust Storage Bin #1 Load-out) and F004 (Sawdust Storage Bin #2 Load-out) contained in PTI #02-12833 are still applicable.



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## 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 |
|---|---|---|
| K014 - Spray booth 8 of overhead conveyor line 3, controlled by regenerative thermal oxidizer No. 1 | OAC rule 3745-31-05(A)(3) | Volatile Organic Compound (VOC) emissions shall not exceed 151.8 pounds per day.<br><br>Hazardous Air Pollutant (HAP) emissions shall not exceed 792 pounds per month for an individual HAP and 2,067 pounds per month for combined HAPs.<br><br>Nitrogen Oxide (NOx) emissions from the combustion of natural gas from the thermal oxidizer shall not exceed 0.7 pound per hour, 3.2 tons per year.<br><br>Carbon Monoxide (CO) emissions from the combustion of natural gas from the thermal oxidizer shall not exceed 0.6 pound per hour, 2.7 tons per year.<br><br>The requirements of this rule also include compliance with the requirements of OAC rule 3745-35-02(D) |
| | OAC rule 3745-35-07(B) | See Section A.2.a through A.2.c. |
| | OAC rule 3745-21-07(G)(2) | See Section A.2.d and A.2.e. |



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| | |
|---|---|
| | The requirements of this rule are less stringent than the requirements established pursuant to OAC rule 3745-31-05(A)(3). |

**2. Additional Terms and Conditions**

**2.a** The permittee shall design enclosure #1 that will house K007, K008, K009, K010, K011, K012, K013, K014, K015, K016 and K017 in such a manner as to function as a permanent total enclosure (PTE) as defined by U.S. EPA Method 204. The use of the PTE, as defined in Reference Method 204, provides for 100% capture efficiency.

**2.b** The permittee shall install and maintain an incineration system to control the VOC emissions from the permanent total enclosure, PTE #1. The incinerator system shall have a VOC destruction efficiency of at least 99% by weight.

**2.c** The volatile organic compound (VOC) content of the Coatings (including stains, toners, glazes, topcoats and sealers) and Solvents & Support Materials used by the permittee at this facility shall not exceed the following VOC content, minus water:

| | |
|---|---|
| Coatings | 7.5 lbs VOC/gallon |
| Solvents & Support Materials | 9.0 lbs VOC/gallon |

**2.d** Emissions from the Regenerative Thermal Oxidizer (RTO) #1 shall be restricted in such a manner to limit emissions from emissions units K007, K008, K009, K010, K011, K012, K013, K014, K015, K016 and K017 to the following:

i. 27.7 tons VOC per rolling 12 month period
ii. 4.75 tons per rolling 12 month period of any individual HAP
iii. 12.4 tons per rolling 12 month period of total aggregate HAPs

**2.e** Emissions from the entire facility shall not exceed the following limits:

i. 55.4 tons VOC per rolling 12 month period
ii. 9.5 tons per rolling 12 month period of any individual HAP
iii. 24.8 tons per rolling 12 month period of total aggregate HAPs

**B. Operational Restrictions**

1. The average combustion temperature within RTO #1, for any 3-hour block of time when an associated emissions unit is in operation, shall not be more than 50 degrees Fahrenheit below the average temperature during the most recent emission test that demonstrated the RTO system was in compliance with the destruction efficiency requirement.



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2. The permanent total enclosure shall be maintained under negative pressure, at a minimum pressure differential that is not less than the minimum pressure differential (inches of water) established during the most recent emission test that demonstrated the emissions unit was in compliance or 0.007 inches of water as established in Method 204, whenever the emissions unit is in operation.

3. The permittee shall limit the total coating and solvent usage for PTE #1 (K007, K008, K009, K010, K011, K012, K013, K014, K015, K016 and K017) as follows:

| | |
|---|---|
| Coatings (including stains, toners, glazes, topcoats and sealers) | 43,196 gallons/month |
| Solvents & Support Materials | 15,300 gallons/month |

## C. Monitoring and/or Recordkeeping Requirements

1. The permittee shall install, maintain and operate monitoring devices and a recorder which simultaneously measure and record the pressure inside and outside the permanent total enclosure.

   The monitoring and recording devices 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 following information on a daily basis:

   a. The difference in pressure between the permanent total enclosure and the surrounding area(s).

   b. A log or record of operating time for the capture (collection) system, control device, monitoring equipment, and the associated emissions unit.

2. The permittee shall operate and maintain a continuous temperature monitor and recorder which measures and records the combustion temperature within the thermal incinerator when the emissions unit is in operation. Units shall be in degrees Fahrenheit. The monitoring and recording devices shall be capable of accurately measuring the desired parameter. The temperature monitor and recorder shall be installed, calibrated, operated and maintained in accordance with the manufacturer's recommendations, with any modifications deemed necessary by the permittee.

3. The permittee shall collect and record the following information for each day for RTO #1:

   a. A log of operating time for the capture (collection) system, control device, monitoring equipment, and the associated emissions units.

   b. All 3-hour blocks of time during which the average combustion temperature within the thermal incinerator, when any of the associated emissions unit was in operation, was more than 50 degrees Fahrenheit below the average temperature during the most recent



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emission test that demonstrated the incinerator system was in compliance with the destruction efficiency requirement.

4. The permittee shall collect and record the following information each day for emissions units K007, K008, K009, K010, K011, K012, K013, K014, K015, K016 and K017.

   a. The name and identification number of each coating, solvent and support material, and cleanup material, as applied.

   b. The VOC content of each coating, solvent and support material, and cleanup material, as applied, in pounds per gallon and in pounds per gallon excluding water and exempt solvents.

   c. The number of gallons of each coating, solvent and support material, and cleanup material employed.

   d. The content of each individual HAP (i.e. xylene, toluene, and any other HAP) in each coating, solvent and support material and cleanup material employed, in pounds per gallon.

   e. The total uncontrolled VOC emission rate for all coatings, solvent and support materials, and cleanup materials employed, in pounds per day. This calculation is the summation of the product of (4.b or VOC content in pounds per gallon) times (4.c or number of gallons per day) for each coating, solvent, support material and cleanup material employed.

   f. The total uncontrolled emission rate for each individual HAP from all coatings, solvent and support materials and cleanup materials employed, in pounds per day. This calculation is the summation of the product of (4.d or individual HAP content in pounds per gallon) times (4.c or number of gallons per day) for each coating, solvent, support material and cleanup material employed.

   g. The total uncontrolled emission rate of all HAPs collectively from all coatings, solvent and support materials and cleanup materials employed, in pounds per day. This calculation is summation of each individual HAP emission rate, as determined above in 4.f.

   h. The calculated, controlled VOC emission rate for all coatings, solvent and support materials and cleanup materials, in pounds per day. The controlled, daily VOC emission rate shall be calculated using the overall control efficiency for the control equipment as determined during the most recent emission test that demonstrated that the emissions unit was in compliance. The controlled VOC emission rate is the uncontrolled VOC emission rate multiplied by (1 minus the overall control efficiency, in percentage).

   i. The calculated, controlled emission rate for each individual HAP from all coatings, solvent and support materials and cleanup materials, in pounds per day. The controlled



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emission rate shall be calculated using the overall control efficiency for the control equipment as determined during the most recent emission test that demonstrated that the emissions unit was in compliance. The controlled emission rate for each individual HAP is the uncontrolled emission rate multiplied by (1 minus the overall control efficiency, in percentage).

j. The total controlled emission rate of all HAPs collectively from all coatings, solvent and support materials and cleanup materials employed, in pounds per day. This calculation is summation of each individual HAP controlled emission rate, as determined above in 4.i.

5. The permittee shall collect and record the following information each month for emissions units K007, K008, K009, K010, K011, K012, K013, K014, K015, K016 and K017.

a. The controlled emission rate for each individual HAP from all coatings, solvent and support materials and cleanup materials, in pounds per rolling 12 month period. This calculation is the summation of each daily emission rate, as recorded per Section C.4.i, for the past twelve months and then multiplied by ton/2,000 lbs.

b. The controlled emission rate for all HAPs collectively from all coatings, solvent and support materials and cleanup materials, in pounds per rolling 12 month period. This calculation is the summation of each daily emission rate, as recorded per Section C.4.j, for the past twelve months and then multiplied by ton/2,000 lbs.

c. The controlled VOC emission rate for all coatings, solvent and support materials and cleanup materials, in tons per rolling 12 month period. This calculation is the summation of each daily emission rate, as recorded per Section C.4.h, for the past twelve months and then multiplied by ton/2,000 lbs.

d. The coating usage rate as described in Section B.3 in gallons per month.

e. The solvent usage rate as described in Section B.3 in gallons per month.

6. The permit to install for this emissions unit 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 for each pollutant emitted by this emissions unit using data from the permit to install application and the SCREEN 3.0 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 table summarizes the results of the modeling from RTO #1:

| Compound | TLV ($ug.m^3$) | MAGLC = TLV/42 ($ug.m^3$) | Emission rate (g/s) | Predicted 1-hr max ground level conc. ($ug.m^3$) | MAGLC exceeded (Y/N) |
|---|---|---|---|---|---|


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| | | | | | |
|---|---|---|---|---|---|
| formaldehyde | 271 | 6 | 0.0011 | 0.12 | N |
| methanol | 262,086 | 6,240 | 0.23 | 26.43 | N |
| acetone | 1,187,116 | 28,264 | 0.01 | 1.15 | N |
| MEK | 589,775 | 14,042 | 0.32 | 35.88 | N |
| naphthalene | 52,429 | 1,248 | 0.0001 | 0.008 | N |
| cumene | 245,787 | 5,852 | 0.000001 | 0.0001 | N |
| ethylbenzene | 4343,192 | 10,338 | 0.22 | 25.35 | N |
| MIBK | 204,826 | 4,877 | 0.18 | 20.91 | N |
| toluene | 188,405 | 4,486 | 0.57 | 65.11 | N |
| hexane | 1,762,372 | 41,961 | 0.000001 | 0.0001 | N |
| xylene | 434,192 | 10,338 | 1.03 | 116.63 | N |

7. 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 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.).

   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



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(other than (VV)(1)(a)(ii)), then the permittee shall obtain a final permit to install prior to the change(s).

8. 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 satisfied 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 quarterly summaries of the following records:

   a. A log of operating time for the capture (collection) system, control device, monitoring equipment, and the associated emission unit.

   b. All 3-hour blocks of time during which the average combustion temperature within the thermal incinerator does not comply with the temperature limitation specified above.

   c. All periods of time during which the permanent total enclosure was not maintained at the required differential pressure specified above.

   d. A list of all days when the daily VOC emission rate from RTO #1 exceeded 151.8 pounds.

   e. A list of any days when noncomplying coatings were used.

   f. A list of all months when the amount of coatings (including stains, toners, glazes, topcoats and sealers) exceeded 43,196 gallons, and the amount of solvent and support materials exceeded 15,300 gallons.

2. The permittee shall also submit a quarterly deviation report when the total controlled emissions of VOC, individual HAPs, and the total aggregate HAPs from RTO #1 exceed the limits listed in A.2.d and A.2.e respectively.

## E. Testing Requirements

1. The permittee shall conduct, or have conducted, emission testing for this emission unit in accordance with the following requirements:



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a. The emission testing shall be conducted within 3 months after issuance of this permit.

b. The emission testing shall be conducted to demonstrate compliance with the VOC capture efficiency and control efficiency requirement specified in Section A.2.a. Emission testing shall also be conducted to establish the average combustion temperature within the thermal incinerator, as specified in Section B.1, and to establish the minimum pressure differential within the permanent total enclosure, as specified in Section B.2.

c. The test(s) shall be conducted while the emissions units are operating at or near their maximum capacity, unless otherwise specified or approved by the Ohio EPA Northeast District Office.

d. The capture efficiency shall be determined using Methods 204 through 204F, as specified in 40 CFR part 51, Appendix M, or the permittee may request to use an alternative method or procedure for the determination of capture efficiency in accordance with the U.S. EPA's "Guideline for Determining Capture Efficiency," dated January 9, 1995. (The Ohio EPA will consider the request, including an evaluation of the applicability, necessity, and validity of the alternative, and may approve the use of the alternative if such approval does not contravene any other applicable requirement.)

e. The control efficiency (i.e., the percent reduction in mass emissions between the inlet and outlet of the control system) shall be determined in accordance with the test methods and procedures specified in OAC rule 3745-21-10 or an approved alternative test protocol. The test methods and procedures selected shall be based on a consideration of the diversity of the organic species present and their total concentration, and on a consideration of the potential presence of interfering gases.

f. U.S. EPA Method 24 shall be used, in accordance with OAC rule 3745-21-04(B)(5), to determine the VOC contents for all coatings, solvent and support materials, and cleanup materials used during the performance test(s). If, pursuant to section 4.3 of Method 24, 40 CFR part 60, Appendix A, an owner or operator determines that Method 24 cannot be used for a particular coating, solvent and support material, or cleanup material, the permittee shall so notify the Administrator of the U.S. EPA and shall use formulation data for that coating, solvent and support material, or cleanup material to demonstrate compliance until the U.S. EPA provides alternative analytical procedures or alternative precision statements for Method 24.

g. Not later than 30 days prior to the proposed test date(s), the permittee shall submit an "Intent to Test" notification to the Ohio EPA Northeast District Office. The "Intent to Test" notification shall describe in detail the proposed test methods and procedures, the emissions unit operating parameters, the time(s) and date(s) of the test(s), and the person(s) who will be conducting the test(s). Failure to submit such notification for



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review and approval prior to the test(s) may result in the Ohio EPA Northeast District Office's refusal to accept the results of the emission test(s).

Personnel from the Ohio EPA Northeast District Office shall be permitted to witness the test(s), examine the testing equipment, and acquire data and information necessary to ensure that the operation of the emissions unit and the testing procedures provide a valid characterization of the emissions from the emissions unit and/or the performance of the control equipment.

h. A comprehensive written report on the results of the emissions test(s) shall be signed by the person or persons responsible for the tests and submitted to the Ohio EPA Northeast District Office within 30 days following completion of the test(s).

2. Emission Limitation:
151.8 lbs VOC /day and 27.7 tons VOC per rolling 12 month period from RTO #1

Applicable Compliance Method:
Compliance shall be based upon the recordkeeping specified in Section C.4 and C.5.

3. Emission Limitation:
792 lbs/month and 4.75 tons per rolling 12 month period of an individual HAP from RTO #1

Applicable Compliance Method:
Compliance shall be based upon the recordkeeping specified in Section C.5.

4. Emission Limitation:
2,067 lbs/month and 12.4 tons per rolling 12 month period of all HAPs from RTO #1

Applicable Compliance Method:
Compliance shall be based upon the recordkeeping specified in Section C.5.

5. Compliance with the VOC content restrictions of each coating, solvent and support material, and cleanup material shall be based upon the use of U.S. EPA Method 24.

6. Emission Limitation:
0.7 lb NOx/hr and 3.2 tons NOx/year from the combustion of natural gas in the thermal oxidizer.

Applicable Compliance Method:
The following equation shall be used to determine the hourly emission rate.

$$E = EF \times R \times 1/H$$

where:

E = Emission rate, in lbs/hr



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EF = Emission factor (AP-42, Section 1.4) for NOx is 100 lbs/mmcf.

R = Maximum rating of the thermal oxidizer reported to be 7.5 mmBtu/hr.

H = Heating value of the natural gas, in Btu/cf. 1,020 Btu/cf was used in the emission calculation for this permit.

The yearly rate, in tons/year, shall be determined by multiplying the hourly rate (lbs/hr) as calculated above, by (# hrs of operation/year) and (ton/2,000 lbs).

**7.** Emission Limitation:
0.6 lb CO/hr and 2.7 tons CO/year from the combustion of natural gas in the thermal oxidizer.

Applicable Compliance Method:
The following equation shall be used to determine the hourly emission rate.

E = EF x R x 1/H

where:

E = Emission rate, in lbs/hr

EF = Emission factor (AP-42, Section 1.4) for CO is 84 lbs/mmcf.

R = Maximum rating of the thermal oxidizer reported to be 7.5 mmBtu/hr.

H = Heating value of the natural gas, in Btu/cf. 1,020 Btu/cf was used in the emission calculation for this permit.

The yearly rate (tons/year) shall be determined by multiplying the hourly rate (lbs/hr), as calculated above, by (# hrs of operation/year) and (ton/2,000 lbs).

## F. Miscellaneous Requirements

1. In accordance with the provisions of OAC rule 3745-35-07, the following terms and conditions of this permit to install are federally enforceable: A-F, except C.6, C.7 and C.8.

2. The terms and condition of this permit supercede those contained with PTI # 02-12833. The exemption would be that the terms and conditions for F003 (Sawdust Storage Bin #1 Load-out) and F004 (Sawdust Storage Bin #2 Load-out) contained in PTI #02-12833 are still applicable.



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## 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 |
|---|---|---|
| K015 - Off-line speciality booth 1, controlled by regenerative thermal oxidizer No. 1 | OAC rule 3745-35-02(D)<br><br>OAC rule 3745-31-05(A)(3)<br><br>OAC rule 3745-31-07(G)(2) | Volatile Organic Compound (VOC) emissions shall not exceed 151.8 pounds per day.<br><br>Hazardous Air Pollutant (HAP) emissions shall not exceed 792 pounds per month for an individual HAP and 2,067 pounds per month for combined HAPs.<br><br>Nitrogen Oxide (NOx) emissions from the combustion of natural gas from the thermal oxidizer shall not exceed 0.7 pound per hour, 3.2 tons per year.<br><br>Carbon Monoxide (CO) emissions from the combustion of natural gas from the thermal oxidizer shall not exceed 0.6 pound per hour, 2.7 tons per year.<br><br>The requirements of this rule also include compliance with the requirements of OAC rule 3745-35-02(D)<br><br>See Section A.2.a through A.2.c.<br><br>See Section A.2.d and A.2.e. |



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| | |
|---|---|
| | The requirements of this rule are less stringent than the requirements established pursuant to OAC rule 3745-31-05(A)(3). |

**2. Additional Terms and Conditions**

**2.a** The permittee shall design enclosure #1 that will house K007, K008, K009, K010, K011, K012, K013, K014, K015, K016 and K017 in such a manner as to function as a permanent total enclosure (PTE) as defined by U.S. EPA Method 204. The use of the PTE, as defined in Reference Method 204, provides for 100% capture efficiency.

**2.b** The permittee shall install and maintain an incineration system to control the VOC emissions from the permanent total enclosure, PTE #1. The incinerator system shall have a VOC destruction efficiency of at least 99% by weight.

**2.c** The volatile organic compound (VOC) content of the Coatings (including stains, toners, glazes, topcoats and sealers) and Solvents & Support Materials used by the permittee at this facility shall not exceed the following VOC content, minus water:

| | |
|---|---|
| Coatings | 7.5 lbs VOC/gallon |
| Solvents & Support Materials | 9.0 lbs VOC/gallon |

**2.d** Emissions from the Regenerative Thermal Oxidizer (RTO) #1 shall be restricted in such a manner to limit emissions from emissions units K007, K008, K009, K010, K011, K012, K013, K014, K015, K016 and K017 to the following:

i. 27.7 tons VOC per rolling 12 month period
ii. 4.75 tons per rolling 12 month period of any individual HAP
iii. 12.4 tons per rolling 12 month period of total aggregate HAPs

**2.e** Emissions from the entire facility shall not exceed the following limits:

i. 55.4 tons VOC per rolling 12 month period
ii. 9.5 tons per rolling 12 month period of any individual HAP
iii. 24.8 tons per rolling 12 month period of total aggregate HAPs

**B. Operational Restrictions**

1. The average combustion temperature within RTO #1, for any 3-hour block of time when an associated emissions unit is in operation, shall not be more than 50 degrees Fahrenheit below the average temperature during the most recent emission test that demonstrated the RTO system was in compliance with the destruction efficiency requirement.



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2. The permanent total enclosure shall be maintained under negative pressure, at a minimum pressure differential that is not less than the minimum pressure differential (inches of water) established during the most recent emission test that demonstrated the emissions unit was in compliance or 0.007 inches of water as established in Method 204, whenever the emissions unit is in operation.

3. The permittee shall limit the total coating and solvent usage for PTE #1 (K007, K008, K009, K010, K011, K012, K013, K014, K015, K016 and K017) as follows:

| | |
|---|---|
| Coatings (including stains, toners, glazes, topcoats and sealers) | 43,196 gallons/month |
| Solvents & Support Materials | 15,300 gallons/month |

## C. Monitoring and/or Recordkeeping Requirements

1. The permittee shall install, maintain and operate monitoring devices and a recorder which simultaneously measure and record the pressure inside and outside the permanent total enclosure.

   The monitoring and recording devices 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 following information on a daily basis:

   a. The difference in pressure between the permanent total enclosure and the surrounding area(s).

   b. A log or record of operating time for the capture (collection) system, control device, monitoring equipment, and the associated emissions unit.

2. The permittee shall operate and maintain a continuous temperature monitor and recorder which measures and records the combustion temperature within the thermal incinerator when the emissions unit is in operation. Units shall be in degrees Fahrenheit. The monitoring and recording devices shall be capable of accurately measuring the desired parameter. The temperature monitor and recorder shall be installed, calibrated, operated and maintained in accordance with the manufacturer's recommendations, with any modifications deemed necessary by the permittee.

3. The permittee shall collect and record the following information for each day for RTO #1:

   a. A log of operating time for the capture (collection) system, control device, monitoring equipment, and the associated emissions units.

   b. All 3-hour blocks of time during which the average combustion temperature within the thermal incinerator, when any of the associated emissions unit was in operation, was more than 50 degrees Fahrenheit below the average temperature during the most recent


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emission test that demonstrated the incinerator system was in compliance with the destruction efficiency requirement.

4. The permittee shall collect and record the following information each day for emissions units K007, K008, K009, K010, K011, K012, K013, K014, K015, K016 and K017.

   a. The name and identification number of each coating, solvent and support material, and cleanup material, as applied.

   b. The VOC content of each coating, solvent and support material, and cleanup material, as applied, in pounds per gallon and in pounds per gallon excluding water and exempt solvents.

   c. The number of gallons of each coating, solvent and support material, and cleanup material employed.

   d. The content of each individual HAP (i.e. xylene, toluene, and any other HAP) in each coating, solvent and support material and cleanup material employed, in pounds per gallon.

   e. The total uncontrolled VOC emission rate for all coatings, solvent and support materials, and cleanup materials employed, in pounds per day. This calculation is the summation of the product of (4.b or VOC content in pounds per gallon) times (4.c or number of gallons per day) for each coating, solvent, support material and cleanup material employed.

   f. The total uncontrolled emission rate for each individual HAP from all coatings, solvent and support materials and cleanup materials employed, in pounds per day. This calculation is the summation of the product of (4.d or individual HAP content in pounds per gallon) times (4.c or number of gallons per day) for each coating, solvent, support material and cleanup material employed.

   g. The total uncontrolled emission rate of all HAPs collectively from all coatings, solvent and support materials and cleanup materials employed, in pounds per day. This calculation is summation of each individual HAP emission rate, as determined above in 4.f.

   h. The calculated, controlled VOC emission rate for all coatings, solvent and support materials and cleanup materials, in pounds per day. The controlled, daily VOC emission rate shall be calculated using the overall control efficiency for the control equipment as determined during the most recent emission test that demonstrated that the emissions unit was in compliance. The controlled VOC emission rate is the uncontrolled VOC emission rate multiplied by (1 minus the overall control efficiency, in percentage).

   i. The calculated, controlled emission rate for each individual HAP from all coatings, solvent and support materials and cleanup materials, in pounds per day. The controlled



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emission rate shall be calculated using the overall control efficiency for the control equipment as determined during the most recent emission test that demonstrated that the emissions unit was in compliance. The controlled emission rate for each individual HAP is the uncontrolled emission rate multiplied by (1 minus the overall control efficiency, in percentage).

j. The total controlled emission rate of all HAPs collectively from all coatings, solvent and support materials and cleanup materials employed, in pounds per day. This calculation is summation of each individual HAP controlled emission rate, as determined above in 4.i.

5. The permittee shall collect and record the following information each month for emissions units K007, K008, K009, K010, K011, K012, K013, K014, K015, K016 and K017.

a. The controlled emission rate for each individual HAP from all coatings, solvent and support materials and cleanup materials, in pounds per rolling 12 month period. This calculation is the summation of each daily emission rate, as recorded per Section C.4.i, for the past twelve months and then multiplied by ton/2,000 lbs.

b. The controlled emission rate for all HAPs collectively from all coatings, solvent and support materials and cleanup materials, in pounds per rolling 12 month period. This calculation is the summation of each daily emission rate, as recorded per Section C.4.j, for the past twelve months and then multiplied by ton/2,000 lbs.

c. The controlled VOC emission rate for all coatings, solvent and support materials and cleanup materials, in tons per rolling 12 month period. This calculation is the summation of each daily emission rate, as recorded per Section C.4.h, for the past twelve months and then multiplied by ton/2,000 lbs.

d. The coating usage rate as described in Section B.3 in gallons per month.

e. The solvent usage rate as described in Section B.3 in gallons per month.

6. The permit to install for this emissions unit 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 for each pollutant emitted by this emissions unit using data from the permit to install application and the SCREEN 3.0 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 table summarizes the results of the modeling from RTO #1:

| Compound | TLV ($ug.m^3$) | MAGLC = TLV/42 ($ug.m^3$) | Emission rate (g/s) | Predicted 1-hr max ground level conc. ($ug.m^3$) | MAGLC exceeded (Y/N) |
|---|---|---|---|---|---|



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| | | | | | |
|---|---|---|---|---|---|
| formaldehyde | 271 | 6 | 0.0011 | 0.12 | N |
| methanol | 262,086 | 6,240 | 0.23 | 26.43 | N |
| acetone | 1,187,116 | 28,264 | 0.01 | 1.15 | N |
| MEK | 589,775 | 14,042 | 0.32 | 35.88 | N |
| naphthalene | 52,429 | 1,248 | 0.0001 | 0.008 | N |
| cumene | 245,787 | 5,852 | 0.000001 | 0.0001 | N |
| ethylbenzene | 4343,192 | 10,338 | 0.22 | 25.35 | N |
| MIBK | 204,826 | 4,877 | 0.18 | 20.91 | N |
| toluene | 188,405 | 4,486 | 0.57 | 65.11 | N |
| hexane | 1,762,372 | 41,961 | 0.000001 | 0.0001 | N |
| xylene | 434,192 | 10,338 | 1.03 | 116.63 | N |

7. 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 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.).

   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



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(other than (VV)(1)(a)(ii)), then the permittee shall obtain a final permit to install prior to the change(s).

8. 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 satisfied 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 quarterly summaries of the following records:

   a. A log of operating time for the capture (collection) system, control device, monitoring equipment, and the associated emission unit.

   b. All 3-hour blocks of time during which the average combustion temperature within the thermal incinerator does not comply with the temperature limitation specified above.

   c. All periods of time during which the permanent total enclosure was not maintained at the required differential pressure specified above.

   d. A list of all days when the daily VOC emission rate from RTO #1 exceeded 151.8 pounds.

   e. A list of any days when noncomplying coatings were used.

   f. A list of all months when the amount of coatings (including stains, toners, glazes, topcoats and sealers) exceeded 43,196 gallons, and the amount of solvent and support materials exceeded 15,300 gallons.

2. The permittee shall also submit a quarterly deviation report when the total controlled emissions of VOC, individual HAPs, and the total aggregate HAPs from RTO #1 exceed the limits listed in A.2.d and A.2.e respectively.

## E. Testing Requirements

1. The permittee shall conduct, or have conducted, emission testing for this emission unit in accordance with the following requirements:



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a. The emission testing shall be conducted within 3 months after issuance of this permit.

b. The emission testing shall be conducted to demonstrate compliance with the VOC capture efficiency and control efficiency requirement specified in Section A.2.a. Emission testing shall also be conducted to establish the average combustion temperature within the thermal incinerator, as specified in Section B.1, and to establish the minimum pressure differential within the permanent total enclosure, as specified in Section B.2.

c. The test(s) shall be conducted while the emissions units are operating at or near their maximum capacity, unless otherwise specified or approved by the Ohio EPA Northeast District Office.

d. The capture efficiency shall be determined using Methods 204 through 204F, as specified in 40 CFR part 51, Appendix M, or the permittee may request to use an alternative method or procedure for the determination of capture efficiency in accordance with the U.S. EPA's "Guideline for Determining Capture Efficiency," dated January 9, 1995. (The Ohio EPA will consider the request, including an evaluation of the applicability, necessity, and validity of the alternative, and may approve the use of the alternative if such approval does not contravene any other applicable requirement.)

e. The control efficiency (i.e., the percent reduction in mass emissions between the inlet and outlet of the control system) shall be determined in accordance with the test methods and procedures specified in OAC rule 3745-21-10 or an approved alternative test protocol. The test methods and procedures selected shall be based on a consideration of the diversity of the organic species present and their total concentration, and on a consideration of the potential presence of interfering gases.

f. U.S. EPA Method 24 shall be used, in accordance with OAC rule 3745-21-04(B)(5), to determine the VOC contents for all coatings, solvent and support materials, and cleanup materials used during the performance test(s). If, pursuant to section 4.3 of Method 24, 40 CFR part 60, Appendix A, an owner or operator determines that Method 24 cannot be used for a particular coating, solvent and support material, or cleanup material, the permittee shall so notify the Administrator of the U.S. EPA and shall use formulation data for that coating, solvent and support material, or cleanup material to demonstrate compliance until the U.S. EPA provides alternative analytical procedures or alternative precision statements for Method 24.

g. Not later than 30 days prior to the proposed test date(s), the permittee shall submit an "Intent to Test" notification to the Ohio EPA Northeast District Office. The "Intent to Test" notification shall describe in detail the proposed test methods and procedures, the emissions unit operating parameters, the time(s) and date(s) of the test(s), and the person(s) who will be conducting the test(s). Failure to submit such notification for



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review and approval prior to the test(s) may result in the Ohio EPA Northeast District Office's refusal to accept the results of the emission test(s).

Personnel from the Ohio EPA Northeast District Office shall be permitted to witness the test(s), examine the testing equipment, and acquire data and information necessary to ensure that the operation of the emissions unit and the testing procedures provide a valid characterization of the emissions from the emissions unit and/or the performance of the control equipment.

h. A comprehensive written report on the results of the emissions test(s) shall be signed by the person or persons responsible for the tests and submitted to the Ohio EPA Northeast District Office within 30 days following completion of the test(s).

2. Emission Limitation:
151.8 lbs VOC /day and 27.7 tons VOC per rolling 12 month period from RTO #1

Applicable Compliance Method:
Compliance shall be based upon the recordkeeping specified in Section C.4 and C.5.

3. Emission Limitation:
792 lbs/month and 4.75 tons per rolling 12 month period of an individual HAP from RTO #1

Applicable Compliance Method:
Compliance shall be based upon the recordkeeping specified in Section C.5.

4. Emission Limitation:
2,067 lbs/month and 12.4 tons per rolling 12 month period of all HAPs from RTO #1

Applicable Compliance Method:
Compliance shall be based upon the recordkeeping specified in Section C.5.

5. Compliance with the VOC content restrictions of each coating, solvent and support material, and cleanup material shall be based upon the use of U.S. EPA Method 24.

6. Emission Limitation:
0.7 lb NOx/hr and 3.2 tons NOx/year from the combustion of natural gas in the thermal oxidizer.

Applicable Compliance Method:
The following equation shall be used to determine the hourly emission rate.

$$E = EF \times R \times 1/H$$

where:

E = Emission rate, in lbs/hr



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EF = Emission factor (AP-42, Section 1.4) for NOx is 100 lbs/mmcf.

R = Maximum rating of the thermal oxidizer reported to be 7.5 mmBtu/hr.

H = Heating value of the natural gas, in Btu/cf. 1,020 Btu/cf was used in the emission calculation for this permit.

The yearly rate, in tons/year, shall be determined by multiplying the hourly rate (lbs/hr) as calculated above, by (# hrs of operation/year) and (ton/2,000 lbs).

**7.** Emission Limitation:
0.6 lb CO/hr and 2.7 tons CO/year from the combustion of natural gas in the thermal oxidizer.

Applicable Compliance Method:
The following equation shall be used to determine the hourly emission rate.

E = EF x R x 1/H

where:

E = Emission rate, in lbs/hr

EF = Emission factor (AP-42, Section 1.4) for CO is 84 lbs/mmcf.

R = Maximum rating of the thermal oxidizer reported to be 7.5 mmBtu/hr.

H = Heating value of the natural gas, in Btu/cf. 1,020 Btu/cf was used in the emission calculation for this permit.

The yearly rate (tons/year) shall be determined by multiplying the hourly rate (lbs/hr), as calculated above, by (# hrs of operation/year) and (ton/2,000 lbs).

## F. Miscellaneous Requirements

1. In accordance with the provisions of OAC rule 3745-35-07, the following terms and conditions of this permit to install are federally enforceable: A-F, except C.6, C.7 and C.8.

2. The terms and condition of this permit supercede those contained with PTI # 02-12833. The exemption would be that the terms and conditions for F003 (Sawdust Storage Bin #1 Load-out) and F004 (Sawdust Storage Bin #2 Load-out) contained in PTI #02-12833 are still applicable.



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## 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 |
|---|---|---|
| K016 - Cefla 3 consisting of two spray booths and two ovens, controlled by regernative thermal oxidizer No. 1 | OAC rule 3745-31-05(A)(3) | Volatile Organic Compound (VOC) emissions shall not exceed 151.8 pounds per day.<br><br>Hazardous Air Pollutant (HAP) emissions shall not exceed 792 pounds per month for an individual HAP and 2,067 pounds per month for combined HAPs.<br><br>Nitrogen Oxide (NOx) emissions from the combustion of natural gas from the thermal oxidizer shall not exceed 0.7 pound per hour, 3.2 tons per year.<br><br>Carbon Monoxide (CO) emissions from the combustion of natural gas from the thermal oxidizer shall not exceed 0.6 pound per hour, 2.7 tons per year.<br><br>The requirements of this rule also include compliance with the requirements of OAC rule 3745-35-02(D) |
| | OAC rule 3745-35-07(B) | See Section A.2.a through A.2.c. |
| | OAC rule 3745-21-07(G)(2) | See Section A.2.d and A.2.e. |



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| | |
|---|---|
| | The requirements of this rule are less stringent than the requirements established pursuant to OAC rule 3745-31-05(A)(3). |

**2. Additional Terms and Conditions**

**2.a** The permittee shall design enclosure #1 that will house K007, K008, K009, K010, K011, K012, K013, K014, K015, K016 and K017 in such a manner as to function as a permanent total enclosure (PTE) as defined by U.S. EPA Method 204. The use of the PTE, as defined in Reference Method 204, provides for 100% capture efficiency.

**2.b** The permittee shall install and maintain an incineration system to control the VOC emissions from the permanent total enclosure, PTE #1. The incinerator system shall have a VOC destruction efficiency of at least 99% by weight.

**2.c** The volatile organic compound (VOC) content of the Coatings (including stains, toners, glazes, topcoats and sealers) and Solvents & Support Materials used by the permittee at this facility shall not exceed the following VOC content, minus water:

| | |
|---|---|
| Coatings | 7.5 lbs VOC/gallon |
| Solvents & Support Materials | 9.0 lbs VOC/gallon |

**2.d** Emissions from the Regenerative Thermal Oxidizer (RTO) #1 shall be restricted in such a manner to limit emissions from emissions units K007, K008, K009, K010, K011, K012, K013, K014, K015, K016 and K017 to the following:

i. 27.7 tons VOC per rolling 12 month period
ii. 4.75 tons per rolling 12 month period of any individual HAP
iii. 12.4 tons per rolling 12 month period of total aggregate HAPs

**2.e** Emissions from the entire facility shall not exceed the following limits:

i. 55.4 tons VOC per rolling 12 month period
ii. 9.5 tons per rolling 12 month period of any individual HAP
iii. 24.8 tons per rolling 12 month period of total aggregate HAPs

**B. Operational Restrictions**

1. The average combustion temperature within RTO #1, for any 3-hour block of time when an associated emissions unit is in operation, shall not be more than 50 degrees Fahrenheit below the average temperature during the most recent emission test that demonstrated the RTO system was in compliance with the destruction efficiency requirement.



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2. The permanent total enclosure shall be maintained under negative pressure, at a minimum pressure differential that is not less than the minimum pressure differential (inches of water) established during the most recent emission test that demonstrated the emissions unit was in compliance or 0.007 inches of water as established in Method 204, whenever the emissions unit is in operation.

3. The permittee shall limit the total coating and solvent usage for PTE #1 (K007, K008, K009, K010, K011, K012, K013, K014, K015, K016 and K017) as follows:

| | |
|---|---|
| Coatings (including stains, toners, glazes, topcoats and sealers) | 43,196 gallons/month |
| Solvents & Support Materials | 15,300 gallons/month |

## C. Monitoring and/or Recordkeeping Requirements

1. The permittee shall install, maintain and operate monitoring devices and a recorder which simultaneously measure and record the pressure inside and outside the permanent total enclosure.

   The monitoring and recording devices 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 following information on a daily basis:

   a. The difference in pressure between the permanent total enclosure and the surrounding area(s).

   b. A log or record of operating time for the capture (collection) system, control device, monitoring equipment, and the associated emissions unit.

2. The permittee shall operate and maintain a continuous temperature monitor and recorder which measures and records the combustion temperature within the thermal incinerator when the emissions unit is in operation. Units shall be in degrees Fahrenheit. The monitoring and recording devices shall be capable of accurately measuring the desired parameter. The temperature monitor and recorder shall be installed, calibrated, operated and maintained in accordance with the manufacturer's recommendations, with any modifications deemed necessary by the permittee.

3. The permittee shall collect and record the following information for each day for RTO #1:

   a. A log of operating time for the capture (collection) system, control device, monitoring equipment, and the associated emissions units.

   b. All 3-hour blocks of time during which the average combustion temperature within the thermal incinerator, when any of the associated emissions unit was in operation, was more than 50 degrees Fahrenheit below the average temperature during the most recent


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emission test that demonstrated the incinerator system was in compliance with the destruction efficiency requirement.

4. The permittee shall collect and record the following information each day for emissions units K007, K008, K009, K010, K011, K012, K013, K014, K015, K016 and K017.

   a. The name and identification number of each coating, solvent and support material, and cleanup material, as applied.

   b. The VOC content of each coating, solvent and support material, and cleanup material, as applied, in pounds per gallon and in pounds per gallon excluding water and exempt solvents.

   c. The number of gallons of each coating, solvent and support material, and cleanup material employed.

   d. The content of each individual HAP (i.e. xylene, toluene, and any other HAP) in each coating, solvent and support material and cleanup material employed, in pounds per gallon.

   e. The total uncontrolled VOC emission rate for all coatings, solvent and support materials, and cleanup materials employed, in pounds per day. This calculation is the summation of the product of (4.b or VOC content in pounds per gallon) times (4.c or number of gallons per day) for each coating, solvent, support material and cleanup material employed.

   f. The total uncontrolled emission rate for each individual HAP from all coatings, solvent and support materials and cleanup materials employed, in pounds per day. This calculation is the summation of the product of (4.d or individual HAP content in pounds per gallon) times (4.c or number of gallons per day) for each coating, solvent, support material and cleanup material employed.

   g. The total uncontrolled emission rate of all HAPs collectively from all coatings, solvent and support materials and cleanup materials employed, in pounds per day. This calculation is summation of each individual HAP emission rate, as determined above in 4.f.

   h. The calculated, controlled VOC emission rate for all coatings, solvent and support materials and cleanup materials, in pounds per day. The controlled, daily VOC emission rate shall be calculated using the overall control efficiency for the control equipment as determined during the most recent emission test that demonstrated that the emissions unit was in compliance. The controlled VOC emission rate is the uncontrolled VOC emission rate multiplied by (1 minus the overall control efficiency, in percentage).

   i. The calculated, controlled emission rate for each individual HAP from all coatings, solvent and support materials and cleanup materials, in pounds per day. The controlled



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emission rate shall be calculated using the overall control efficiency for the control equipment as determined during the most recent emission test that demonstrated that the emissions unit was in compliance. The controlled emission rate for each individual HAP is the uncontrolled emission rate multiplied by (1 minus the overall control efficiency, in percentage).

j. The total controlled emission rate of all HAPs collectively from all coatings, solvent and support materials and cleanup materials employed, in pounds per day. This calculation is summation of each individual HAP controlled emission rate, as determined above in 4.i.

5. The permittee shall collect and record the following information each month for emissions units K007, K008, K009, K010, K011, K012, K013, K014, K015, K016 and K017.

a. The controlled emission rate for each individual HAP from all coatings, solvent and support materials and cleanup materials, in pounds per rolling 12 month period. This calculation is the summation of each daily emission rate, as recorded per Section C.4.i, for the past twelve months and then multiplied by ton/2,000 lbs.

b. The controlled emission rate for all HAPs collectively from all coatings, solvent and support materials and cleanup materials, in pounds per rolling 12 month period. This calculation is the summation of each daily emission rate, as recorded per Section C.4.j, for the past twelve months and then multiplied by ton/2,000 lbs.

c. The controlled VOC emission rate for all coatings, solvent and support materials and cleanup materials, in tons per rolling 12 month period. This calculation is the summation of each daily emission rate, as recorded per Section C.4.h, for the past twelve months and then multiplied by ton/2,000 lbs.

d. The coating usage rate as described in Section B.3 in gallons per month.

e. The solvent usage rate as described in Section B.3 in gallons per month.

6. The permit to install for this emissions unit 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 for each pollutant emitted by this emissions unit using data from the permit to install application and the SCREEN 3.0 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 table summarizes the results of the modeling from RTO #1:

| Compound | TLV ($ug.m^3$) | MAGLC = TLV/42 ($ug.m^3$) | Emission rate (g/s) | Predicted 1-hr max ground level conc. ($ug.m^3$) | MAGLC exceeded (Y/N) |
|---|---|---|---|---|---|


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| | | | | | |
|---|---|---|---|---|---|
| formaldehyde | 271 | 6 | 0.0011 | 0.12 | N |
| methanol | 262,086 | 6,240 | 0.23 | 26.43 | N |
| acetone | 1,187,116 | 28,264 | 0.01 | 1.15 | N |
| MEK | 589,775 | 14,042 | 0.32 | 35.88 | N |
| naphthalene | 52,429 | 1,248 | 0.0001 | 0.008 | N |
| cumene | 245,787 | 5,852 | 0.000001 | 0.0001 | N |
| ethylbenzene | 4343,192 | 10,338 | 0.22 | 25.35 | N |
| MIBK | 204,826 | 4,877 | 0.18 | 20.91 | N |
| toluene | 188,405 | 4,486 | 0.57 | 65.11 | N |
| hexane | 1,762,372 | 41,961 | 0.000001 | 0.0001 | N |
| xylene | 434,192 | 10,338 | 1.03 | 116.63 | N |

7. 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 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.).

   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



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(other than (VV)(1)(a)(ii)), then the permittee shall obtain a final permit to install prior to the change(s).

8. 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 satisfied 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 quarterly summaries of the following records:

   a. A log of operating time for the capture (collection) system, control device, monitoring equipment, and the associated emission unit.

   b. All 3-hour blocks of time during which the average combustion temperature within the thermal incinerator does not comply with the temperature limitation specified above.

   c. All periods of time during which the permanent total enclosure was not maintained at the required differential pressure specified above.

   d. A list of all days when the daily VOC emission rate from RTO #1 exceeded 151.8 pounds.

   e. A list of any days when noncomplying coatings were used.

   f. A list of all months when the amount of coatings (including stains, toners, glazes, topcoats and sealers) exceeded 43,196 gallons, and the amount of solvent and support materials exceeded 15,300 gallons.

2. The permittee shall also submit a quarterly deviation report when the total controlled emissions of VOC, individual HAPs, and the total aggregate HAPs from RTO #1 exceed the limits listed in A.2.d and A.2.e respectively.

## E. Testing Requirements

1. The permittee shall conduct, or have conducted, emission testing for this emission unit in accordance with the following requirements:



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a. The emission testing shall be conducted within 3 months after issuance of this permit.

b. The emission testing shall be conducted to demonstrate compliance with the VOC capture efficiency and control efficiency requirement specified in Section A.2.a. Emission testing shall also be conducted to establish the average combustion temperature within the thermal incinerator, as specified in Section B.1, and to establish the minimum pressure differential within the permanent total enclosure, as specified in Section B.2.

c. The test(s) shall be conducted while the emissions units are operating at or near their maximum capacity, unless otherwise specified or approved by the Ohio EPA Northeast District Office.

d. The capture efficiency shall be determined using Methods 204 through 204F, as specified in 40 CFR part 51, Appendix M, or the permittee may request to use an alternative method or procedure for the determination of capture efficiency in accordance with the U.S. EPA's "Guideline for Determining Capture Efficiency," dated January 9, 1995. (The Ohio EPA will consider the request, including an evaluation of the applicability, necessity, and validity of the alternative, and may approve the use of the alternative if such approval does not contravene any other applicable requirement.)

e. The control efficiency (i.e., the percent reduction in mass emissions between the inlet and outlet of the control system) shall be determined in accordance with the test methods and procedures specified in OAC rule 3745-21-10 or an approved alternative test protocol. The test methods and procedures selected shall be based on a consideration of the diversity of the organic species present and their total concentration, and on a consideration of the potential presence of interfering gases.

f. U.S. EPA Method 24 shall be used, in accordance with OAC rule 3745-21-04(B)(5), to determine the VOC contents for all coatings, solvent and support materials, and cleanup materials used during the performance test(s). If, pursuant to section 4.3 of Method 24, 40 CFR part 60, Appendix A, an owner or operator determines that Method 24 cannot be used for a particular coating, solvent and support material, or cleanup material, the permittee shall so notify the Administrator of the U.S. EPA and shall use formulation data for that coating, solvent and support material, or cleanup material to demonstrate compliance until the U.S. EPA provides alternative analytical procedures or alternative precision statements for Method 24.

g. Not later than 30 days prior to the proposed test date(s), the permittee shall submit an "Intent to Test" notification to the Ohio EPA Northeast District Office. The "Intent to Test" notification shall describe in detail the proposed test methods and procedures, the emissions unit operating parameters, the time(s) and date(s) of the test(s), and the person(s) who will be conducting the test(s). Failure to submit such notification for



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review and approval prior to the test(s) may result in the Ohio EPA Northeast District Office's refusal to accept the results of the emission test(s).

Personnel from the Ohio EPA Northeast District Office shall be permitted to witness the test(s), examine the testing equipment, and acquire data and information necessary to ensure that the operation of the emissions unit and the testing procedures provide a valid characterization of the emissions from the emissions unit and/or the performance of the control equipment.

h. A comprehensive written report on the results of the emissions test(s) shall be signed by the person or persons responsible for the tests and submitted to the Ohio EPA Northeast District Office within 30 days following completion of the test(s).

2. Emission Limitation:
151.8 lbs VOC /day and 27.7 tons VOC per rolling 12 month period from RTO #1

Applicable Compliance Method:
Compliance shall be based upon the recordkeeping specified in Section C.4 and C.5.

3. Emission Limitation:
792 lbs/month and 4.75 tons per rolling 12 month period of an individual HAP from RTO #1

Applicable Compliance Method:
Compliance shall be based upon the recordkeeping specified in Section C.5.

4. Emission Limitation:
2,067 lbs/month and 12.4 tons per rolling 12 month period of all HAPs from RTO #1

Applicable Compliance Method:
Compliance shall be based upon the recordkeeping specified in Section C.5.

5. Compliance with the VOC content restrictions of each coating, solvent and support material, and cleanup material shall be based upon the use of U.S. EPA Method 24.

6. Emission Limitation:
0.7 lb NOx/hr and 3.2 tons NOx/year from the combustion of natural gas in the thermal oxidizer.

Applicable Compliance Method:
The following equation shall be used to determine the hourly emission rate.

$$E = EF \times R \times 1/H$$

where:

E = Emission rate, in lbs/hr



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EF = Emission factor (AP-42, Section 1.4) for NOx is 100 lbs/mmcf.

R = Maximum rating of the thermal oxidizer reported to be 7.5 mmBtu/hr.

H = Heating value of the natural gas, in Btu/cf. 1,020 Btu/cf was used in the emission calculation for this permit.

The yearly rate, in tons/year, shall be determined by multiplying the hourly rate (lbs/hr) as calculated above, by (# hrs of operation/year) and (ton/2,000 lbs).

**7.** Emission Limitation:
0.6 lb CO/hr and 2.7 tons CO/year from the combustion of natural gas in the thermal oxidizer.

Applicable Compliance Method:
The following equation shall be used to determine the hourly emission rate.

E = EF x R x 1/H

where:

E = Emission rate, in lbs/hr

EF = Emission factor (AP-42, Section 1.4) for CO is 84 lbs/mmcf.

R = Maximum rating of the thermal oxidizer reported to be 7.5 mmBtu/hr.

H = Heating value of the natural gas, in Btu/cf. 1,020 Btu/cf was used in the emission calculation for this permit.

The yearly rate (tons/year) shall be determined by multiplying the hourly rate (lbs/hr), as calculated above, by (# hrs of operation/year) and (ton/2,000 lbs).

## F. Miscellaneous Requirements

1. In accordance with the provisions of OAC rule 3745-35-07, the following terms and conditions of this permit to install are federally enforceable: A-F, except C.6, C.7 and C.8.

2. The terms and condition of this permit supercede those contained with PTI # 02-12833. The exemption would be that the terms and conditions for F003 (Sawdust Storage Bin #1 Load-out) and F004 (Sawdust Storage Bin #2 Load-out) contained in PTI #02-12833 are still applicable.



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## 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 |
|---|---|---|
| K017 - Glazing booth and oven No. 1, controlled by regenerative thermal oxidizer No. 1 | OAC rule 3745-31-05(A)(3) | Volatile Organic Compound (VOC) emissions shall not exceed 151.8 pounds per day.<br><br>Hazardous Air Pollutant (HAP) emissions shall not exceed 792 pounds per month for an individual HAP and 2,067 pounds per month for combined HAPs.<br><br>Nitrogen Oxide (NOx) emissions from the combustion of natural gas from the thermal oxidizer shall not exceed 0.7 pound per hour, 3.2 tons per year.<br><br>Carbon Monoxide (CO) emissions from the combustion of natural gas from the thermal oxidizer shall not exceed 0.6 pound per hour, 2.7 tons per year.<br><br>The requirements of this rule also include compliance with the requirements of OAC rule 3745-35-02(D) |
| | OAC rule 3745-35-07(B) | See Section A.2.a through A.2.c. |
| | OAC rule 3745-21-07(G)(2) | See Section A.2.d and A.2.e. |



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| | |
|---|---|
| | The requirements of this rule are less stringent than the requirements established pursuant to OAC rule 3745-31-05(A)(3). |

**2. Additional Terms and Conditions**

**2.a** The permittee shall design enclosure #1 that will house K007, K008, K009, K010, K011, K012, K013, K014, K015, K016 and K017 in such a manner as to function as a permanent total enclosure (PTE) as defined by U.S. EPA Method 204. The use of the PTE, as defined in Reference Method 204, provides for 100% capture efficiency.

**2.b** The permittee shall install and maintain an incineration system to control the VOC emissions from the permanent total enclosure, PTE #1. The incinerator system shall have a VOC destruction efficiency of at least 99% by weight.

**2.c** The volatile organic compound (VOC) content of the Coatings (including stains, toners, glazes, topcoats and sealers) and Solvents & Support Materials used by the permittee at this facility shall not exceed the following VOC content, minus water:

| | |
|---|---|
| Coatings | 7.5 lbs VOC/gallon |
| Solvents & Support Materials | 9.0 lbs VOC/gallon |

**2.d** Emissions from the Regenerative Thermal Oxidizer (RTO) #1 shall be restricted in such a manner to limit emissions from emissions units K007, K008, K009, K010, K011, K012, K013, K014, K015, K016 and K017 to the following:

i. 27.7 tons VOC per rolling 12 month period
ii. 4.75 tons per rolling 12 month period of any individual HAP
iii. 12.4 tons per rolling 12 month period of total aggregate HAPs

**2.e** Emissions from the entire facility shall not exceed the following limits:

i. 55.4 tons VOC per rolling 12 month period
ii. 9.5 tons per rolling 12 month period of any individual HAP
iii. 24.8 tons per rolling 12 month period of total aggregate HAPs

**B. Operational Restrictions**

1. The average combustion temperature within RTO #1, for any 3-hour block of time when an associated emissions unit is in operation, shall not be more than 50 degrees Fahrenheit below the average temperature during the most recent emission test that demonstrated the RTO system was in compliance with the destruction efficiency requirement.



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2. The permanent total enclosure shall be maintained under negative pressure, at a minimum pressure differential that is not less than the minimum pressure differential (inches of water) established during the most recent emission test that demonstrated the emissions unit was in compliance or 0.007 inches of water as established in Method 204, whenever the emissions unit is in operation.

3. The permittee shall limit the total coating and solvent usage for PTE #1 (K007, K008, K009, K010, K011, K012, K013, K014, K015, K016 and K017) as follows:

| | |
|---|---|
| Coatings (including stains, toners, glazes, topcoats and sealers) | 43,196 gallons/month |
| Solvents & Support Materials | 15,300 gallons/month |

**C. Monitoring and/or Recordkeeping Requirements**

1. The permittee shall install, maintain and operate monitoring devices and a recorder which simultaneously measure and record the pressure inside and outside the permanent total enclosure.

   The monitoring and recording devices 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 following information on a daily basis:

   a. The difference in pressure between the permanent total enclosure and the surrounding area(s).

   b. A log or record of operating time for the capture (collection) system, control device, monitoring equipment, and the associated emissions unit.

2. The permittee shall operate and maintain a continuous temperature monitor and recorder which measures and records the combustion temperature within the thermal incinerator when the emissions unit is in operation. Units shall be in degrees Fahrenheit. The monitoring and recording devices shall be capable of accurately measuring the desired parameter. The temperature monitor and recorder shall be installed, calibrated, operated and maintained in accordance with the manufacturer's recommendations, with any modifications deemed necessary by the permittee.

3. The permittee shall collect and record the following information for each day for RTO #1:

   a. A log of operating time for the capture (collection) system, control device, monitoring equipment, and the associated emissions units.

   b. All 3-hour blocks of time during which the average combustion temperature within the thermal incinerator, when any of the associated emissions unit was in operation, was more than 50 degrees Fahrenheit below the average temperature during the most recent


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emission test that demonstrated the incinerator system was in compliance with the destruction efficiency requirement.

4. The permittee shall collect and record the following information each day for emissions units K007, K008, K009, K010, K011, K012, K013, K014, K015, K016 and K017.

   a. The name and identification number of each coating, solvent and support material, and cleanup material, as applied.

   b. The VOC content of each coating, solvent and support material, and cleanup material, as applied, in pounds per gallon and in pounds per gallon excluding water and exempt solvents.

   c. The number of gallons of each coating, solvent and support material, and cleanup material employed.

   d. The content of each individual HAP (i.e. xylene, toluene, and any other HAP) in each coating, solvent and support material and cleanup material employed, in pounds per gallon.

   e. The total uncontrolled VOC emission rate for all coatings, solvent and support materials, and cleanup materials employed, in pounds per day. This calculation is the summation of the product of (4.b or VOC content in pounds per gallon) times (4.c or number of gallons per day) for each coating, solvent, support material and cleanup material employed.

   f. The total uncontrolled emission rate for each individual HAP from all coatings, solvent and support materials and cleanup materials employed, in pounds per day. This calculation is the summation of the product of (4.d or individual HAP content in pounds per gallon) times (4.c or number of gallons per day) for each coating, solvent, support material and cleanup material employed.

   g. The total uncontrolled emission rate of all HAPs collectively from all coatings, solvent and support materials and cleanup materials employed, in pounds per day. This calculation is summation of each individual HAP emission rate, as determined above in 4.f.

   h. The calculated, controlled VOC emission rate for all coatings, solvent and support materials and cleanup materials, in pounds per day. The controlled, daily VOC emission rate shall be calculated using the overall control efficiency for the control equipment as determined during the most recent emission test that demonstrated that the emissions unit was in compliance. The controlled VOC emission rate is the uncontrolled VOC emission rate multiplied by (1 minus the overall control efficiency, in percentage).

   i. The calculated, controlled emission rate for each individual HAP from all coatings, solvent and support materials and cleanup materials, in pounds per day. The controlled



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emission rate shall be calculated using the overall control efficiency for the control equipment as determined during the most recent emission test that demonstrated that the emissions unit was in compliance. The controlled emission rate for each individual HAP is the uncontrolled emission rate multiplied by (1 minus the overall control efficiency, in percentage).

j. The total controlled emission rate of all HAPs collectively from all coatings, solvent and support materials and cleanup materials employed, in pounds per day. This calculation is summation of each individual HAP controlled emission rate, as determined above in 4.i.

5. The permittee shall collect and record the following information each month for emissions units K007, K008, K009, K010, K011, K012, K013, K014, K015, K016 and K017.

a. The controlled emission rate for each individual HAP from all coatings, solvent and support materials and cleanup materials, in pounds per rolling 12 month period. This calculation is the summation of each daily emission rate, as recorded per Section C.4.i, for the past twelve months and then multiplied by ton/2,000 lbs.

b. The controlled emission rate for all HAPs collectively from all coatings, solvent and support materials and cleanup materials, in pounds per rolling 12 month period. This calculation is the summation of each daily emission rate, as recorded per Section C.4.j, for the past twelve months and then multiplied by ton/2,000 lbs.

c. The controlled VOC emission rate for all coatings, solvent and support materials and cleanup materials, in tons per rolling 12 month period. This calculation is the summation of each daily emission rate, as recorded per Section C.4.h, for the past twelve months and then multiplied by ton/2,000 lbs.

d. The coating usage rate as described in Section B.3 in gallons per month.

e. The solvent usage rate as described in Section B.3 in gallons per month.

6. The permit to install for this emissions unit 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 for each pollutant emitted by this emissions unit using data from the permit to install application and the SCREEN 3.0 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 table summarizes the results of the modeling from RTO #1:

| Compound | TLV ($ug.m^3$) | MAGLC = TLV/42 ($ug.m^3$) | Emission rate (g/s) | Predicted 1-hr max ground level conc. ($ug.m^3$) | MAGLC exceeded (Y/N) |
|---|---|---|---|---|---|


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| | | | | | |
|---|---|---|---|---|---|
| formaldehyde | 271 | 6 | 0.0011 | 0.12 | N |
| methanol | 262,086 | 6,240 | 0.23 | 26.43 | N |
| acetone | 1,187,116 | 28,264 | 0.01 | 1.15 | N |
| MEK | 589,775 | 14,042 | 0.32 | 35.88 | N |
| naphthalene | 52,429 | 1,248 | 0.0001 | 0.008 | N |
| cumene | 245,787 | 5,852 | 0.000001 | 0.0001 | N |
| ethylbenzene | 4343,192 | 10,338 | 0.22 | 25.35 | N |
| MIBK | 204,826 | 4,877 | 0.18 | 20.91 | N |
| toluene | 188,405 | 4,486 | 0.57 | 65.11 | N |
| hexane | 1,762,372 | 41,961 | 0.000001 | 0.0001 | N |
| xylene | 434,192 | 10,338 | 1.03 | 116.63 | N |

7. 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 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.).

   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



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(other than (VV)(1)(a)(ii)), then the permittee shall obtain a final permit to install prior to the change(s).

8. 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 satisfied 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 quarterly summaries of the following records:

   a. A log of operating time for the capture (collection) system, control device, monitoring equipment, and the associated emission unit.

   b. All 3-hour blocks of time during which the average combustion temperature within the thermal incinerator does not comply with the temperature limitation specified above.

   c. All periods of time during which the permanent total enclosure was not maintained at the required differential pressure specified above.

   d. A list of all days when the daily VOC emission rate from RTO #1 exceeded 151.8 pounds.

   e. A list of any days when noncomplying coatings were used.

   f. A list of all months when the amount of coatings (including stains, toners, glazes, topcoats and sealers) exceeded 43,196 gallons, and the amount of solvent and support materials exceeded 15,300 gallons.

2. The permittee shall also submit a quarterly deviation report when the total controlled emissions of VOC, individual HAPs, and the total aggregate HAPs from RTO #1 exceed the limits listed in A.2.d and A.2.e respectively.

## E. Testing Requirements

1. The permittee shall conduct, or have conducted, emission testing for this emission unit in accordance with the following requirements:



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a. The emission testing shall be conducted within 3 months after issuance of this permit.

b. The emission testing shall be conducted to demonstrate compliance with the VOC capture efficiency and control efficiency requirement specified in Section A.2.a. Emission testing shall also be conducted to establish the average combustion temperature within the thermal incinerator, as specified in Section B.1, and to establish the minimum pressure differential within the permanent total enclosure, as specified in Section B.2.

c. The test(s) shall be conducted while the emissions units are operating at or near their maximum capacity, unless otherwise specified or approved by the Ohio EPA Northeast District Office.

d. The capture efficiency shall be determined using Methods 204 through 204F, as specified in 40 CFR part 51, Appendix M, or the permittee may request to use an alternative method or procedure for the determination of capture efficiency in accordance with the U.S. EPA's "Guideline for Determining Capture Efficiency," dated January 9, 1995. (The Ohio EPA will consider the request, including an evaluation of the applicability, necessity, and validity of the alternative, and may approve the use of the alternative if such approval does not contravene any other applicable requirement.)

e. The control efficiency (i.e., the percent reduction in mass emissions between the inlet and outlet of the control system) shall be determined in accordance with the test methods and procedures specified in OAC rule 3745-21-10 or an approved alternative test protocol. The test methods and procedures selected shall be based on a consideration of the diversity of the organic species present and their total concentration, and on a consideration of the potential presence of interfering gases.

f. U.S. EPA Method 24 shall be used, in accordance with OAC rule 3745-21-04(B)(5), to determine the VOC contents for all coatings, solvent and support materials, and cleanup materials used during the performance test(s). If, pursuant to section 4.3 of Method 24, 40 CFR part 60, Appendix A, an owner or operator determines that Method 24 cannot be used for a particular coating, solvent and support material, or cleanup material, the permittee shall so notify the Administrator of the U.S. EPA and shall use formulation data for that coating, solvent and support material, or cleanup material to demonstrate compliance until the U.S. EPA provides alternative analytical procedures or alternative precision statements for Method 24.

g. Not later than 30 days prior to the proposed test date(s), the permittee shall submit an "Intent to Test" notification to the Ohio EPA Northeast District Office. The "Intent to Test" notification shall describe in detail the proposed test methods and procedures, the emissions unit operating parameters, the time(s) and date(s) of the test(s), and the person(s) who will be conducting the test(s). Failure to submit such notification for



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review and approval prior to the test(s) may result in the Ohio EPA Northeast District Office's refusal to accept the results of the emission test(s).

Personnel from the Ohio EPA Northeast District Office shall be permitted to witness the test(s), examine the testing equipment, and acquire data and information necessary to ensure that the operation of the emissions unit and the testing procedures provide a valid characterization of the emissions from the emissions unit and/or the performance of the control equipment.

h. A comprehensive written report on the results of the emissions test(s) shall be signed by the person or persons responsible for the tests and submitted to the Ohio EPA Northeast District Office within 30 days following completion of the test(s).

2. Emission Limitation:
151.8 lbs VOC /day and 27.7 tons VOC per rolling 12 month period from RTO #1

Applicable Compliance Method:
Compliance shall be based upon the recordkeeping specified in Section C.4 and C.5.

3. Emission Limitation:
792 lbs/month and 4.75 tons per rolling 12 month period of an individual HAP from RTO #1

Applicable Compliance Method:
Compliance shall be based upon the recordkeeping specified in Section C.5.

4. Emission Limitation:
2,067 lbs/month and 12.4 tons per rolling 12 month period of all HAPs from RTO #1

Applicable Compliance Method:
Compliance shall be based upon the recordkeeping specified in Section C.5.

5. Compliance with the VOC content restrictions of each coating, solvent and support material, and cleanup material shall be based upon the use of U.S. EPA Method 24.

6. Emission Limitation:
0.7 lb NOx/hr and 3.2 tons NOx/year from the combustion of natural gas in the thermal oxidizer.

Applicable Compliance Method:
The following equation shall be used to determine the hourly emission rate.

$$E = EF \times R \times 1/H$$

where:

E = Emission rate, in lbs/hr



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EF = Emission factor (AP-42, Section 1.4) for NOx is 100 lbs/mmcf.

R = Maximum rating of the thermal oxidizer reported to be 7.5 mmBtu/hr.

H = Heating value of the natural gas, in Btu/cf. 1,020 Btu/cf was used in the emission calculation for this permit.

The yearly rate, in tons/year, shall be determined by multiplying the hourly rate (lbs/hr) as calculated above, by (# hrs of operation/year) and (ton/2,000 lbs).

**7.** Emission Limitation:
0.6 lb CO/hr and 2.7 tons CO/year from the combustion of natural gas in the thermal oxidizer.

Applicable Compliance Method:
The following equation shall be used to determine the hourly emission rate.

E = EF x R x 1/H

where:

E = Emission rate, in lbs/hr

EF = Emission factor (AP-42, Section 1.4) for CO is 84 lbs/mmcf.

R = Maximum rating of the thermal oxidizer reported to be 7.5 mmBtu/hr.

H = Heating value of the natural gas, in Btu/cf. 1,020 Btu/cf was used in the emission calculation for this permit.

The yearly rate (tons/year) shall be determined by multiplying the hourly rate (lbs/hr), as calculated above, by (# hrs of operation/year) and (ton/2,000 lbs).

## F. Miscellaneous Requirements

1. In accordance with the provisions of OAC rule 3745-35-07, the following terms and conditions of this permit to install are federally enforceable: A-F, except C.6, C.7 and C.8.

2. The terms and condition of this permit supercede those contained with PTI # 02-12833. The exemption would be that the terms and conditions for F003 (Sawdust Storage Bin #1 Load-out) and F004 (Sawdust Storage Bin #2 Load-out) contained in PTI #02-12833 are still applicable.



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## 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 |
|---|---|---|
| K018 - Spray booth 1 of overhead conveyor line 4, controlled by regenerative thermal oxidizer No. 2 | OAC rule 3745-31-05(A)(3) | Volatile Organic Compound (VOC) emissions shall not exceed 151.8 pounds per day.<br><br>Hazardous Air Pollutant (HAP) emissions shall not exceed 792 pounds per month for an individual HAP and 2,067 pounds per month for combined HAPs.<br><br>Nitrogen Oxide (NOx) emissions from the combustion of natural gas from the thermal oxidizer shall not exceed 0.7 pound per hour, 3.2 tons per year.<br><br>Carbon Monoxide (CO) emissions from the combustion of natural gas from the thermal oxidizer shall not exceed 0.6 pound per hour, 2.7 tons per year.<br><br>The requirements of this rule also include compliance with the requirements of OAC rule 3745-35-02(D) |
| | OAC rule 3745-35-07(B) | See Section A.2.a through A.2.c. |
| | OAC rule 3745-21-07(G)(2) | See Section A.2.d and A.2.e. |



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| | |
|---|---|
| | The requirements of this rule are less stringent than the requirements established pursuant to OAC rule 3745-31-05(A)(3). |

**2. Additional Terms and Conditions**

**2.a** The permittee shall design enclosure #2 that will house K018, K019, K020, K021, K022, K023, K024, K025, K026, K027, K028 and K029 in such a manner as to function as a permanent total enclosure (PTE) as defined by U.S. EPA Method 204. The use of the PTE, as defined in Reference Method 204, provides for 100% capture efficiency.

**2.b** The permittee shall install and maintain an incineration system to control the VOC emissions from the permanent total enclosure, PTE #2. The incinerator system shall have a VOC destruction efficiency of at least 99% by weight.

**2.c** The volatile organic compound (VOC) content of the Coatings (including stains, toners, glazes, topcoats and sealers) and Solvents & Support Materials used by the permittee at this facility shall not exceed the following VOC content, minus water:

| | |
|---|---|
| Coatings | 7.5 lbs VOC/gallon |
| Solvents & Support Materials | 9.0 lbs VOC/gallon |

**2.d** Emissions from the Regenerative Thermal Oxidizer (RTO) #2 shall be restricted in such a manner to limit emissions from emissions units K018, K019, K020, K021, K022, K023, K024, K025, K026, K027, K028 and K029 to the following:

i. 27.7 tons VOC per rolling 12 month period
ii. 4.75 tons per rolling 12 month period of any individual HAP
iii. 12.4 tons per rolling 12 month period of total aggregate HAPs

**2.e** Emissions from the entire facility shall not exceed the following limits:

i. 55.4 tons VOC per rolling 12 month period
ii. 9.5 tons per rolling 12 month period of any individual HAP
iii. 24.8 tons per rolling 12 month period of total aggregate HAPs

**B. Operational Restrictions**

1. The average combustion temperature within RTO #2, for any 3-hour block of time when an associated emissions unit is in operation, shall not be more than 50 degrees Fahrenheit below the average temperature during the most recent emission test that demonstrated the RTO system was in compliance with the destruction efficiency requirement.



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2. The permanent total enclosure shall be maintained under negative pressure, at a minimum pressure differential that is not less than the minimum pressure differential (inches of water) established during the most recent emission test that demonstrated the emissions unit was in compliance or 0.007 inches of water as established in Method 204, whenever the emissions unit is in operation.

3. The permittee shall limit the total coating and solvent usage for PTE #2 (K018, K019, K020, K021, K022, K023, K024, K025, K026, K027, K028 and K029) as follows:

| | |
|---|---|
| Coatings (including stains, toners, glazes, topcoats and sealers) | 43,196 gallons/month |
| Solvents & Support Materials | 15,300 gallons/month |

**C. Monitoring and/or Recordkeeping Requirements**

1. The permittee shall install, maintain and operate monitoring devices and a recorder which simultaneously measure and record the pressure inside and outside the permanent total enclosure.

   The monitoring and recording devices 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 following information on a daily basis:

   a. The difference in pressure between the permanent total enclosure and the surrounding area(s).

   b. A log or record of operating time for the capture (collection) system, control device, monitoring equipment, and the associated emissions unit.

2. The permittee shall operate and maintain a continuous temperature monitor and recorder which measures and records the combustion temperature within the thermal incinerator when the emissions unit is in operation. Units shall be in degrees Fahrenheit. The monitoring and recording devices shall be capable of accurately measuring the desired parameter. The temperature monitor and recorder shall be installed, calibrated, operated and maintained in accordance with the manufacturer's recommendations, with any modifications deemed necessary by the permittee.

3. The permittee shall collect and record the following information for each day for RTO #2:

   a. A log of operating time for the capture (collection) system, control device, monitoring equipment, and the associated emissions units.

   b. All 3-hour blocks of time during which the average combustion temperature within the thermal incinerator, when any of the associated emissions unit was in operation, was more than 50 degrees Fahrenheit below the average temperature during the most recent


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emission test that demonstrated the incinerator system was in compliance with the destruction efficiency requirement.

4. The permittee shall collect and record the following information each day for emissions units K018, K019, K020, K021, K022, K023, K024, K025, K026, K027, K028 and K029.

   a. The name and identification number of each coating, solvent and support material, and cleanup material, as applied.

   b. The VOC content of each coating, solvent and support material, and cleanup material, as applied, in pounds per gallon and in pounds per gallon excluding water and exempt solvents.

   c. The number of gallons of each coating, solvent and support material, and cleanup material employed.

   d. The content of each individual HAP (i.e. xylene, toluene, and any other HAP) in each coating, solvent and support material and cleanup material employed, in pounds per gallon.

   e. The total uncontrolled VOC emission rate for all coatings, solvent and support materials, and cleanup materials employed, in pounds per day. This calculation is the summation of the product of (4.b or VOC content in pounds per gallon) times (4.c or number of gallons per day) for each coating, solvent, support material and cleanup material employed.

   f. The total uncontrolled emission rate for each individual HAP from all coatings, solvent and support materials and cleanup materials employed, in pounds per day. This calculation is the summation of the product of (4.d or individual HAP content in pounds per gallon) times (4.c or number of gallons per day) for each coating, solvent, support material and cleanup material employed.

   g. The total uncontrolled emission rate of all HAPs collectively from all coatings, solvent and support materials and cleanup materials employed, in pounds per day. This calculation is summation of each individual HAP emission rate, as determined above in 4.f.

   h. The calculated, controlled VOC emission rate for all coatings, solvent and support materials and cleanup materials, in pounds per day. The controlled, daily VOC emission rate shall be calculated using the overall control efficiency for the control equipment as determined during the most recent emission test that demonstrated that the emissions unit was in compliance. The controlled VOC emission rate is the uncontrolled VOC emission rate multiplied by (1 minus the overall control efficiency, in percentage).

   i. The calculated, controlled emission rate for each individual HAP from all coatings, solvent and support materials and cleanup materials, in pounds per day. The controlled



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emission rate shall be calculated using the overall control efficiency for the control equipment as determined during the most recent emission test that demonstrated that the emissions unit was in compliance. The controlled emission rate for each individual HAP is the uncontrolled emission rate multiplied by (1 minus the overall control efficiency, in percentage).

j. The total controlled emission rate of all HAPs collectively from all coatings, solvent and support materials and cleanup materials employed, in pounds per day. This calculation is summation of each individual HAP controlled emission rate, as determined above in 4.i.

5. The permittee shall collect and record the following information each month for emissions units K018, K019, K020, K021, K022, K023, K024, K025, K026, K027, K028 and K029.

a. The controlled emission rate for each individual HAP from all coatings, solvent and support materials and cleanup materials, in pounds per rolling 12 month period. This calculation is the summation of each daily emission rate, as recorded per Section C.4.i, for the past twelve months and then multiplied by ton/2,000 lbs.

b. The controlled emission rate for all HAPs collectively from all coatings, solvent and support materials and cleanup materials, in pounds per rolling 12 month period. This calculation is the summation of each daily emission rate, as recorded per Section C.4.j, for the past twelve months and then multiplied by ton/2,000 lbs.

c. The controlled VOC emission rate for all coatings, solvent and support materials and cleanup materials, in tons per rolling 12 month period. This calculation is the summation of each daily emission rate, as recorded per Section C.4.h, for the past twelve months and then multiplied by ton/2,000 lbs.

d. The coating usage rate as described in Section B.3 in gallons per month.

e. The solvent usage rate as described in Section B.3 in gallons per month.

6. The permit to install for this emissions unit 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 for each pollutant emitted by this emissions unit using data from the permit to install application and the SCREEN 3.0 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 table summarizes the results of the modeling from RTO #2:

| Compound | TLV ($ug.m^3$) | MAGLC = TLV/42 ($ug.m^3$) | Emission rate (g/s) | Predicted 1-hr max ground level conc. ($ug.m^3$) | MAGLC exceeded (Y/N) |
|---|---|---|---|---|---|


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| | | | | | |
|---|---|---|---|---|---|
| formaldehyde | 271 | 6 | 0.0011 | 0.12 | N |
| methanol | 262,086 | 6,240 | 0.23 | 27.41 | N |
| acetone | 1,187,116 | 28,264 | 0.01 | 1.19 | N |
| MEK | 589,775 | 14,042 | 0.32 | 37.21 | N |
| naphthalene | 52,429 | 1,248 | 0.0001 | 0.01 | N |
| cumene | 245,787 | 5,852 | 0.000001 | 0.0001 | N |
| ethylbenzene | 4343,192 | 10,338 | 0.22 | 26.29 | N |
| MIBK | 204,826 | 4,877 | 0.18 | 21.68 | N |
| toluene | 188,405 | 4,486 | 0.57 | 67.52 | N |
| hexane | 1,762,372 | 41,961 | 0.000001 | 0.0001 | N |
| xylene | 434,192 | 10,338 | 1.03 | 120.95 | N |

7. 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 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.).

   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



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(other than (VV)(1)(a)(ii)), then the permittee shall obtain a final permit to install prior to the change(s).

8. 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 satisfied 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 quarterly summaries of the following records:

   a. A log of operating time for the capture (collection) system, control device, monitoring equipment, and the associated emission unit.

   b. All 3-hour blocks of time during which the average combustion temperature within the thermal incinerator does not comply with the temperature limitation specified above.

   c. All periods of time during which the permanent total enclosure was not maintained at the required differential pressure specified above.

   d. A list of all days when the daily VOC emission rate from RTO #2 exceeded 151.8 pounds.

   e. A list of any days when noncomplying coatings were used.

   f. A list of all months when the amount of coatings (including stains, toners, glazes, topcoats and sealers) exceeded 43,196 gallons, and the amount of solvent and support materials exceeded 15,300 gallons.

2. The permittee shall also submit a quarterly deviation report when the total controlled emissions of VOC, individual HAPs, and the total aggregate HAPs from RTO #2 exceed the limits listed in A.2.d and A.2.e respectively.

## E. Testing Requirements

1. The permittee shall conduct, or have conducted, emission testing for this emission unit in accordance with the following requirements:



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a. The emission testing shall be conducted within 3 months after issuance of this permit.

b. The emission testing shall be conducted to demonstrate compliance with the VOC capture efficiency and control efficiency requirement specified in Section A.2.a. Emission testing shall also be conducted to establish the average combustion temperature within the thermal incinerator, as specified in Section B.1, and to establish the minimum pressure differential within the permanent total enclosure, as specified in Section B.2.

c. The test(s) shall be conducted while the emissions units are operating at or near their maximum capacity, unless otherwise specified or approved by the Ohio EPA Northeast District Office.

d. The capture efficiency shall be determined using Methods 204 through 204F, as specified in 40 CFR part 51, Appendix M, or the permittee may request to use an alternative method or procedure for the determination of capture efficiency in accordance with the U.S. EPA's "Guideline for Determining Capture Efficiency," dated January 9, 1995. (The Ohio EPA will consider the request, including an evaluation of the applicability, necessity, and validity of the alternative, and may approve the use of the alternative if such approval does not contravene any other applicable requirement.)

e. The control efficiency (i.e., the percent reduction in mass emissions between the inlet and outlet of the control system) shall be determined in accordance with the test methods and procedures specified in OAC rule 3745-21-10 or an approved alternative test protocol. The test methods and procedures selected shall be based on a consideration of the diversity of the organic species present and their total concentration, and on a consideration of the potential presence of interfering gases.

f. U.S. EPA Method 24 shall be used, in accordance with OAC rule 3745-21-04(B)(5), to determine the VOC contents for all coatings, solvent and support materials, and cleanup materials used during the performance test(s). If, pursuant to section 4.3 of Method 24, 40 CFR part 60, Appendix A, an owner or operator determines that Method 24 cannot be used for a particular coating, solvent and support material, or cleanup material, the permittee shall so notify the Administrator of the U.S. EPA and shall use formulation data for that coating, solvent and support material, or cleanup material to demonstrate compliance until the U.S. EPA provides alternative analytical procedures or alternative precision statements for Method 24.

g. Not later than 30 days prior to the proposed test date(s), the permittee shall submit an "Intent to Test" notification to the Ohio EPA Northeast District Office. The "Intent to Test" notification shall describe in detail the proposed test methods and procedures, the emissions unit operating parameters, the time(s) and date(s) of the test(s), and the person(s) who will be conducting the test(s). Failure to submit such notification for



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review and approval prior to the test(s) may result in the Ohio EPA Northeast District Office's refusal to accept the results of the emission test(s).

Personnel from the Ohio EPA Northeast District Office shall be permitted to witness the test(s), examine the testing equipment, and acquire data and information necessary to ensure that the operation of the emissions unit and the testing procedures provide a valid characterization of the emissions from the emissions unit and/or the performance of the control equipment.

h. A comprehensive written report on the results of the emissions test(s) shall be signed by the person or persons responsible for the tests and submitted to the Ohio EPA Northeast District Office within 30 days following completion of the test(s).

2. Emission Limitation:
151.8 lbs VOC /day and 27.7 tons VOC per rolling 12 month period from RTO #2

Applicable Compliance Method:
Compliance shall be based upon the recordkeeping specified in Section C.4 and C.5.

3. Emission Limitation:
792 lbs/month and 4.75 tons per rolling 12 month period of an individual HAP from RTO #2

Applicable Compliance Method:
Compliance shall be based upon the recordkeeping specified in Section C.5.

4. Emission Limitation:
2,067 lbs/month and 12.4 tons per rolling 12 month period of all HAPs from RTO #2

Applicable Compliance Method:
Compliance shall be based upon the recordkeeping specified in Section C.5.

5. Compliance with the VOC content restrictions of each coating, solvent and support material, and cleanup material shall be based upon the use of U.S. EPA Method 24.

6. Emission Limitation:
0.7 lb NOx/hr and 3.2 tons NOx/year from the combustion of natural gas in the thermal oxidizer.

Applicable Compliance Method:
The following equation shall be used to determine the hourly emission rate.

$$E = EF \times R \times 1/H$$

where:

E = Emission rate, in lbs/hr



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EF = Emission factor (AP-42, Section 1.4) for NOx is 100 lbs/mmcf.

R = Maximum rating of the thermal oxidizer reported to be 7.5 mmBtu/hr.

H = Heating value of the natural gas, in Btu/cf. 1,020 Btu/cf was used in the emission calculation for this permit.

The yearly rate, in tons/year, shall be determined by multiplying the hourly rate (lbs/hr) as calculated above, by (# hrs of operation/year) and (ton/2,000 lbs).

**7.** Emission Limitation:
0.6 lb CO/hr and 2.7 tons CO/year from the combustion of natural gas in the thermal oxidizer.

Applicable Compliance Method:
The following equation shall be used to determine the hourly emission rate.

E = EF x R x 1/H

where:

E = Emission rate, in lbs/hr

EF = Emission factor (AP-42, Section 1.4) for CO is 84 lbs/mmcf.

R = Maximum rating of the thermal oxidizer reported to be 7.5 mmBtu/hr.

H = Heating value of the natural gas, in Btu/cf. 1,020 Btu/cf was used in the emission calculation for this permit.

The yearly rate (tons/year) shall be determined by multiplying the hourly rate (lbs/hr), as calculated above, by (# hrs of operation/year) and (ton/2,000 lbs).

## F. Miscellaneous Requirements

1. In accordance with the provisions of OAC rule 3745-35-07, the following terms and conditions of this permit to install are federally enforceable: A-F, except C.6, C.7 and C.8.

2. The terms and condition of this permit supercede those contained with PTI # 02-12833. The exemption would be that the terms and conditions for F003 (Sawdust Storage Bin #1 Load-out) and F004 (Sawdust Storage Bin #2 Load-out) contained in PTI #02-12833 are still applicable.



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## 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 |
|---|---|---|
| K019 - Spray booth 2 of overhead conveyor line 4, controlled by regenerative thermal oxidizer No. 2 | OAC rule 3745-31-05(A)(3) | Volatile Organic Compound (VOC) emissions shall not exceed 151.8 pounds per day.<br><br>Hazardous Air Pollutant (HAP) emissions shall not exceed 792 pounds per month for an individual HAP and 2,067 pounds per month for combined HAPs.<br><br>Nitrogen Oxide (NOx) emissions from the combustion of natural gas from the thermal oxidizer shall not exceed 0.7 pound per hour, 3.2 tons per year.<br><br>Carbon Monoxide (CO) emissions from the combustion of natural gas from the thermal oxidizer shall not exceed 0.6 pound per hour, 2.7 tons per year.<br><br>The requirements of this rule also include compliance with the requirements of OAC rule 3745-35-02(D) |
| | OAC rule 3745-35-07(B) | See Section A.2.a through A.2.c. |
| | OAC rule 3745-21-07(G)(2) | See Section A.2.d and A.2.e. |



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| | |
|---|---|
| | The requirements of this rule are less stringent than the requirements established pursuant to OAC rule 3745-31-05(A)(3). |

**2. Additional Terms and Conditions**

**2.a** The permittee shall design enclosure #2 that will house K018, K019, K020, K021, K022, K023, K024, K025, K026, K027, K028 and K029 in such a manner as to function as a permanent total enclosure (PTE) as defined by U.S. EPA Method 204. The use of the PTE, as defined in Reference Method 204, provides for 100% capture efficiency.

**2.b** The permittee shall install and maintain an incineration system to control the VOC emissions from the permanent total enclosure, PTE #2. The incinerator system shall have a VOC destruction efficiency of at least 99% by weight.

**2.c** The volatile organic compound (VOC) content of the Coatings (including stains, toners, glazes, topcoats and sealers) and Solvents & Support Materials used by the permittee at this facility shall not exceed the following VOC content, minus water:

| | |
|---|---|
| Coatings | 7.5 lbs VOC/gallon |
| Solvents & Support Materials | 9.0 lbs VOC/gallon |

**2.d** Emissions from the Regenerative Thermal Oxidizer (RTO) #2 shall be restricted in such a manner to limit emissions from emissions units K018, K019, K020, K021, K022, K023, K024, K025, K026, K027, K028 and K029 to the following:

i. 27.7 tons VOC per rolling 12 month period
ii. 4.75 tons per rolling 12 month period of any individual HAP
iii. 12.4 tons per rolling 12 month period of total aggregate HAPs

**2.e** Emissions from the entire facility shall not exceed the following limits:

i. 55.4 tons VOC per rolling 12 month period
ii. 9.5 tons per rolling 12 month period of any individual HAP
iii. 24.8 tons per rolling 12 month period of total aggregate HAPs

**B. Operational Restrictions**

1. The average combustion temperature within RTO #2, for any 3-hour block of time when an associated emissions unit is in operation, shall not be more than 50 degrees Fahrenheit below the average temperature during the most recent emission test that demonstrated the RTO system was in compliance with the destruction efficiency requirement.



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2. The permanent total enclosure shall be maintained under negative pressure, at a minimum pressure differential that is not less than the minimum pressure differential (inches of water) established during the most recent emission test that demonstrated the emissions unit was in compliance or 0.007 inches of water as established in Method 204, whenever the emissions unit is in operation.

3. The permittee shall limit the total coating and solvent usage for PTE #2 (K018, K019, K020, K021, K022, K023, K024, K025, K026, K027, K028 and K029) as follows:

| | |
|---|---|
| Coatings (including stains, toners, glazes, topcoats and sealers) | 43,196 gallons/month |
| Solvents & Support Materials | 15,300 gallons/month |

**C. Monitoring and/or Recordkeeping Requirements**

1. The permittee shall install, maintain and operate monitoring devices and a recorder which simultaneously measure and record the pressure inside and outside the permanent total enclosure.

   The monitoring and recording devices 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 following information on a daily basis:

   a. The difference in pressure between the permanent total enclosure and the surrounding area(s).

   b. A log or record of operating time for the capture (collection) system, control device, monitoring equipment, and the associated emissions unit.

2. The permittee shall operate and maintain a continuous temperature monitor and recorder which measures and records the combustion temperature within the thermal incinerator when the emissions unit is in operation. Units shall be in degrees Fahrenheit. The monitoring and recording devices shall be capable of accurately measuring the desired parameter. The temperature monitor and recorder shall be installed, calibrated, operated and maintained in accordance with the manufacturer's recommendations, with any modifications deemed necessary by the permittee.

3. The permittee shall collect and record the following information for each day for RTO #2:

   a. A log of operating time for the capture (collection) system, control device, monitoring equipment, and the associated emissions units.

   b. All 3-hour blocks of time during which the average combustion temperature within the thermal incinerator, when any of the associated emissions unit was in operation, was more than 50 degrees Fahrenheit below the average temperature during the most recent


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emission test that demonstrated the incinerator system was in compliance with the destruction efficiency requirement.

4. The permittee shall collect and record the following information each day for emissions units K018, K019, K020, K021, K022, K023, K024, K025, K026, K027, K028 and K029.

   a. The name and identification number of each coating, solvent and support material, and cleanup material, as applied.

   b. The VOC content of each coating, solvent and support material, and cleanup material, as applied, in pounds per gallon and in pounds per gallon excluding water and exempt solvents.

   c. The number of gallons of each coating, solvent and support material, and cleanup material employed.

   d. The content of each individual HAP (i.e. xylene, toluene, and any other HAP) in each coating, solvent and support material and cleanup material employed, in pounds per gallon.

   e. The total uncontrolled VOC emission rate for all coatings, solvent and support materials, and cleanup materials employed, in pounds per day. This calculation is the summation of the product of (4.b or VOC content in pounds per gallon) times (4.c or number of gallons per day) for each coating, solvent, support material and cleanup material employed.

   f. The total uncontrolled emission rate for each individual HAP from all coatings, solvent and support materials and cleanup materials employed, in pounds per day. This calculation is the summation of the product of (4.d or individual HAP content in pounds per gallon) times (4.c or number of gallons per day) for each coating, solvent, support material and cleanup material employed.

   g. The total uncontrolled emission rate of all HAPs collectively from all coatings, solvent and support materials and cleanup materials employed, in pounds per day. This calculation is summation of each individual HAP emission rate, as determined above in 4.f.

   h. The calculated, controlled VOC emission rate for all coatings, solvent and support materials and cleanup materials, in pounds per day. The controlled, daily VOC emission rate shall be calculated using the overall control efficiency for the control equipment as determined during the most recent emission test that demonstrated that the emissions unit was in compliance. The controlled VOC emission rate is the uncontrolled VOC emission rate multiplied by (1 minus the overall control efficiency, in percentage).

   i. The calculated, controlled emission rate for each individual HAP from all coatings, solvent and support materials and cleanup materials, in pounds per day. The controlled



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emission rate shall be calculated using the overall control efficiency for the control equipment as determined during the most recent emission test that demonstrated that the emissions unit was in compliance. The controlled emission rate for each individual HAP is the uncontrolled emission rate multiplied by (1 minus the overall control efficiency, in percentage).

j. The total controlled emission rate of all HAPs collectively from all coatings, solvent and support materials and cleanup materials employed, in pounds per day. This calculation is summation of each individual HAP controlled emission rate, as determined above in 4.i.

5. The permittee shall collect and record the following information each month for emissions units K018, K019, K020, K021, K022, K023, K024, K025, K026, K027, K028 and K029.

a. The controlled emission rate for each individual HAP from all coatings, solvent and support materials and cleanup materials, in pounds per rolling 12 month period. This calculation is the summation of each daily emission rate, as recorded per Section C.4.i, for the past twelve months and then multiplied by ton/2,000 lbs.

b. The controlled emission rate for all HAPs collectively from all coatings, solvent and support materials and cleanup materials, in pounds per rolling 12 month period. This calculation is the summation of each daily emission rate, as recorded per Section C.4.j, for the past twelve months and then multiplied by ton/2,000 lbs.

c. The controlled VOC emission rate for all coatings, solvent and support materials and cleanup materials, in tons per rolling 12 month period. This calculation is the summation of each daily emission rate, as recorded per Section C.4.h, for the past twelve months and then multiplied by ton/2,000 lbs.

d. The coating usage rate as described in Section B.3 in gallons per month.

e. The solvent usage rate as described in Section B.3 in gallons per month.

6. The permit to install for this emissions unit 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 for each pollutant emitted by this emissions unit using data from the permit to install application and the SCREEN 3.0 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 table summarizes the results of the modeling from RTO #2:

| Compound | TLV ($ug.m^3$) | MAGLC = TLV/42 ($ug.m^3$) | Emission rate (g/s) | Predicted 1-hr max ground level conc. ($ug.m^3$) | MAGLC exceeded (Y/N) |
|---|---|---|---|---|---|



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| | | | | | |
|---|---|---|---|---|---|
| formaldehyde | 271 | 6 | 0.0011 | 0.12 | N |
| methanol | 262,086 | 6,240 | 0.23 | 27.41 | N |
| acetone | 1,187,116 | 28,264 | 0.01 | 1.19 | N |
| MEK | 589,775 | 14,042 | 0.32 | 37.21 | N |
| naphthalene | 52,429 | 1,248 | 0.0001 | 0.01 | N |
| cumene | 245,787 | 5,852 | 0.000001 | 0.0001 | N |
| ethylbenzene | 4343,192 | 10,338 | 0.22 | 26.29 | N |
| MIBK | 204,826 | 4,877 | 0.18 | 21.68 | N |
| toluene | 188,405 | 4,486 | 0.57 | 67.52 | N |
| hexane | 1,762,372 | 41,961 | 0.000001 | 0.0001 | N |
| xylene | 434,192 | 10,338 | 1.03 | 120.95 | N |

7. 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 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.).

   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



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(other than (VV)(1)(a)(ii)), then the permittee shall obtain a final permit to install prior to the change(s).

8. 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 satisfied 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 quarterly summaries of the following records:

   a. A log of operating time for the capture (collection) system, control device, monitoring equipment, and the associated emission unit.

   b. All 3-hour blocks of time during which the average combustion temperature within the thermal incinerator does not comply with the temperature limitation specified above.

   c. All periods of time during which the permanent total enclosure was not maintained at the required differential pressure specified above.

   d. A list of all days when the daily VOC emission rate from RTO #2 exceeded 151.8 pounds.

   e. A list of any days when noncomplying coatings were used.

   f. A list of all months when the amount of coatings (including stains, toners, glazes, topcoats and sealers) exceeded 43,196 gallons, and the amount of solvent and support materials exceeded 15,300 gallons.

2. The permittee shall also submit a quarterly deviation report when the total controlled emissions of VOC, individual HAPs, and the total aggregate HAPs from RTO #2 exceed the limits listed in A.2.d and A.2.e respectively.

## E. Testing Requirements

1. The permittee shall conduct, or have conducted, emission testing for this emission unit in accordance with the following requirements:



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a. The emission testing shall be conducted within 3 months after issuance of this permit.

b. The emission testing shall be conducted to demonstrate compliance with the VOC capture efficiency and control efficiency requirement specified in Section A.2.a. Emission testing shall also be conducted to establish the average combustion temperature within the thermal incinerator, as specified in Section B.1, and to establish the minimum pressure differential within the permanent total enclosure, as specified in Section B.2.

c. The test(s) shall be conducted while the emissions units are operating at or near their maximum capacity, unless otherwise specified or approved by the Ohio EPA Northeast District Office.

d. The capture efficiency shall be determined using Methods 204 through 204F, as specified in 40 CFR part 51, Appendix M, or the permittee may request to use an alternative method or procedure for the determination of capture efficiency in accordance with the U.S. EPA's "Guideline for Determining Capture Efficiency," dated January 9, 1995. (The Ohio EPA will consider the request, including an evaluation of the applicability, necessity, and validity of the alternative, and may approve the use of the alternative if such approval does not contravene any other applicable requirement.)

e. The control efficiency (i.e., the percent reduction in mass emissions between the inlet and outlet of the control system) shall be determined in accordance with the test methods and procedures specified in OAC rule 3745-21-10 or an approved alternative test protocol. The test methods and procedures selected shall be based on a consideration of the diversity of the organic species present and their total concentration, and on a consideration of the potential presence of interfering gases.

f. U.S. EPA Method 24 shall be used, in accordance with OAC rule 3745-21-04(B)(5), to determine the VOC contents for all coatings, solvent and support materials, and cleanup materials used during the performance test(s). If, pursuant to section 4.3 of Method 24, 40 CFR part 60, Appendix A, an owner or operator determines that Method 24 cannot be used for a particular coating, solvent and support material, or cleanup material, the permittee shall so notify the Administrator of the U.S. EPA and shall use formulation data for that coating, solvent and support material, or cleanup material to demonstrate compliance until the U.S. EPA provides alternative analytical procedures or alternative precision statements for Method 24.

g. Not later than 30 days prior to the proposed test date(s), the permittee shall submit an "Intent to Test" notification to the Ohio EPA Northeast District Office. The "Intent to Test" notification shall describe in detail the proposed test methods and procedures, the emissions unit operating parameters, the time(s) and date(s) of the test(s), and the person(s) who will be conducting the test(s). Failure to submit such notification for review and approval prior to the test(s) may result in the Ohio EPA Northeast District Office's refusal to accept the results of the emission test(s).



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Personnel from the Ohio EPA Northeast District Office shall be permitted to witness the test(s), examine the testing equipment, and acquire data and information necessary to ensure that the operation of the emissions unit and the testing procedures provide a valid characterization of the emissions from the emissions unit and/or the performance of the control equipment.

h. A comprehensive written report on the results of the emissions test(s) shall be signed by the person or persons responsible for the tests and submitted to the Ohio EPA Northeast District Office within 30 days following completion of the test(s).

2. Emission Limitation:
151.8 lbs VOC /day and 27.7 tons VOC per rolling 12 month period from RTO #2

Applicable Compliance Method:
Compliance shall be based upon the recordkeeping specified in Section C.4 and C.5.

3. Emission Limitation:
792 lbs/month and 4.75 tons per rolling 12 month period of an individual HAP from RTO #2

Applicable Compliance Method:
Compliance shall be based upon the recordkeeping specified in Section C.5.

4. Emission Limitation:
2,067 lbs/month and 12.4 tons per rolling 12 month period of all HAPs from RTO #2

Applicable Compliance Method:
Compliance shall be based upon the recordkeeping specified in Section C.5.

5. Compliance with the VOC content restrictions of each coating, solvent and support material, and cleanup material shall be based upon the use of U.S. EPA Method 24.

6. Emission Limitation:
0.7 lb NOx/hr and 3.2 tons NOx/year from the combustion of natural gas in the thermal oxidizer.

Applicable Compliance Method:
The following equation shall be used to determine the hourly emission rate.

$$E = EF \times R \times 1/H$$

where:

E = Emission rate, in lbs/hr

EF = Emission factor (AP-42, Section 1.4) for NOx is 100 lbs/mmcf.



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R = Maximum rating of the thermal oxidizer reported to be 7.5 mmBtu/hr.

H = Heating value of the natural gas, in Btu/cf. 1,020 Btu/cf was used in the emission calculation for this permit.

The yearly rate, in tons/year, shall be determined by multiplying the hourly rate (lbs/hr) as calculated above, by (# hrs of operation/year) and (ton/2,000 lbs).

**7.** Emission Limitation:
0.6 lb CO/hr and 2.7 tons CO/year from the combustion of natural gas in the thermal oxidizer.

Applicable Compliance Method:
The following equation shall be used to determine the hourly emission rate.

E = EF x R x 1/H

where:

E = Emission rate, in lbs/hr

EF = Emission factor (AP-42, Section 1.4) for CO is 84 lbs/mmcf.

R = Maximum rating of the thermal oxidizer reported to be 7.5 mmBtu/hr.

H = Heating value of the natural gas, in Btu/cf. 1,020 Btu/cf was used in the emission calculation for this permit.

The yearly rate (tons/year) shall be determined by multiplying the hourly rate (lbs/hr), as calculated above, by (# hrs of operation/year) and (ton/2,000 lbs).

## F. Miscellaneous Requirements

1. In accordance with the provisions of OAC rule 3745-35-07, the following terms and conditions of this permit to install are federally enforceable: A-F, except C.6, C.7 and C.8.

2. The terms and condition of this permit supercede those contained with PTI # 02-12833. The exemption would be that the terms and conditions for F003 (Sawdust Storage Bin #1 Load-out) and F004 (Sawdust Storage Bin #2 Load-out) contained in PTI #02-12833 are still applicable.



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## 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 |
|---|---|---|
| K020 - Spray booth 3 of overhead conveyor line 4, controlled by regenerative thermal oxidizer No. 2 | OAC rule 3745-31-05(A)(3) | Volatile Organic Compound (VOC) emissions shall not exceed 151.8 pounds per day.<br><br>Hazardous Air Pollutant (HAP) emissions shall not exceed 792 pounds per month for an individual HAP and 2,067 pounds per month for combined HAPs.<br><br>Nitrogen Oxide (NOx) emissions from the combustion of natural gas from the thermal oxidizer shall not exceed 0.7 pound per hour, 3.2 tons per year.<br><br>Carbon Monoxide (CO) emissions from the combustion of natural gas from the thermal oxidizer shall not exceed 0.6 pound per hour, 2.7 tons per year.<br><br>The requirements of this rule also include compliance with the requirements of OAC rule 3745-35-02(D) |
| | OAC rule 3745-35-07(B) | See Section A.2.a through A.2.c. |
| | OAC rule 3745-21-07(G)(2) | See Section A.2.d and A.2.e. |



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| | |
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| | The requirements of this rule are less stringent than the requirements established pursuant to OAC rule 3745-31-05(A)(3). |

**2. Additional Terms and Conditions**

**2.a** The permittee shall design enclosure #2 that will house K018, K019, K020, K021, K022, K023, K024, K025, K026, K027, K028 and K029 in such a manner as to function as a permanent total enclosure (PTE) as defined by U.S. EPA Method 204. The use of the PTE, as defined in Reference Method 204, provides for 100% capture efficiency.

**2.b** The permittee shall install and maintain an incineration system to control the VOC emissions from the permanent total enclosure, PTE #2. The incinerator system shall have a VOC destruction efficiency of at least 99% by weight.

**2.c** The volatile organic compound (VOC) content of the Coatings (including stains, toners, glazes, topcoats and sealers) and Solvents & Support Materials used by the permittee at this facility shall not exceed the following VOC content, minus water:

| | |
|---|---|
| Coatings | 7.5 lbs VOC/gallon |
| Solvents & Support Materials | 9.0 lbs VOC/gallon |

**2.d** Emissions from the Regenerative Thermal Oxidizer (RTO) #2 shall be restricted in such a manner to limit emissions from emissions units K018, K019, K020, K021, K022, K023, K024, K025, K026, K027, K028 and K029 to the following:

i. 27.7 tons VOC per rolling 12 month period
ii. 4.75 tons per rolling 12 month period of any individual HAP
iii. 12.4 tons per rolling 12 month period of total aggregate HAPs

**2.e** Emissions from the entire facility shall not exceed the following limits:

i. 55.4 tons VOC per rolling 12 month period
ii. 9.5 tons per rolling 12 month period of any individual HAP
iii. 24.8 tons per rolling 12 month period of total aggregate HAPs

**B. Operational Restrictions**

1. The average combustion temperature within RTO #2, for any 3-hour block of time when an associated emissions unit is in operation, shall not be more than 50 degrees Fahrenheit below the average temperature during the most recent emission test that demonstrated the RTO system was in compliance with the destruction efficiency requirement.



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2. The permanent total enclosure shall be maintained under negative pressure, at a minimum pressure differential that is not less than the minimum pressure differential (inches of water) established during the most recent emission test that demonstrated the emissions unit was in compliance or 0.007 inches of water as established in Method 204, whenever the emissions unit is in operation.

3. The permittee shall limit the total coating and solvent usage for PTE #2 (K018, K019, K020, K021, K022, K023, K024, K025, K026, K027, K028 and K029) as follows:

| | |
|---|---|
| Coatings (including stains, toners, glazes, topcoats and sealers) | 43,196 gallons/month |
| Solvents & Support Materials | 15,300 gallons/month |

## C. Monitoring and/or Recordkeeping Requirements

1. The permittee shall install, maintain and operate monitoring devices and a recorder which simultaneously measure and record the pressure inside and outside the permanent total enclosure.

   The monitoring and recording devices 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 following information on a daily basis:

   a. The difference in pressure between the permanent total enclosure and the surrounding area(s).

   b. A log or record of operating time for the capture (collection) system, control device, monitoring equipment, and the associated emissions unit.

2. The permittee shall operate and maintain a continuous temperature monitor and recorder which measures and records the combustion temperature within the thermal incinerator when the emissions unit is in operation. Units shall be in degrees Fahrenheit. The monitoring and recording devices shall be capable of accurately measuring the desired parameter. The temperature monitor and recorder shall be installed, calibrated, operated and maintained in accordance with the manufacturer's recommendations, with any modifications deemed necessary by the permittee.

3. The permittee shall collect and record the following information for each day for RTO #2:

   a. A log of operating time for the capture (collection) system, control device, monitoring equipment, and the associated emissions units.

   b. All 3-hour blocks of time during which the average combustion temperature within the thermal incinerator, when any of the associated emissions unit was in operation, was more than 50 degrees Fahrenheit below the average temperature during the most recent


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emission test that demonstrated the incinerator system was in compliance with the destruction efficiency requirement.

4. The permittee shall collect and record the following information each day for emissions units K018, K019, K020, K021, K022, K023, K024, K025, K026, K027, K028 and K029.

   a. The name and identification number of each coating, solvent and support material, and cleanup material, as applied.

   b. The VOC content of each coating, solvent and support material, and cleanup material, as applied, in pounds per gallon and in pounds per gallon excluding water and exempt solvents.

   c. The number of gallons of each coating, solvent and support material, and cleanup material employed.

   d. The content of each individual HAP (i.e. xylene, toluene, and any other HAP) in each coating, solvent and support material and cleanup material employed, in pounds per gallon.

   e. The total uncontrolled VOC emission rate for all coatings, solvent and support materials, and cleanup materials employed, in pounds per day. This calculation is the summation of the product of (4.b or VOC content in pounds per gallon) times (4.c or number of gallons per day) for each coating, solvent, support material and cleanup material employed.

   f. The total uncontrolled emission rate for each individual HAP from all coatings, solvent and support materials and cleanup materials employed, in pounds per day. This calculation is the summation of the product of (4.d or individual HAP content in pounds per gallon) times (4.c or number of gallons per day) for each coating, solvent, support material and cleanup material employed.

   g. The total uncontrolled emission rate of all HAPs collectively from all coatings, solvent and support materials and cleanup materials employed, in pounds per day. This calculation is summation of each individual HAP emission rate, as determined above in 4.f.

   h. The calculated, controlled VOC emission rate for all coatings, solvent and support materials and cleanup materials, in pounds per day. The controlled, daily VOC emission rate shall be calculated using the overall control efficiency for the control equipment as determined during the most recent emission test that demonstrated that the emissions unit was in compliance. The controlled VOC emission rate is the uncontrolled VOC emission rate multiplied by (1 minus the overall control efficiency, in percentage).

   i. The calculated, controlled emission rate for each individual HAP from all coatings, solvent and support materials and cleanup materials, in pounds per day. The controlled



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emission rate shall be calculated using the overall control efficiency for the control equipment as determined during the most recent emission test that demonstrated that the emissions unit was in compliance. The controlled emission rate for each individual HAP is the uncontrolled emission rate multiplied by (1 minus the overall control efficiency, in percentage).

j. The total controlled emission rate of all HAPs collectively from all coatings, solvent and support materials and cleanup materials employed, in pounds per day. This calculation is summation of each individual HAP controlled emission rate, as determined above in 4.i.

5. The permittee shall collect and record the following information each month for emissions units K018, K019, K020, K021, K022, K023, K024, K025, K026, K027, K028 and K029.

a. The controlled emission rate for each individual HAP from all coatings, solvent and support materials and cleanup materials, in pounds per rolling 12 month period. This calculation is the summation of each daily emission rate, as recorded per Section C.4.i, for the past twelve months and then multiplied by ton/2,000 lbs.

b. The controlled emission rate for all HAPs collectively from all coatings, solvent and support materials and cleanup materials, in pounds per rolling 12 month period. This calculation is the summation of each daily emission rate, as recorded per Section C.4.j, for the past twelve months and then multiplied by ton/2,000 lbs.

c. The controlled VOC emission rate for all coatings, solvent and support materials and cleanup materials, in tons per rolling 12 month period. This calculation is the summation of each daily emission rate, as recorded per Section C.4.h, for the past twelve months and then multiplied by ton/2,000 lbs.

d. The coating usage rate as described in Section B.3 in gallons per month.

e. The solvent usage rate as described in Section B.3 in gallons per month.

6. The permit to install for this emissions unit 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 for each pollutant emitted by this emissions unit using data from the permit to install application and the SCREEN 3.0 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 table summarizes the results of the modeling from RTO #2:

| Compound | TLV ($ug.m^3$) | MAGLC = TLV/42 ($ug.m^3$) | Emission rate (g/s) | Predicted 1-hr max ground level conc. ($ug.m^3$) | MAGLC exceeded (Y/N) |
|---|---|---|---|---|---|


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| | | | | | |
|---|---|---|---|---|---|
| formaldehyde | 271 | 6 | 0.0011 | 0.12 | N |
| methanol | 262,086 | 6,240 | 0.23 | 27.41 | N |
| acetone | 1,187,116 | 28,264 | 0.01 | 1.19 | N |
| MEK | 589,775 | 14,042 | 0.32 | 37.21 | N |
| naphthalene | 52,429 | 1,248 | 0.0001 | 0.01 | N |
| cumene | 245,787 | 5,852 | 0.000001 | 0.0001 | N |
| ethylbenzene | 4343,192 | 10,338 | 0.22 | 26.29 | N |
| MIBK | 204,826 | 4,877 | 0.18 | 21.68 | N |
| toluene | 188,405 | 4,486 | 0.57 | 67.52 | N |
| hexane | 1,762,372 | 41,961 | 0.000001 | 0.0001 | N |
| xylene | 434,192 | 10,338 | 1.03 | 120.95 | N |

7. 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 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.).

   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



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(other than (VV)(1)(a)(ii)), then the permittee shall obtain a final permit to install prior to the change(s).

8. 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 satisfied 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 quarterly summaries of the following records:

   a. A log of operating time for the capture (collection) system, control device, monitoring equipment, and the associated emission unit.

   b. All 3-hour blocks of time during which the average combustion temperature within the thermal incinerator does not comply with the temperature limitation specified above.

   c. All periods of time during which the permanent total enclosure was not maintained at the required differential pressure specified above.

   d. A list of all days when the daily VOC emission rate from RTO #2 exceeded 151.8 pounds.

   e. A list of any days when noncomplying coatings were used.

   f. A list of all months when the amount of coatings (including stains, toners, glazes, topcoats and sealers) exceeded 43,196 gallons, and the amount of solvent and support materials exceeded 15,300 gallons.

2. The permittee shall also submit a quarterly deviation report when the total controlled emissions of VOC, individual HAPs, and the total aggregate HAPs from RTO #2 exceed the limits listed in A.2.d and A.2.e respectively.

## E. Testing Requirements

1. The permittee shall conduct, or have conducted, emission testing for this emission unit in accordance with the following requirements:



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a. The emission testing shall be conducted within 3 months after issuance of this permit.

b. The emission testing shall be conducted to demonstrate compliance with the VOC capture efficiency and control efficiency requirement specified in Section A.2.a. Emission testing shall also be conducted to establish the average combustion temperature within the thermal incinerator, as specified in Section B.1, and to establish the minimum pressure differential within the permanent total enclosure, as specified in Section B.2.

c. The test(s) shall be conducted while the emissions units are operating at or near their maximum capacity, unless otherwise specified or approved by the Ohio EPA Northeast District Office.

d. The capture efficiency shall be determined using Methods 204 through 204F, as specified in 40 CFR part 51, Appendix M, or the permittee may request to use an alternative method or procedure for the determination of capture efficiency in accordance with the U.S. EPA's "Guideline for Determining Capture Efficiency," dated January 9, 1995. (The Ohio EPA will consider the request, including an evaluation of the applicability, necessity, and validity of the alternative, and may approve the use of the alternative if such approval does not contravene any other applicable requirement.)

e. The control efficiency (i.e., the percent reduction in mass emissions between the inlet and outlet of the control system) shall be determined in accordance with the test methods and procedures specified in OAC rule 3745-21-10 or an approved alternative test protocol. The test methods and procedures selected shall be based on a consideration of the diversity of the organic species present and their total concentration, and on a consideration of the potential presence of interfering gases.

f. U.S. EPA Method 24 shall be used, in accordance with OAC rule 3745-21-04(B)(5), to determine the VOC contents for all coatings, solvent and support materials, and cleanup materials used during the performance test(s). If, pursuant to section 4.3 of Method 24, 40 CFR part 60, Appendix A, an owner or operator determines that Method 24 cannot be used for a particular coating, solvent and support material, or cleanup material, the permittee shall so notify the Administrator of the U.S. EPA and shall use formulation data for that coating, solvent and support material, or cleanup material to demonstrate compliance until the U.S. EPA provides alternative analytical procedures or alternative precision statements for Method 24.

g. Not later than 30 days prior to the proposed test date(s), the permittee shall submit an "Intent to Test" notification to the Ohio EPA Northeast District Office. The "Intent to Test" notification shall describe in detail the proposed test methods and procedures, the emissions unit operating parameters, the time(s) and date(s) of the test(s), and the person(s) who will be conducting the test(s). Failure to submit such notification for review and approval prior to the test(s) may result in the Ohio EPA Northeast District Office's refusal to accept the results of the emission test(s).



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Personnel from the Ohio EPA Northeast District Office shall be permitted to witness the test(s), examine the testing equipment, and acquire data and information necessary to ensure that the operation of the emissions unit and the testing procedures provide a valid characterization of the emissions from the emissions unit and/or the performance of the control equipment.

h. A comprehensive written report on the results of the emissions test(s) shall be signed by the person or persons responsible for the tests and submitted to the Ohio EPA Northeast District Office within 30 days following completion of the test(s).

2. Emission Limitation:
151.8 lbs VOC /day and 27.7 tons VOC per rolling 12 month period from RTO #2

Applicable Compliance Method:
Compliance shall be based upon the recordkeeping specified in Section C.4 and C.5.

3. Emission Limitation:
792 lbs/month and 4.75 tons per rolling 12 month period of an individual HAP from RTO #2

Applicable Compliance Method:
Compliance shall be based upon the recordkeeping specified in Section C.5.

4. Emission Limitation:
2,067 lbs/month and 12.4 tons per rolling 12 month period of all HAPs from RTO #2

Applicable Compliance Method:
Compliance shall be based upon the recordkeeping specified in Section C.5.

5. Compliance with the VOC content restrictions of each coating, solvent and support material, and cleanup material shall be based upon the use of U.S. EPA Method 24.

6. Emission Limitation:
0.7 lb NOx/hr and 3.2 tons NOx/year from the combustion of natural gas in the thermal oxidizer.

Applicable Compliance Method:
The following equation shall be used to determine the hourly emission rate.

$$E = EF \times R \times 1/H$$

where:

E = Emission rate, in lbs/hr

EF = Emission factor (AP-42, Section 1.4) for NOx is 100 lbs/mmcf.



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R = Maximum rating of the thermal oxidizer reported to be 7.5 mmBtu/hr.

H = Heating value of the natural gas, in Btu/cf. 1,020 Btu/cf was used in the emission calculation for this permit.

The yearly rate, in tons/year, shall be determined by multiplying the hourly rate (lbs/hr) as calculated above, by (# hrs of operation/year) and (ton/2,000 lbs).

**7.** Emission Limitation:
0.6 lb CO/hr and 2.7 tons CO/year from the combustion of natural gas in the thermal oxidizer.

Applicable Compliance Method:
The following equation shall be used to determine the hourly emission rate.

E = EF x R x 1/H

where:

E = Emission rate, in lbs/hr

EF = Emission factor (AP-42, Section 1.4) for CO is 84 lbs/mmcf.

R = Maximum rating of the thermal oxidizer reported to be 7.5 mmBtu/hr.

H = Heating value of the natural gas, in Btu/cf. 1,020 Btu/cf was used in the emission calculation for this permit.

The yearly rate (tons/year) shall be determined by multiplying the hourly rate (lbs/hr), as calculated above, by (# hrs of operation/year) and (ton/2,000 lbs).

## F. Miscellaneous Requirements

1. In accordance with the provisions of OAC rule 3745-35-07, the following terms and conditions of this permit to install are federally enforceable: A-F, except C.6, C.7 and C.8.

2. The terms and condition of this permit supercede those contained with PTI # 02-12833. The exemption would be that the terms and conditions for F003 (Sawdust Storage Bin #1 Load-out) and F004 (Sawdust Storage Bin #2 Load-out) contained in PTI #02-12833 are still applicable.



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## 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 |
|---|---|---|
| K021 - Spray booth 4 or overhead conveyor line 4, controlled by regenerative thermal oxidizer No. 2 | OAC rule 3745-31-05(A)(3) | Volatile Organic Compound (VOC) emissions shall not exceed 151.8 pounds per day.<br><br>Hazardous Air Pollutant (HAP) emissions shall not exceed 792 pounds per month for an individual HAP and 2,067 pounds per month for combined HAPs.<br><br>Nitrogen Oxide (NOx) emissions from the combustion of natural gas from the thermal oxidizer shall not exceed 0.7 pound per hour, 3.2 tons per year.<br><br>Carbon Monoxide (CO) emissions from the combustion of natural gas from the thermal oxidizer shall not exceed 0.6 pound per hour, 2.7 tons per year.<br><br>The requirements of this rule also include compliance with the requirements of OAC rule 3745-35-02(D) |
| | OAC rule 3745-35-07(B) | See Section A.2.a through A.2.c. |
| | OAC rule 3745-21-07(G)(2) | See Section A.2.d and A.2.e. |



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| | |
|---|---|
| | The requirements of this rule are less stringent than the requirements established pursuant to OAC rule 3745-31-05(A)(3). |

**2. Additional Terms and Conditions**

**2.a** The permittee shall design enclosure #2 that will house K018, K019, K020, K021, K022, K023, K024, K025, K026, K027, K028 and K029 in such a manner as to function as a permanent total enclosure (PTE) as defined by U.S. EPA Method 204. The use of the PTE, as defined in Reference Method 204, provides for 100% capture efficiency.

**2.b** The permittee shall install and maintain an incineration system to control the VOC emissions from the permanent total enclosure, PTE #2. The incinerator system shall have a VOC destruction efficiency of at least 99% by weight.

**2.c** The volatile organic compound (VOC) content of the Coatings (including stains, toners, glazes, topcoats and sealers) and Solvents & Support Materials used by the permittee at this facility shall not exceed the following VOC content, minus water:

| | |
|---|---|
| Coatings | 7.5 lbs VOC/gallon |
| Solvents & Support Materials | 9.0 lbs VOC/gallon |

**2.d** Emissions from the Regenerative Thermal Oxidizer (RTO) #2 shall be restricted in such a manner to limit emissions from emissions units K018, K019, K020, K021, K022, K023, K024, K025, K026, K027, K028 and K029 to the following:

i. 27.7 tons VOC per rolling 12 month period
ii. 4.75 tons per rolling 12 month period of any individual HAP
iii. 12.4 tons per rolling 12 month period of total aggregate HAPs

**2.e** Emissions from the entire facility shall not exceed the following limits:

i. 55.4 tons VOC per rolling 12 month period
ii. 9.5 tons per rolling 12 month period of any individual HAP
iii. 24.8 tons per rolling 12 month period of total aggregate HAPs

**B. Operational Restrictions**

1. The average combustion temperature within RTO #2, for any 3-hour block of time when an associated emissions unit is in operation, shall not be more than 50 degrees Fahrenheit below the average temperature during the most recent emission test that demonstrated the RTO system was in compliance with the destruction efficiency requirement.



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2. The permanent total enclosure shall be maintained under negative pressure, at a minimum pressure differential that is not less than the minimum pressure differential (inches of water) established during the most recent emission test that demonstrated the emissions unit was in compliance or 0.007 inches of water as established in Method 204, whenever the emissions unit is in operation.

3. The permittee shall limit the total coating and solvent usage for PTE #2 (K018, K019, K020, K021, K022, K023, K024, K025, K026, K027, K028 and K029) as follows:

| | |
|---|---|
| Coatings (including stains, toners, glazes, topcoats and sealers) | 43,196 gallons/month |
| Solvents & Support Materials | 15,300 gallons/month |

**C. Monitoring and/or Recordkeeping Requirements**

1. The permittee shall install, maintain and operate monitoring devices and a recorder which simultaneously measure and record the pressure inside and outside the permanent total enclosure.

   The monitoring and recording devices 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 following information on a daily basis:

   a. The difference in pressure between the permanent total enclosure and the surrounding area(s).

   b. A log or record of operating time for the capture (collection) system, control device, monitoring equipment, and the associated emissions unit.

2. The permittee shall operate and maintain a continuous temperature monitor and recorder which measures and records the combustion temperature within the thermal incinerator when the emissions unit is in operation. Units shall be in degrees Fahrenheit. The monitoring and recording devices shall be capable of accurately measuring the desired parameter. The temperature monitor and recorder shall be installed, calibrated, operated and maintained in accordance with the manufacturer's recommendations, with any modifications deemed necessary by the permittee.

3. The permittee shall collect and record the following information for each day for RTO #2:

   a. A log of operating time for the capture (collection) system, control device, monitoring equipment, and the associated emissions units.

   b. All 3-hour blocks of time during which the average combustion temperature within the thermal incinerator, when any of the associated emissions unit was in operation, was more than 50 degrees Fahrenheit below the average temperature during the most recent


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emission test that demonstrated the incinerator system was in compliance with the destruction efficiency requirement.

4. The permittee shall collect and record the following information each day for emissions units K018, K019, K020, K021, K022, K023, K024, K025, K026, K027, K028 and K029.

   a. The name and identification number of each coating, solvent and support material, and cleanup material, as applied.

   b. The VOC content of each coating, solvent and support material, and cleanup material, as applied, in pounds per gallon and in pounds per gallon excluding water and exempt solvents.

   c. The number of gallons of each coating, solvent and support material, and cleanup material employed.

   d. The content of each individual HAP (i.e. xylene, toluene, and any other HAP) in each coating, solvent and support material and cleanup material employed, in pounds per gallon.

   e. The total uncontrolled VOC emission rate for all coatings, solvent and support materials, and cleanup materials employed, in pounds per day. This calculation is the summation of the product of (4.b or VOC content in pounds per gallon) times (4.c or number of gallons per day) for each coating, solvent, support material and cleanup material employed.

   f. The total uncontrolled emission rate for each individual HAP from all coatings, solvent and support materials and cleanup materials employed, in pounds per day. This calculation is the summation of the product of (4.d or individual HAP content in pounds per gallon) times (4.c or number of gallons per day) for each coating, solvent, support material and cleanup material employed.

   g. The total uncontrolled emission rate of all HAPs collectively from all coatings, solvent and support materials and cleanup materials employed, in pounds per day. This calculation is summation of each individual HAP emission rate, as determined above in 4.f.

   h. The calculated, controlled VOC emission rate for all coatings, solvent and support materials and cleanup materials, in pounds per day. The controlled, daily VOC emission rate shall be calculated using the overall control efficiency for the control equipment as determined during the most recent emission test that demonstrated that the emissions unit was in compliance. The controlled VOC emission rate is the uncontrolled VOC emission rate multiplied by (1 minus the overall control efficiency, in percentage).

   i. The calculated, controlled emission rate for each individual HAP from all coatings, solvent and support materials and cleanup materials, in pounds per day. The controlled



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emission rate shall be calculated using the overall control efficiency for the control equipment as determined during the most recent emission test that demonstrated that the emissions unit was in compliance. The controlled emission rate for each individual HAP is the uncontrolled emission rate multiplied by (1 minus the overall control efficiency, in percentage).

j. The total controlled emission rate of all HAPs collectively from all coatings, solvent and support materials and cleanup materials employed, in pounds per day. This calculation is summation of each individual HAP controlled emission rate, as determined above in 4.i.

5. The permittee shall collect and record the following information each month for emissions units K018, K019, K020, K021, K022, K023, K024, K025, K026, K027, K028 and K029.

a. The controlled emission rate for each individual HAP from all coatings, solvent and support materials and cleanup materials, in pounds per rolling 12 month period. This calculation is the summation of each daily emission rate, as recorded per Section C.4.i, for the past twelve months and then multiplied by ton/2,000 lbs.

b. The controlled emission rate for all HAPs collectively from all coatings, solvent and support materials and cleanup materials, in pounds per rolling 12 month period. This calculation is the summation of each daily emission rate, as recorded per Section C.4.j, for the past twelve months and then multiplied by ton/2,000 lbs.

c. The controlled VOC emission rate for all coatings, solvent and support materials and cleanup materials, in tons per rolling 12 month period. This calculation is the summation of each daily emission rate, as recorded per Section C.4.h, for the past twelve months and then multiplied by ton/2,000 lbs.

d. The coating usage rate as described in Section B.3 in gallons per month.

e. The solvent usage rate as described in Section B.3 in gallons per month.

6. The permit to install for this emissions unit 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 for each pollutant emitted by this emissions unit using data from the permit to install application and the SCREEN 3.0 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 table summarizes the results of the modeling from RTO #2:

| Compound | TLV ($ug.m^3$) | MAGLC = TLV/42 ($ug.m^3$) | Emission rate (g/s) | Predicted 1-hr max ground level conc. ($ug.m^3$) | MAGLC exceeded (Y/N) |
|---|---|---|---|---|---|


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| | | | | | |
|---|---|---|---|---|---|
| formaldehyde | 271 | 6 | 0.0011 | 0.12 | N |
| methanol | 262,086 | 6,240 | 0.23 | 27.41 | N |
| acetone | 1,187,116 | 28,264 | 0.01 | 1.19 | N |
| MEK | 589,775 | 14,042 | 0.32 | 37.21 | N |
| naphthalene | 52,429 | 1,248 | 0.0001 | 0.01 | N |
| cumene | 245,787 | 5,852 | 0.000001 | 0.0001 | N |
| ethylbenzene | 4343,192 | 10,338 | 0.22 | 26.29 | N |
| MIBK | 204,826 | 4,877 | 0.18 | 21.68 | N |
| toluene | 188,405 | 4,486 | 0.57 | 67.52 | N |
| hexane | 1,762,372 | 41,961 | 0.000001 | 0.0001 | N |
| xylene | 434,192 | 10,338 | 1.03 | 120.95 | N |

7. 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 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.).

   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



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(other than (VV)(1)(a)(ii)), then the permittee shall obtain a final permit to install prior to the change(s).

8. 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 satisfied 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 quarterly summaries of the following records:

   a. A log of operating time for the capture (collection) system, control device, monitoring equipment, and the associated emission unit.

   b. All 3-hour blocks of time during which the average combustion temperature within the thermal incinerator does not comply with the temperature limitation specified above.

   c. All periods of time during which the permanent total enclosure was not maintained at the required differential pressure specified above.

   d. A list of all days when the daily VOC emission rate from RTO #2 exceeded 151.8 pounds.

   e. A list of any days when noncomplying coatings were used.

   f. A list of all months when the amount of coatings (including stains, toners, glazes, topcoats and sealers) exceeded 43,196 gallons, and the amount of solvent and support materials exceeded 15,300 gallons.

2. The permittee shall also submit a quarterly deviation report when the total controlled emissions of VOC, individual HAPs, and the total aggregate HAPs from RTO #2 exceed the limits listed in A.2.d and A.2.e respectively.

## E. Testing Requirements

1. The permittee shall conduct, or have conducted, emission testing for this emission unit in accordance with the following requirements:



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a. The emission testing shall be conducted within 3 months after issuance of this permit.

b. The emission testing shall be conducted to demonstrate compliance with the VOC capture efficiency and control efficiency requirement specified in Section A.2.a. Emission testing shall also be conducted to establish the average combustion temperature within the thermal incinerator, as specified in Section B.1, and to establish the minimum pressure differential within the permanent total enclosure, as specified in Section B.2.

c. The test(s) shall be conducted while the emissions units are operating at or near their maximum capacity, unless otherwise specified or approved by the Ohio EPA Northeast District Office.

d. The capture efficiency shall be determined using Methods 204 through 204F, as specified in 40 CFR part 51, Appendix M, or the permittee may request to use an alternative method or procedure for the determination of capture efficiency in accordance with the U.S. EPA's "Guideline for Determining Capture Efficiency," dated January 9, 1995. (The Ohio EPA will consider the request, including an evaluation of the applicability, necessity, and validity of the alternative, and may approve the use of the alternative if such approval does not contravene any other applicable requirement.)

e. The control efficiency (i.e., the percent reduction in mass emissions between the inlet and outlet of the control system) shall be determined in accordance with the test methods and procedures specified in OAC rule 3745-21-10 or an approved alternative test protocol. The test methods and procedures selected shall be based on a consideration of the diversity of the organic species present and their total concentration, and on a consideration of the potential presence of interfering gases.

f. U.S. EPA Method 24 shall be used, in accordance with OAC rule 3745-21-04(B)(5), to determine the VOC contents for all coatings, solvent and support materials, and cleanup materials used during the performance test(s). If, pursuant to section 4.3 of Method 24, 40 CFR part 60, Appendix A, an owner or operator determines that Method 24 cannot be used for a particular coating, solvent and support material, or cleanup material, the permittee shall so notify the Administrator of the U.S. EPA and shall use formulation data for that coating, solvent and support material, or cleanup material to demonstrate compliance until the U.S. EPA provides alternative analytical procedures or alternative precision statements for Method 24.

g. Not later than 30 days prior to the proposed test date(s), the permittee shall submit an "Intent to Test" notification to the Ohio EPA Northeast District Office. The "Intent to Test" notification shall describe in detail the proposed test methods and procedures, the emissions unit operating parameters, the time(s) and date(s) of the test(s), and the person(s) who will be conducting the test(s). Failure to submit such notification for review and approval prior to the test(s) may result in the Ohio EPA Northeast District Office's refusal to accept the results of the emission test(s).



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Personnel from the Ohio EPA Northeast District Office shall be permitted to witness the test(s), examine the testing equipment, and acquire data and information necessary to ensure that the operation of the emissions unit and the testing procedures provide a valid characterization of the emissions from the emissions unit and/or the performance of the control equipment.

h. A comprehensive written report on the results of the emissions test(s) shall be signed by the person or persons responsible for the tests and submitted to the Ohio EPA Northeast District Office within 30 days following completion of the test(s).

2. Emission Limitation:
151.8 lbs VOC /day and 27.7 tons VOC per rolling 12 month period from RTO #2

Applicable Compliance Method:
Compliance shall be based upon the recordkeeping specified in Section C.4 and C.5.

3. Emission Limitation:
792 lbs/month and 4.75 tons per rolling 12 month period of an individual HAP from RTO #2

Applicable Compliance Method:
Compliance shall be based upon the recordkeeping specified in Section C.5.

4. Emission Limitation:
2,067 lbs/month and 12.4 tons per rolling 12 month period of all HAPs from RTO #2

Applicable Compliance Method:
Compliance shall be based upon the recordkeeping specified in Section C.5.

5. Compliance with the VOC content restrictions of each coating, solvent and support material, and cleanup material shall be based upon the use of U.S. EPA Method 24.

6. Emission Limitation:
0.7 lb NOx/hr and 3.2 tons NOx/year from the combustion of natural gas in the thermal oxidizer.

Applicable Compliance Method:
The following equation shall be used to determine the hourly emission rate.

$$E = EF \times R \times 1/H$$

where:

E = Emission rate, in lbs/hr

EF = Emission factor (AP-42, Section 1.4) for NOx is 100 lbs/mmcf.



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R = Maximum rating of the thermal oxidizer reported to be 7.5 mmBtu/hr.

H = Heating value of the natural gas, in Btu/cf. 1,020 Btu/cf was used in the emission calculation for this permit.

The yearly rate, in tons/year, shall be determined by multiplying the hourly rate (lbs/hr) as calculated above, by (# hrs of operation/year) and (ton/2,000 lbs).

**7.** Emission Limitation:
0.6 lb CO/hr and 2.7 tons CO/year from the combustion of natural gas in the thermal oxidizer.

Applicable Compliance Method:
The following equation shall be used to determine the hourly emission rate.

E = EF x R x 1/H

where:

E = Emission rate, in lbs/hr

EF = Emission factor (AP-42, Section 1.4) for CO is 84 lbs/mmcf.

R = Maximum rating of the thermal oxidizer reported to be 7.5 mmBtu/hr.

H = Heating value of the natural gas, in Btu/cf. 1,020 Btu/cf was used in the emission calculation for this permit.

The yearly rate (tons/year) shall be determined by multiplying the hourly rate (lbs/hr), as calculated above, by (# hrs of operation/year) and (ton/2,000 lbs).

## F. Miscellaneous Requirements

1. In accordance with the provisions of OAC rule 3745-35-07, the following terms and conditions of this permit to install are federally enforceable: A-F, except C.6, C.7 and C.8.

2. The terms and condition of this permit supercede those contained with PTI # 02-12833. The exemption would be that the terms and conditions for F003 (Sawdust Storage Bin #1 Load-out) and F004 (Sawdust Storage Bin #2 Load-out) contained in PTI #02-12833 are still applicable.



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## 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 |
|---|---|---|
| K022 - Spray booth 5 of overhead conveyor line 4, controlled by regenerative thermal oxidizer No.2 | OAC rule 3745-31-05(A)(3) | Volatile Organic Compound (VOC) emissions shall not exceed 151.8 pounds per day.<br><br>Hazardous Air Pollutant (HAP) emissions shall not exceed 792 pounds per month for an individual HAP and 2,067 pounds per month for combined HAPs.<br><br>Nitrogen Oxide (NOx) emissions from the combustion of natural gas from the thermal oxidizer shall not exceed 0.7 pound per hour, 3.2 tons per year.<br><br>Carbon Monoxide (CO) emissions from the combustion of natural gas from the thermal oxidizer shall not exceed 0.6 pound per hour, 2.7 tons per year.<br><br>The requirements of this rule also include compliance with the requirements of OAC rule 3745-35-02(D) |
| | OAC rule 3745-35-07(B) | See Section A.2.a through A.2.c. |
| | OAC rule 3745-21-07(G)(2) | See Section A.2.d and A.2.e. |



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| | |
|---|---|
| | The requirements of this rule are less stringent than the requirements established pursuant to OAC rule 3745-31-05(A)(3). |

**2. Additional Terms and Conditions**

**2.a** The permittee shall design enclosure #2 that will house K018, K019, K020, K021, K022, K023, K024, K025, K026, K027, K028 and K029 in such a manner as to function as a permanent total enclosure (PTE) as defined by U.S. EPA Method 204. The use of the PTE, as defined in Reference Method 204, provides for 100% capture efficiency.

**2.b** The permittee shall install and maintain an incineration system to control the VOC emissions from the permanent total enclosure, PTE #2. The incinerator system shall have a VOC destruction efficiency of at least 99% by weight.

**2.c** The volatile organic compound (VOC) content of the Coatings (including stains, toners, glazes, topcoats and sealers) and Solvents & Support Materials used by the permittee at this facility shall not exceed the following VOC content, minus water:

| | |
|---|---|
| Coatings | 7.5 lbs VOC/gallon |
| Solvents & Support Materials | 9.0 lbs VOC/gallon |

**2.d** Emissions from the Regenerative Thermal Oxidizer (RTO) #2 shall be restricted in such a manner to limit emissions from emissions units K018, K019, K020, K021, K022, K023, K024, K025, K026, K027, K028 and K029 to the following:

i. 27.7 tons VOC per rolling 12 month period
ii. 4.75 tons per rolling 12 month period of any individual HAP
iii. 12.4 tons per rolling 12 month period of total aggregate HAPs

**2.e** Emissions from the entire facility shall not exceed the following limits:

i. 55.4 tons VOC per rolling 12 month period
ii. 9.5 tons per rolling 12 month period of any individual HAP
iii. 24.8 tons per rolling 12 month period of total aggregate HAPs

**B. Operational Restrictions**

1. The average combustion temperature within RTO #2, for any 3-hour block of time when an associated emissions unit is in operation, shall not be more than 50 degrees Fahrenheit below the average temperature during the most recent emission test that demonstrated the RTO system was in compliance with the destruction efficiency requirement.



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2. The permanent total enclosure shall be maintained under negative pressure, at a minimum pressure differential that is not less than the minimum pressure differential (inches of water) established during the most recent emission test that demonstrated the emissions unit was in compliance or 0.007 inches of water as established in Method 204, whenever the emissions unit is in operation.

3. The permittee shall limit the total coating and solvent usage for PTE #2 (K018, K019, K020, K021, K022, K023, K024, K025, K026, K027, K028 and K029) as follows:

| | |
|---|---|
| Coatings (including stains, toners, glazes, topcoats and sealers) | 43,196 gallons/month |
| Solvents & Support Materials | 15,300 gallons/month |

## C. Monitoring and/or Recordkeeping Requirements

1. The permittee shall install, maintain and operate monitoring devices and a recorder which simultaneously measure and record the pressure inside and outside the permanent total enclosure.

   The monitoring and recording devices 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 following information on a daily basis:

   a. The difference in pressure between the permanent total enclosure and the surrounding area(s).

   b. A log or record of operating time for the capture (collection) system, control device, monitoring equipment, and the associated emissions unit.

2. The permittee shall operate and maintain a continuous temperature monitor and recorder which measures and records the combustion temperature within the thermal incinerator when the emissions unit is in operation. Units shall be in degrees Fahrenheit. The monitoring and recording devices shall be capable of accurately measuring the desired parameter. The temperature monitor and recorder shall be installed, calibrated, operated and maintained in accordance with the manufacturer's recommendations, with any modifications deemed necessary by the permittee.

3. The permittee shall collect and record the following information for each day for RTO #2:

   a. A log of operating time for the capture (collection) system, control device, monitoring equipment, and the associated emissions units.

   b. All 3-hour blocks of time during which the average combustion temperature within the thermal incinerator, when any of the associated emissions unit was in operation, was more than 50 degrees Fahrenheit below the average temperature during the most recent


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emission test that demonstrated the incinerator system was in compliance with the destruction efficiency requirement.

4. The permittee shall collect and record the following information each day for emissions units K018, K019, K020, K021, K022, K023, K024, K025, K026, K027, K028 and K029.

   a. The name and identification number of each coating, solvent and support material, and cleanup material, as applied.

   b. The VOC content of each coating, solvent and support material, and cleanup material, as applied, in pounds per gallon and in pounds per gallon excluding water and exempt solvents.

   c. The number of gallons of each coating, solvent and support material, and cleanup material employed.

   d. The content of each individual HAP (i.e. xylene, toluene, and any other HAP) in each coating, solvent and support material and cleanup material employed, in pounds per gallon.

   e. The total uncontrolled VOC emission rate for all coatings, solvent and support materials, and cleanup materials employed, in pounds per day. This calculation is the summation of the product of (4.b or VOC content in pounds per gallon) times (4.c or number of gallons per day) for each coating, solvent, support material and cleanup material employed.

   f. The total uncontrolled emission rate for each individual HAP from all coatings, solvent and support materials and cleanup materials employed, in pounds per day. This calculation is the summation of the product of (4.d or individual HAP content in pounds per gallon) times (4.c or number of gallons per day) for each coating, solvent, support material and cleanup material employed.

   g. The total uncontrolled emission rate of all HAPs collectively from all coatings, solvent and support materials and cleanup materials employed, in pounds per day. This calculation is summation of each individual HAP emission rate, as determined above in 4.f.

   h. The calculated, controlled VOC emission rate for all coatings, solvent and support materials and cleanup materials, in pounds per day. The controlled, daily VOC emission rate shall be calculated using the overall control efficiency for the control equipment as determined during the most recent emission test that demonstrated that the emissions unit was in compliance. The controlled VOC emission rate is the uncontrolled VOC emission rate multiplied by (1 minus the overall control efficiency, in percentage).

   i. The calculated, controlled emission rate for each individual HAP from all coatings, solvent and support materials and cleanup materials, in pounds per day. The controlled



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emission rate shall be calculated using the overall control efficiency for the control equipment as determined during the most recent emission test that demonstrated that the emissions unit was in compliance. The controlled emission rate for each individual HAP is the uncontrolled emission rate multiplied by (1 minus the overall control efficiency, in percentage).

j. The total controlled emission rate of all HAPs collectively from all coatings, solvent and support materials and cleanup materials employed, in pounds per day. This calculation is summation of each individual HAP controlled emission rate, as determined above in 4.i.

5. The permittee shall collect and record the following information each month for emissions units K018, K019, K020, K021, K022, K023, K024, K025, K026, K027, K028 and K029.

a. The controlled emission rate for each individual HAP from all coatings, solvent and support materials and cleanup materials, in pounds per rolling 12 month period. This calculation is the summation of each daily emission rate, as recorded per Section C.4.i, for the past twelve months and then multiplied by ton/2,000 lbs.

b. The controlled emission rate for all HAPs collectively from all coatings, solvent and support materials and cleanup materials, in pounds per rolling 12 month period. This calculation is the summation of each daily emission rate, as recorded per Section C.4.j, for the past twelve months and then multiplied by ton/2,000 lbs.

c. The controlled VOC emission rate for all coatings, solvent and support materials and cleanup materials, in tons per rolling 12 month period. This calculation is the summation of each daily emission rate, as recorded per Section C.4.h, for the past twelve months and then multiplied by ton/2,000 lbs.

d. The coating usage rate as described in Section B.3 in gallons per month.

e. The solvent usage rate as described in Section B.3 in gallons per month.

6. The permit to install for this emissions unit 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 for each pollutant emitted by this emissions unit using data from the permit to install application and the SCREEN 3.0 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 table summarizes the results of the modeling from RTO #2:

| Compound | TLV ($ug.m^3$) | MAGLC = TLV/42 ($ug.m^3$) | Emission rate (g/s) | Predicted 1-hr max ground level conc. ($ug.m^3$) | MAGLC exceeded (Y/N) |
|---|---|---|---|---|---|


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| | | | | | |
|---|---|---|---|---|---|
| formaldehyde | 271 | 6 | 0.0011 | 0.12 | N |
| methanol | 262,086 | 6,240 | 0.23 | 27.41 | N |
| acetone | 1,187,116 | 28,264 | 0.01 | 1.19 | N |
| MEK | 589,775 | 14,042 | 0.32 | 37.21 | N |
| naphthalene | 52,429 | 1,248 | 0.0001 | 0.01 | N |
| cumene | 245,787 | 5,852 | 0.000001 | 0.0001 | N |
| ethylbenzene | 4343,192 | 10,338 | 0.22 | 26.29 | N |
| MIBK | 204,826 | 4,877 | 0.18 | 21.68 | N |
| toluene | 188,405 | 4,486 | 0.57 | 67.52 | N |
| hexane | 1,762,372 | 41,961 | 0.000001 | 0.0001 | N |
| xylene | 434,192 | 10,338 | 1.03 | 120.95 | N |

7. 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 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.).

   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



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(other than (VV)(1)(a)(ii)), then the permittee shall obtain a final permit to install prior to the change(s).

8. 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 satisfied 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 quarterly summaries of the following records:

   a. A log of operating time for the capture (collection) system, control device, monitoring equipment, and the associated emission unit.

   b. All 3-hour blocks of time during which the average combustion temperature within the thermal incinerator does not comply with the temperature limitation specified above.

   c. All periods of time during which the permanent total enclosure was not maintained at the required differential pressure specified above.

   d. A list of all days when the daily VOC emission rate from RTO #2 exceeded 151.8 pounds.

   e. A list of any days when noncomplying coatings were used.

   f. A list of all months when the amount of coatings (including stains, toners, glazes, topcoats and sealers) exceeded 43,196 gallons, and the amount of solvent and support materials exceeded 15,300 gallons.

2. The permittee shall also submit a quarterly deviation report when the total controlled emissions of VOC, individual HAPs, and the total aggregate HAPs from RTO #2 exceed the limits listed in A.2.d and A.2.e respectively.

## E. Testing Requirements

1. The permittee shall conduct, or have conducted, emission testing for this emission unit in accordance with the following requirements:



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a. The emission testing shall be conducted within 3 months after issuance of this permit.

b. The emission testing shall be conducted to demonstrate compliance with the VOC capture efficiency and control efficiency requirement specified in Section A.2.a. Emission testing shall also be conducted to establish the average combustion temperature within the thermal incinerator, as specified in Section B.1, and to establish the minimum pressure differential within the permanent total enclosure, as specified in Section B.2.

c. The test(s) shall be conducted while the emissions units are operating at or near their maximum capacity, unless otherwise specified or approved by the Ohio EPA Northeast District Office.

d. The capture efficiency shall be determined using Methods 204 through 204F, as specified in 40 CFR part 51, Appendix M, or the permittee may request to use an alternative method or procedure for the determination of capture efficiency in accordance with the U.S. EPA's "Guideline for Determining Capture Efficiency," dated January 9, 1995. (The Ohio EPA will consider the request, including an evaluation of the applicability, necessity, and validity of the alternative, and may approve the use of the alternative if such approval does not contravene any other applicable requirement.)

e. The control efficiency (i.e., the percent reduction in mass emissions between the inlet and outlet of the control system) shall be determined in accordance with the test methods and procedures specified in OAC rule 3745-21-10 or an approved alternative test protocol. The test methods and procedures selected shall be based on a consideration of the diversity of the organic species present and their total concentration, and on a consideration of the potential presence of interfering gases.

f. U.S. EPA Method 24 shall be used, in accordance with OAC rule 3745-21-04(B)(5), to determine the VOC contents for all coatings, solvent and support materials, and cleanup materials used during the performance test(s). If, pursuant to section 4.3 of Method 24, 40 CFR part 60, Appendix A, an owner or operator determines that Method 24 cannot be used for a particular coating, solvent and support material, or cleanup material, the permittee shall so notify the Administrator of the U.S. EPA and shall use formulation data for that coating, solvent and support material, or cleanup material to demonstrate compliance until the U.S. EPA provides alternative analytical procedures or alternative precision statements for Method 24.

g. Not later than 30 days prior to the proposed test date(s), the permittee shall submit an "Intent to Test" notification to the Ohio EPA Northeast District Office. The "Intent to Test" notification shall describe in detail the proposed test methods and procedures, the emissions unit operating parameters, the time(s) and date(s) of the test(s), and the person(s) who will be conducting the test(s). Failure to submit such notification for review and approval prior to the test(s) may result in the Ohio EPA Northeast District Office's refusal to accept the results of the emission test(s).



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Personnel from the Ohio EPA Northeast District Office shall be permitted to witness the test(s), examine the testing equipment, and acquire data and information necessary to ensure that the operation of the emissions unit and the testing procedures provide a valid characterization of the emissions from the emissions unit and/or the performance of the control equipment.

h. A comprehensive written report on the results of the emissions test(s) shall be signed by the person or persons responsible for the tests and submitted to the Ohio EPA Northeast District Office within 30 days following completion of the test(s).

2. Emission Limitation:
151.8 lbs VOC /day and 27.7 tons VOC per rolling 12 month period from RTO #2

Applicable Compliance Method:
Compliance shall be based upon the recordkeeping specified in Section C.4 and C.5.

3. Emission Limitation:
792 lbs/month and 4.75 tons per rolling 12 month period of an individual HAP from RTO #2

Applicable Compliance Method:
Compliance shall be based upon the recordkeeping specified in Section C.5.

4. Emission Limitation:
2,067 lbs/month and 12.4 tons per rolling 12 month period of all HAPs from RTO #2

Applicable Compliance Method:
Compliance shall be based upon the recordkeeping specified in Section C.5.

5. Compliance with the VOC content restrictions of each coating, solvent and support material, and cleanup material shall be based upon the use of U.S. EPA Method 24.

6. Emission Limitation:
0.7 lb NOx/hr and 3.2 tons NOx/year from the combustion of natural gas in the thermal oxidizer.

Applicable Compliance Method:
The following equation shall be used to determine the hourly emission rate.

$$E = EF \times R \times 1/H$$

where:

E = Emission rate, in lbs/hr

EF = Emission factor (AP-42, Section 1.4) for NOx is 100 lbs/mmcf.



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R = Maximum rating of the thermal oxidizer reported to be 7.5 mmBtu/hr.

H = Heating value of the natural gas, in Btu/cf. 1,020 Btu/cf was used in the emission calculation for this permit.

The yearly rate, in tons/year, shall be determined by multiplying the hourly rate (lbs/hr) as calculated above, by (# hrs of operation/year) and (ton/2,000 lbs).

**7.** Emission Limitation:
0.6 lb CO/hr and 2.7 tons CO/year from the combustion of natural gas in the thermal oxidizer.

Applicable Compliance Method:
The following equation shall be used to determine the hourly emission rate.

E = EF x R x 1/H

where:

E = Emission rate, in lbs/hr

EF = Emission factor (AP-42, Section 1.4) for CO is 84 lbs/mmcf.

R = Maximum rating of the thermal oxidizer reported to be 7.5 mmBtu/hr.

H = Heating value of the natural gas, in Btu/cf. 1,020 Btu/cf was used in the emission calculation for this permit.

The yearly rate (tons/year) shall be determined by multiplying the hourly rate (lbs/hr), as calculated above, by (# hrs of operation/year) and (ton/2,000 lbs).

## F. Miscellaneous Requirements

1. In accordance with the provisions of OAC rule 3745-35-07, the following terms and conditions of this permit to install are federally enforceable: A-F, except C.6, C.7 and C.8.

2. The terms and condition of this permit supercede those contained with PTI # 02-12833. The exemption would be that the terms and conditions for F003 (Sawdust Storage Bin #1 Load-out) and F004 (Sawdust Storage Bin #2 Load-out) contained in PTI #02-12833 are still applicable.



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## 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 |
|---|---|---|
| K023 - Spray booth 6 of conveyor line 4, controlled by regenerative thermal oxidizer No. 2 | OAC rule 3745-31-05(A)(3) | Volatile Organic Compound (VOC) emissions shall not exceed 151.8 pounds per day.<br><br>Hazardous Air Pollutant (HAP) emissions shall not exceed 792 pounds per month for an individual HAP and 2,067 pounds per month for combined HAPs.<br><br>Nitrogen Oxide (NOx) emissions from the combustion of natural gas from the thermal oxidizer shall not exceed 0.7 pound per hour, 3.2 tons per year.<br><br>Carbon Monoxide (CO) emissions from the combustion of natural gas from the thermal oxidizer shall not exceed 0.6 pound per hour, 2.7 tons per year.<br><br>The requirements of this rule also include compliance with the requirements of OAC rule 3745-35-02(D) |
| | OAC rule 3745-35-07(B) | See Section A.2.a through A.2.c. |
| | OAC rule 3745-21-07(G)(2) | See Section A.2.d and A.2.e. |



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| | |
|---|---|
| | The requirements of this rule are less stringent than the requirements established pursuant to OAC rule 3745-31-05(A)(3). |

**2. Additional Terms and Conditions**

**2.a** The permittee shall design enclosure #2 that will house K018, K019, K020, K021, K022, K023, K024, K025, K026, K027, K028 and K029 in such a manner as to function as a permanent total enclosure (PTE) as defined by U.S. EPA Method 204. The use of the PTE, as defined in Reference Method 204, provides for 100% capture efficiency.

**2.b** The permittee shall install and maintain an incineration system to control the VOC emissions from the permanent total enclosure, PTE #2. The incinerator system shall have a VOC destruction efficiency of at least 99% by weight.

**2.c** The volatile organic compound (VOC) content of the Coatings (including stains, toners, glazes, topcoats and sealers) and Solvents & Support Materials used by the permittee at this facility shall not exceed the following VOC content, minus water:

| | |
|---|---|
| Coatings | 7.5 lbs VOC/gallon |
| Solvents & Support Materials | 9.0 lbs VOC/gallon |

**2.d** Emissions from the Regenerative Thermal Oxidizer (RTO) #2 shall be restricted in such a manner to limit emissions from emissions units K018, K019, K020, K021, K022, K023, K024, K025, K026, K027, K028 and K029 to the following:

i. 27.7 tons VOC per rolling 12 month period
ii. 4.75 tons per rolling 12 month period of any individual HAP
iii. 12.4 tons per rolling 12 month period of total aggregate HAPs

**2.e** Emissions from the entire facility shall not exceed the following limits:

i. 55.4 tons VOC per rolling 12 month period
ii. 9.5 tons per rolling 12 month period of any individual HAP
iii. 24.8 tons per rolling 12 month period of total aggregate HAPs

**B. Operational Restrictions**

1. The average combustion temperature within RTO #2, for any 3-hour block of time when an associated emissions unit is in operation, shall not be more than 50 degrees Fahrenheit below the average temperature during the most recent emission test that demonstrated the RTO system was in compliance with the destruction efficiency requirement.



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2. The permanent total enclosure shall be maintained under negative pressure, at a minimum pressure differential that is not less than the minimum pressure differential (inches of water) established during the most recent emission test that demonstrated the emissions unit was in compliance or 0.007 inches of water as established in Method 204, whenever the emissions unit is in operation.

3. The permittee shall limit the total coating and solvent usage for PTE #2 (K018, K019, K020, K021, K022, K023, K024, K025, K026, K027, K028 and K029) as follows:

| | |
|---|---|
| Coatings (including stains, toners, glazes, topcoats and sealers) | 43,196 gallons/month |
| Solvents & Support Materials | 15,300 gallons/month |

**C. Monitoring and/or Recordkeeping Requirements**

1. The permittee shall install, maintain and operate monitoring devices and a recorder which simultaneously measure and record the pressure inside and outside the permanent total enclosure.

   The monitoring and recording devices 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 following information on a daily basis:

   a. The difference in pressure between the permanent total enclosure and the surrounding area(s).

   b. A log or record of operating time for the capture (collection) system, control device, monitoring equipment, and the associated emissions unit.

2. The permittee shall operate and maintain a continuous temperature monitor and recorder which measures and records the combustion temperature within the thermal incinerator when the emissions unit is in operation. Units shall be in degrees Fahrenheit. The monitoring and recording devices shall be capable of accurately measuring the desired parameter. The temperature monitor and recorder shall be installed, calibrated, operated and maintained in accordance with the manufacturer's recommendations, with any modifications deemed necessary by the permittee.

3. The permittee shall collect and record the following information for each day for RTO #2:

   a. A log of operating time for the capture (collection) system, control device, monitoring equipment, and the associated emissions units.

   b. All 3-hour blocks of time during which the average combustion temperature within the thermal incinerator, when any of the associated emissions unit was in operation, was more than 50 degrees Fahrenheit below the average temperature during the most recent


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emission test that demonstrated the incinerator system was in compliance with the destruction efficiency requirement.

4. The permittee shall collect and record the following information each day for emissions units K018, K019, K020, K021, K022, K023, K024, K025, K026, K027, K028 and K029.

   a. The name and identification number of each coating, solvent and support material, and cleanup material, as applied.

   b. The VOC content of each coating, solvent and support material, and cleanup material, as applied, in pounds per gallon and in pounds per gallon excluding water and exempt solvents.

   c. The number of gallons of each coating, solvent and support material, and cleanup material employed.

   d. The content of each individual HAP (i.e. xylene, toluene, and any other HAP) in each coating, solvent and support material and cleanup material employed, in pounds per gallon.

   e. The total uncontrolled VOC emission rate for all coatings, solvent and support materials, and cleanup materials employed, in pounds per day. This calculation is the summation of the product of (4.b or VOC content in pounds per gallon) times (4.c or number of gallons per day) for each coating, solvent, support material and cleanup material employed.

   f. The total uncontrolled emission rate for each individual HAP from all coatings, solvent and support materials and cleanup materials employed, in pounds per day. This calculation is the summation of the product of (4.d or individual HAP content in pounds per gallon) times (4.c or number of gallons per day) for each coating, solvent, support material and cleanup material employed.

   g. The total uncontrolled emission rate of all HAPs collectively from all coatings, solvent and support materials and cleanup materials employed, in pounds per day. This calculation is summation of each individual HAP emission rate, as determined above in 4.f.

   h. The calculated, controlled VOC emission rate for all coatings, solvent and support materials and cleanup materials, in pounds per day. The controlled, daily VOC emission rate shall be calculated using the overall control efficiency for the control equipment as determined during the most recent emission test that demonstrated that the emissions unit was in compliance. The controlled VOC emission rate is the uncontrolled VOC emission rate multiplied by (1 minus the overall control efficiency, in percentage).

   i. The calculated, controlled emission rate for each individual HAP from all coatings, solvent and support materials and cleanup materials, in pounds per day. The controlled



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emission rate shall be calculated using the overall control efficiency for the control equipment as determined during the most recent emission test that demonstrated that the emissions unit was in compliance. The controlled emission rate for each individual HAP is the uncontrolled emission rate multiplied by (1 minus the overall control efficiency, in percentage).

j. The total controlled emission rate of all HAPs collectively from all coatings, solvent and support materials and cleanup materials employed, in pounds per day. This calculation is summation of each individual HAP controlled emission rate, as determined above in 4.i.

5. The permittee shall collect and record the following information each month for emissions units K018, K019, K020, K021, K022, K023, K024, K025, K026, K027, K028 and K029.

a. The controlled emission rate for each individual HAP from all coatings, solvent and support materials and cleanup materials, in pounds per rolling 12 month period. This calculation is the summation of each daily emission rate, as recorded per Section C.4.i, for the past twelve months and then multiplied by ton/2,000 lbs.

b. The controlled emission rate for all HAPs collectively from all coatings, solvent and support materials and cleanup materials, in pounds per rolling 12 month period. This calculation is the summation of each daily emission rate, as recorded per Section C.4.j, for the past twelve months and then multiplied by ton/2,000 lbs.

c. The controlled VOC emission rate for all coatings, solvent and support materials and cleanup materials, in tons per rolling 12 month period. This calculation is the summation of each daily emission rate, as recorded per Section C.4.h, for the past twelve months and then multiplied by ton/2,000 lbs.

d. The coating usage rate as described in Section B.3 in gallons per month.

e. The solvent usage rate as described in Section B.3 in gallons per month.

6. The permit to install for this emissions unit 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 for each pollutant emitted by this emissions unit using data from the permit to install application and the SCREEN 3.0 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 table summarizes the results of the modeling from RTO #2:

| Compound | TLV ($ug.m^3$) | MAGLC = TLV/42 ($ug.m^3$) | Emission rate (g/s) | Predicted 1-hr max ground level conc. ($ug.m^3$) | MAGLC exceeded (Y/N) |
|---|---|---|---|---|---|


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| | | | | | |
|---|---|---|---|---|---|
| formaldehyde | 271 | 6 | 0.0011 | 0.12 | N |
| methanol | 262,086 | 6,240 | 0.23 | 27.41 | N |
| acetone | 1,187,116 | 28,264 | 0.01 | 1.19 | N |
| MEK | 589,775 | 14,042 | 0.32 | 37.21 | N |
| naphthalene | 52,429 | 1,248 | 0.0001 | 0.01 | N |
| cumene | 245,787 | 5,852 | 0.000001 | 0.0001 | N |
| ethylbenzene | 4343,192 | 10,338 | 0.22 | 26.29 | N |
| MIBK | 204,826 | 4,877 | 0.18 | 21.68 | N |
| toluene | 188,405 | 4,486 | 0.57 | 67.52 | N |
| hexane | 1,762,372 | 41,961 | 0.000001 | 0.0001 | N |
| xylene | 434,192 | 10,338 | 1.03 | 120.95 | N |

7. 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 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.).

   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



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(other than (VV)(1)(a)(ii)), then the permittee shall obtain a final permit to install prior to the change(s).

8. 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 satisfied 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 quarterly summaries of the following records:

   a. A log of operating time for the capture (collection) system, control device, monitoring equipment, and the associated emission unit.

   b. All 3-hour blocks of time during which the average combustion temperature within the thermal incinerator does not comply with the temperature limitation specified above.

   c. All periods of time during which the permanent total enclosure was not maintained at the required differential pressure specified above.

   d. A list of all days when the daily VOC emission rate from RTO #2 exceeded 151.8 pounds.

   e. A list of any days when noncomplying coatings were used.

   f. A list of all months when the amount of coatings (including stains, toners, glazes, topcoats and sealers) exceeded 43,196 gallons, and the amount of solvent and support materials exceeded 15,300 gallons.

2. The permittee shall also submit a quarterly deviation report when the total controlled emissions of VOC, individual HAPs, and the total aggregate HAPs from RTO #2 exceed the limits listed in A.2.d and A.2.e respectively.

## E. Testing Requirements

1. The permittee shall conduct, or have conducted, emission testing for this emission unit in accordance with the following requirements:



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a. The emission testing shall be conducted within 3 months after issuance of this permit.

b. The emission testing shall be conducted to demonstrate compliance with the VOC capture efficiency and control efficiency requirement specified in Section A.2.a. Emission testing shall also be conducted to establish the average combustion temperature within the thermal incinerator, as specified in Section B.1, and to establish the minimum pressure differential within the permanent total enclosure, as specified in Section B.2.

c. The test(s) shall be conducted while the emissions units are operating at or near their maximum capacity, unless otherwise specified or approved by the Ohio EPA Northeast District Office.

d. The capture efficiency shall be determined using Methods 204 through 204F, as specified in 40 CFR part 51, Appendix M, or the permittee may request to use an alternative method or procedure for the determination of capture efficiency in accordance with the U.S. EPA's "Guideline for Determining Capture Efficiency," dated January 9, 1995. (The Ohio EPA will consider the request, including an evaluation of the applicability, necessity, and validity of the alternative, and may approve the use of the alternative if such approval does not contravene any other applicable requirement.)

e. The control efficiency (i.e., the percent reduction in mass emissions between the inlet and outlet of the control system) shall be determined in accordance with the test methods and procedures specified in OAC rule 3745-21-10 or an approved alternative test protocol. The test methods and procedures selected shall be based on a consideration of the diversity of the organic species present and their total concentration, and on a consideration of the potential presence of interfering gases.

f. U.S. EPA Method 24 shall be used, in accordance with OAC rule 3745-21-04(B)(5), to determine the VOC contents for all coatings, solvent and support materials, and cleanup materials used during the performance test(s). If, pursuant to section 4.3 of Method 24, 40 CFR part 60, Appendix A, an owner or operator determines that Method 24 cannot be used for a particular coating, solvent and support material, or cleanup material, the permittee shall so notify the Administrator of the U.S. EPA and shall use formulation data for that coating, solvent and support material, or cleanup material to demonstrate compliance until the U.S. EPA provides alternative analytical procedures or alternative precision statements for Method 24.

g. Not later than 30 days prior to the proposed test date(s), the permittee shall submit an "Intent to Test" notification to the Ohio EPA Northeast District Office. The "Intent to Test" notification shall describe in detail the proposed test methods and procedures, the emissions unit operating parameters, the time(s) and date(s) of the test(s), and the person(s) who will be conducting the test(s). Failure to submit such notification for review and approval prior to the test(s) may result in the Ohio EPA Northeast District Office's refusal to accept the results of the emission test(s).



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Personnel from the Ohio EPA Northeast District Office shall be permitted to witness the test(s), examine the testing equipment, and acquire data and information necessary to ensure that the operation of the emissions unit and the testing procedures provide a valid characterization of the emissions from the emissions unit and/or the performance of the control equipment.

h. A comprehensive written report on the results of the emissions test(s) shall be signed by the person or persons responsible for the tests and submitted to the Ohio EPA Northeast District Office within 30 days following completion of the test(s).

2. Emission Limitation:
151.8 lbs VOC /day and 27.7 tons VOC per rolling 12 month period from RTO #2

Applicable Compliance Method:
Compliance shall be based upon the recordkeeping specified in Section C.4 and C.5.

3. Emission Limitation:
792 lbs/month and 4.75 tons per rolling 12 month period of an individual HAP from RTO #2

Applicable Compliance Method:
Compliance shall be based upon the recordkeeping specified in Section C.5.

4. Emission Limitation:
2,067 lbs/month and 12.4 tons per rolling 12 month period of all HAPs from RTO #2

Applicable Compliance Method:
Compliance shall be based upon the recordkeeping specified in Section C.5.

5. Compliance with the VOC content restrictions of each coating, solvent and support material, and cleanup material shall be based upon the use of U.S. EPA Method 24.

6. Emission Limitation:
0.7 lb NOx/hr and 3.2 tons NOx/year from the combustion of natural gas in the thermal oxidizer.

Applicable Compliance Method:
The following equation shall be used to determine the hourly emission rate.

$$E = EF \times R \times 1/H$$

where:

E = Emission rate, in lbs/hr

EF = Emission factor (AP-42, Section 1.4) for NOx is 100 lbs/mmcf.



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R = Maximum rating of the thermal oxidizer reported to be 7.5 mmBtu/hr.

H = Heating value of the natural gas, in Btu/cf. 1,020 Btu/cf was used in the emission calculation for this permit.

The yearly rate, in tons/year, shall be determined by multiplying the hourly rate (lbs/hr) as calculated above, by (# hrs of operation/year) and (ton/2,000 lbs).

**7.** Emission Limitation:
0.6 lb CO/hr and 2.7 tons CO/year from the combustion of natural gas in the thermal oxidizer.

Applicable Compliance Method:
The following equation shall be used to determine the hourly emission rate.

E = EF x R x 1/H

where:

E = Emission rate, in lbs/hr

EF = Emission factor (AP-42, Section 1.4) for CO is 84 lbs/mmcf.

R = Maximum rating of the thermal oxidizer reported to be 7.5 mmBtu/hr.

H = Heating value of the natural gas, in Btu/cf. 1,020 Btu/cf was used in the emission calculation for this permit.

The yearly rate (tons/year) shall be determined by multiplying the hourly rate (lbs/hr), as calculated above, by (# hrs of operation/year) and (ton/2,000 lbs).

## F. Miscellaneous Requirements

1. In accordance with the provisions of OAC rule 3745-35-07, the following terms and conditions of this permit to install are federally enforceable: A-F, except C.6, C.7 and C.8.

2. The terms and condition of this permit supercede those contained with PTI # 02-12833. The exemption would be that the terms and conditions for F003 (Sawdust Storage Bin #1 Load-out) and F004 (Sawdust Storage Bin #2 Load-out) contained in PTI #02-12833 are still applicable.



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## 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 |
|---|---|---|
| K024 - Spray booth 7 of conveyor line 4, controlled by regenerative thermal oxidizer No. 2 | OAC rule 3745-31-05(A)(3) | Volatile Organic Compound (VOC) emissions shall not exceed 151.8 pounds per day.<br><br>Hazardous Air Pollutant (HAP) emissions shall not exceed 792 pounds per month for an individual HAP and 2,067 pounds per month for combined HAPs.<br><br>Nitrogen Oxide (NOx) emissions from the combustion of natural gas from the thermal oxidizer shall not exceed 0.7 pound per hour, 3.2 tons per year.<br><br>Carbon Monoxide (CO) emissions from the combustion of natural gas from the thermal oxidizer shall not exceed 0.6 pound per hour, 2.7 tons per year.<br><br>The requirements of this rule also include compliance with the requirements of OAC rule 3745-35-02(D) |
| | OAC rule 3745-35-07(B) | See Section A.2.a through A.2.c. |
| | OAC rule 3745-21-07(G)(2) | See Section A.2.d and A.2.e. |



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| | |
|---|---|
| | The requirements of this rule are less stringent than the requirements established pursuant to OAC rule 3745-31-05(A)(3). |

**2. Additional Terms and Conditions**

**2.a** The permittee shall design enclosure #2 that will house K018, K019, K020, K021, K022, K023, K024, K025, K026, K027, K028 and K029 in such a manner as to function as a permanent total enclosure (PTE) as defined by U.S. EPA Method 204. The use of the PTE, as defined in Reference Method 204, provides for 100% capture efficiency.

**2.b** The permittee shall install and maintain an incineration system to control the VOC emissions from the permanent total enclosure, PTE #2. The incinerator system shall have a VOC destruction efficiency of at least 99% by weight.

**2.c** The volatile organic compound (VOC) content of the Coatings (including stains, toners, glazes, topcoats and sealers) and Solvents & Support Materials used by the permittee at this facility shall not exceed the following VOC content, minus water:

| | |
|---|---|
| Coatings | 7.5 lbs VOC/gallon |
| Solvents & Support Materials | 9.0 lbs VOC/gallon |

**2.d** Emissions from the Regenerative Thermal Oxidizer (RTO) #2 shall be restricted in such a manner to limit emissions from emissions units K018, K019, K020, K021, K022, K023, K024, K025, K026, K027, K028 and K029 to the following:

i. 27.7 tons VOC per rolling 12 month period
ii. 4.75 tons per rolling 12 month period of any individual HAP
iii. 12.4 tons per rolling 12 month period of total aggregate HAPs

**2.e** Emissions from the entire facility shall not exceed the following limits:

i. 55.4 tons VOC per rolling 12 month period
ii. 9.5 tons per rolling 12 month period of any individual HAP
iii. 24.8 tons per rolling 12 month period of total aggregate HAPs

**B. Operational Restrictions**

1. The average combustion temperature within RTO #2, for any 3-hour block of time when an associated emissions unit is in operation, shall not be more than 50 degrees Fahrenheit below the average temperature during the most recent emission test that demonstrated the RTO system was in compliance with the destruction efficiency requirement.



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2. The permanent total enclosure shall be maintained under negative pressure, at a minimum pressure differential that is not less than the minimum pressure differential (inches of water) established during the most recent emission test that demonstrated the emissions unit was in compliance or 0.007 inches of water as established in Method 204, whenever the emissions unit is in operation.

3. The permittee shall limit the total coating and solvent usage for PTE #2 (K018, K019, K020, K021, K022, K023, K024, K025, K026, K027, K028 and K029) as follows:

| | |
|---|---|
| Coatings (including stains, toners, glazes, topcoats and sealers) | 43,196 gallons/month |
| Solvents & Support Materials | 15,300 gallons/month |

## C. Monitoring and/or Recordkeeping Requirements

1. The permittee shall install, maintain and operate monitoring devices and a recorder which simultaneously measure and record the pressure inside and outside the permanent total enclosure.

   The monitoring and recording devices 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 following information on a daily basis:

   a. The difference in pressure between the permanent total enclosure and the surrounding area(s).

   b. A log or record of operating time for the capture (collection) system, control device, monitoring equipment, and the associated emissions unit.

2. The permittee shall operate and maintain a continuous temperature monitor and recorder which measures and records the combustion temperature within the thermal incinerator when the emissions unit is in operation. Units shall be in degrees Fahrenheit. The monitoring and recording devices shall be capable of accurately measuring the desired parameter. The temperature monitor and recorder shall be installed, calibrated, operated and maintained in accordance with the manufacturer's recommendations, with any modifications deemed necessary by the permittee.

3. The permittee shall collect and record the following information for each day for RTO #2:

   a. A log of operating time for the capture (collection) system, control device, monitoring equipment, and the associated emissions units.

   b. All 3-hour blocks of time during which the average combustion temperature within the thermal incinerator, when any of the associated emissions unit was in operation, was more than 50 degrees Fahrenheit below the average temperature during the most recent


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emission test that demonstrated the incinerator system was in compliance with the destruction efficiency requirement.

4. The permittee shall collect and record the following information each day for emissions units K018, K019, K020, K021, K022, K023, K024, K025, K026, K027, K028 and K029.

   a. The name and identification number of each coating, solvent and support material, and cleanup material, as applied.

   b. The VOC content of each coating, solvent and support material, and cleanup material, as applied, in pounds per gallon and in pounds per gallon excluding water and exempt solvents.

   c. The number of gallons of each coating, solvent and support material, and cleanup material employed.

   d. The content of each individual HAP (i.e. xylene, toluene, and any other HAP) in each coating, solvent and support material and cleanup material employed, in pounds per gallon.

   e. The total uncontrolled VOC emission rate for all coatings, solvent and support materials, and cleanup materials employed, in pounds per day. This calculation is the summation of the product of (4.b or VOC content in pounds per gallon) times (4.c or number of gallons per day) for each coating, solvent, support material and cleanup material employed.

   f. The total uncontrolled emission rate for each individual HAP from all coatings, solvent and support materials and cleanup materials employed, in pounds per day. This calculation is the summation of the product of (4.d or individual HAP content in pounds per gallon) times (4.c or number of gallons per day) for each coating, solvent, support material and cleanup material employed.

   g. The total uncontrolled emission rate of all HAPs collectively from all coatings, solvent and support materials and cleanup materials employed, in pounds per day. This calculation is summation of each individual HAP emission rate, as determined above in 4.f.

   h. The calculated, controlled VOC emission rate for all coatings, solvent and support materials and cleanup materials, in pounds per day. The controlled, daily VOC emission rate shall be calculated using the overall control efficiency for the control equipment as determined during the most recent emission test that demonstrated that the emissions unit was in compliance. The controlled VOC emission rate is the uncontrolled VOC emission rate multiplied by (1 minus the overall control efficiency, in percentage).

   i. The calculated, controlled emission rate for each individual HAP from all coatings, solvent and support materials and cleanup materials, in pounds per day. The controlled



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emission rate shall be calculated using the overall control efficiency for the control equipment as determined during the most recent emission test that demonstrated that the emissions unit was in compliance. The controlled emission rate for each individual HAP is the uncontrolled emission rate multiplied by (1 minus the overall control efficiency, in percentage).

j. The total controlled emission rate of all HAPs collectively from all coatings, solvent and support materials and cleanup materials employed, in pounds per day. This calculation is summation of each individual HAP controlled emission rate, as determined above in 4.i.

5. The permittee shall collect and record the following information each month for emissions units K018, K019, K020, K021, K022, K023, K024, K025, K026, K027, K028 and K029.

a. The controlled emission rate for each individual HAP from all coatings, solvent and support materials and cleanup materials, in pounds per rolling 12 month period. This calculation is the summation of each daily emission rate, as recorded per Section C.4.i, for the past twelve months and then multiplied by ton/2,000 lbs.

b. The controlled emission rate for all HAPs collectively from all coatings, solvent and support materials and cleanup materials, in pounds per rolling 12 month period. This calculation is the summation of each daily emission rate, as recorded per Section C.4.j, for the past twelve months and then multiplied by ton/2,000 lbs.

c. The controlled VOC emission rate for all coatings, solvent and support materials and cleanup materials, in tons per rolling 12 month period. This calculation is the summation of each daily emission rate, as recorded per Section C.4.h, for the past twelve months and then multiplied by ton/2,000 lbs.

d. The coating usage rate as described in Section B.3 in gallons per month.

e. The solvent usage rate as described in Section B.3 in gallons per month.

6. The permit to install for this emissions unit 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 for each pollutant emitted by this emissions unit using data from the permit to install application and the SCREEN 3.0 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 table summarizes the results of the modeling from RTO #2:

| Compound | TLV ($ug.m^3$) | MAGLC = TLV/42 ($ug.m^3$) | Emission rate (g/s) | Predicted 1-hr max ground level conc. ($ug.m^3$) | MAGLC exceeded (Y/N) |
|---|---|---|---|---|---|


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| | | | | | |
|---|---|---|---|---|---|
| formaldehyde | 271 | 6 | 0.0011 | 0.12 | N |
| methanol | 262,086 | 6,240 | 0.23 | 27.41 | N |
| acetone | 1,187,116 | 28,264 | 0.01 | 1.19 | N |
| MEK | 589,775 | 14,042 | 0.32 | 37.21 | N |
| naphthalene | 52,429 | 1,248 | 0.0001 | 0.01 | N |
| cumene | 245,787 | 5,852 | 0.000001 | 0.0001 | N |
| ethylbenzene | 4343,192 | 10,338 | 0.22 | 26.29 | N |
| MIBK | 204,826 | 4,877 | 0.18 | 21.68 | N |
| toluene | 188,405 | 4,486 | 0.57 | 67.52 | N |
| hexane | 1,762,372 | 41,961 | 0.000001 | 0.0001 | N |
| xylene | 434,192 | 10,338 | 1.03 | 120.95 | N |

7. 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 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.).

   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



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(other than (VV)(1)(a)(ii)), then the permittee shall obtain a final permit to install prior to the change(s).

8. 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 satisfied 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 quarterly summaries of the following records:

   a. A log of operating time for the capture (collection) system, control device, monitoring equipment, and the associated emission unit.

   b. All 3-hour blocks of time during which the average combustion temperature within the thermal incinerator does not comply with the temperature limitation specified above.

   c. All periods of time during which the permanent total enclosure was not maintained at the required differential pressure specified above.

   d. A list of all days when the daily VOC emission rate from RTO #2 exceeded 151.8 pounds.

   e. A list of any days when noncomplying coatings were used.

   f. A list of all months when the amount of coatings (including stains, toners, glazes, topcoats and sealers) exceeded 43,196 gallons, and the amount of solvent and support materials exceeded 15,300 gallons.

2. The permittee shall also submit a quarterly deviation report when the total controlled emissions of VOC, individual HAPs, and the total aggregate HAPs from RTO #2 exceed the limits listed in A.2.d and A.2.e respectively.

## E. Testing Requirements

1. The permittee shall conduct, or have conducted, emission testing for this emission unit in accordance with the following requirements:



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a. The emission testing shall be conducted within 3 months after issuance of this permit.

b. The emission testing shall be conducted to demonstrate compliance with the VOC capture efficiency and control efficiency requirement specified in Section A.2.a. Emission testing shall also be conducted to establish the average combustion temperature within the thermal incinerator, as specified in Section B.1, and to establish the minimum pressure differential within the permanent total enclosure, as specified in Section B.2.

c. The test(s) shall be conducted while the emissions units are operating at or near their maximum capacity, unless otherwise specified or approved by the Ohio EPA Northeast District Office.

d. The capture efficiency shall be determined using Methods 204 through 204F, as specified in 40 CFR part 51, Appendix M, or the permittee may request to use an alternative method or procedure for the determination of capture efficiency in accordance with the U.S. EPA's "Guideline for Determining Capture Efficiency," dated January 9, 1995. (The Ohio EPA will consider the request, including an evaluation of the applicability, necessity, and validity of the alternative, and may approve the use of the alternative if such approval does not contravene any other applicable requirement.)

e. The control efficiency (i.e., the percent reduction in mass emissions between the inlet and outlet of the control system) shall be determined in accordance with the test methods and procedures specified in OAC rule 3745-21-10 or an approved alternative test protocol. The test methods and procedures selected shall be based on a consideration of the diversity of the organic species present and their total concentration, and on a consideration of the potential presence of interfering gases.

f. U.S. EPA Method 24 shall be used, in accordance with OAC rule 3745-21-04(B)(5), to determine the VOC contents for all coatings, solvent and support materials, and cleanup materials used during the performance test(s). If, pursuant to section 4.3 of Method 24, 40 CFR part 60, Appendix A, an owner or operator determines that Method 24 cannot be used for a particular coating, solvent and support material, or cleanup material, the permittee shall so notify the Administrator of the U.S. EPA and shall use formulation data for that coating, solvent and support material, or cleanup material to demonstrate compliance until the U.S. EPA provides alternative analytical procedures or alternative precision statements for Method 24.

g. Not later than 30 days prior to the proposed test date(s), the permittee shall submit an "Intent to Test" notification to the Ohio EPA Northeast District Office. The "Intent to Test" notification shall describe in detail the proposed test methods and procedures, the emissions unit operating parameters, the time(s) and date(s) of the test(s), and the person(s) who will be conducting the test(s). Failure to submit such notification for review and approval prior to the test(s) may result in the Ohio EPA Northeast District Office's refusal to accept the results of the emission test(s).



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Personnel from the Ohio EPA Northeast District Office shall be permitted to witness the test(s), examine the testing equipment, and acquire data and information necessary to ensure that the operation of the emissions unit and the testing procedures provide a valid characterization of the emissions from the emissions unit and/or the performance of the control equipment.

h. A comprehensive written report on the results of the emissions test(s) shall be signed by the person or persons responsible for the tests and submitted to the Ohio EPA Northeast District Office within 30 days following completion of the test(s).

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151.8 lbs VOC /day and 27.7 tons VOC per rolling 12 month period from RTO #2

Applicable Compliance Method:
Compliance shall be based upon the recordkeeping specified in Section C.4 and C.5.

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Applicable Compliance Method:
Compliance shall be based upon the recordkeeping specified in Section C.5.

4. Emission Limitation:
2,067 lbs/month and 12.4 tons per rolling 12 month period of all HAPs from RTO #2

Applicable Compliance Method:
Compliance shall be based upon the recordkeeping specified in Section C.5.

5. Compliance with the VOC content restrictions of each coating, solvent and support material, and cleanup material shall be based upon the use of U.S. EPA Method 24.

6. Emission Limitation:
0.7 lb NOx/hr and 3.2 tons NOx/year from the combustion of natural gas in the thermal oxidizer.

Applicable Compliance Method:
The following equation shall be used to determine the hourly emission rate.

$$E = EF \times R \times 1/H$$

where:

E = Emission rate, in lbs/hr

EF = Emission factor (AP-42, Section 1.4) for NOx is 100 lbs/mmcf.



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R = Maximum rating of the thermal oxidizer reported to be 7.5 mmBtu/hr.

H = Heating value of the natural gas, in Btu/cf. 1,020 Btu/cf was used in the emission calculation for this permit.

The yearly rate, in tons/year, shall be determined by multiplying the hourly rate (lbs/hr) as calculated above, by (# hrs of operation/year) and (ton/2,000 lbs).

**7.** Emission Limitation:
0.6 lb CO/hr and 2.7 tons CO/year from the combustion of natural gas in the thermal oxidizer.

Applicable Compliance Method:
The following equation shall be used to determine the hourly emission rate.

E = EF x R x 1/H

where:

E = Emission rate, in lbs/hr

EF = Emission factor (AP-42, Section 1.4) for CO is 84 lbs/mmcf.

R = Maximum rating of the thermal oxidizer reported to be 7.5 mmBtu/hr.

H = Heating value of the natural gas, in Btu/cf. 1,020 Btu/cf was used in the emission calculation for this permit.

The yearly rate (tons/year) shall be determined by multiplying the hourly rate (lbs/hr), as calculated above, by (# hrs of operation/year) and (ton/2,000 lbs).

## F. Miscellaneous Requirements

1. In accordance with the provisions of OAC rule 3745-35-07, the following terms and conditions of this permit to install are federally enforceable: A-F, except C.6, C.7 and C.8.

2. The terms and condition of this permit supercede those contained with PTI # 02-12833. The exemption would be that the terms and conditions for F003 (Sawdust Storage Bin #1 Load-out) and F004 (Sawdust Storage Bin #2 Load-out) contained in PTI #02-12833 are still applicable.



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### 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 |
|---|---|---|
| K025 - Spray booth 8 of overhead conveyor line 4, controlled by regenerative thermal oxidizer No. 2 | OAC rule 3745-31-05(A)(3) | Volatile Organic Compound (VOC) emissions shall not exceed 151.8 pounds per day.<br><br>Hazardous Air Pollutant (HAP) emissions shall not exceed 792 pounds per month for an individual HAP and 2,067 pounds per month for combined HAPs.<br><br>Nitrogen Oxide (NOx) emissions from the combustion of natural gas from the thermal oxidizer shall not exceed 0.7 pound per hour, 3.2 tons per year.<br><br>Carbon Monoxide (CO) emissions from the combustion of natural gas from the thermal oxidizer shall not exceed 0.6 pound per hour, 2.7 tons per year.<br><br>The requirements of this rule also include compliance with the requirements of OAC rule 3745-35-02(D) |
| | OAC rule 3745-35-07(B) | See Section A.2.a through A.2.c. |
| | OAC rule 3745-21-07(G)(2) | See Section A.2.d and A.2.e. |



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| | |
|---|---|
| | The requirements of this rule are less stringent than the requirements established pursuant to OAC rule 3745-31-05(A)(3). |

**2. Additional Terms and Conditions**

**2.a** The permittee shall design enclosure #2 that will house K018, K019, K020, K021, K022, K023, K024, K025, K026, K027, K028 and K029 in such a manner as to function as a permanent total enclosure (PTE) as defined by U.S. EPA Method 204. The use of the PTE, as defined in Reference Method 204, provides for 100% capture efficiency.

**2.b** The permittee shall install and maintain an incineration system to control the VOC emissions from the permanent total enclosure, PTE #2. The incinerator system shall have a VOC destruction efficiency of at least 99% by weight.

**2.c** The volatile organic compound (VOC) content of the Coatings (including stains, toners, glazes, topcoats and sealers) and Solvents & Support Materials used by the permittee at this facility shall not exceed the following VOC content, minus water:

| | |
|---|---|
| Coatings | 7.5 lbs VOC/gallon |
| Solvents & Support Materials | 9.0 lbs VOC/gallon |

**2.d** Emissions from the Regenerative Thermal Oxidizer (RTO) #2 shall be restricted in such a manner to limit emissions from emissions units K018, K019, K020, K021, K022, K023, K024, K025, K026, K027, K028 and K029 to the following:

i. 27.7 tons VOC per rolling 12 month period
ii. 4.75 tons per rolling 12 month period of any individual HAP
iii. 12.4 tons per rolling 12 month period of total aggregate HAPs

**2.e** Emissions from the entire facility shall not exceed the following limits:

i. 55.4 tons VOC per rolling 12 month period
ii. 9.5 tons per rolling 12 month period of any individual HAP
iii. 24.8 tons per rolling 12 month period of total aggregate HAPs

**B. Operational Restrictions**

1. The average combustion temperature within RTO #2, for any 3-hour block of time when an associated emissions unit is in operation, shall not be more than 50 degrees Fahrenheit below the average temperature during the most recent emission test that demonstrated the RTO system was in compliance with the destruction efficiency requirement.



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2. The permanent total enclosure shall be maintained under negative pressure, at a minimum pressure differential that is not less than the minimum pressure differential (inches of water) established during the most recent emission test that demonstrated the emissions unit was in compliance or 0.007 inches of water as established in Method 204, whenever the emissions unit is in operation.

3. The permittee shall limit the total coating and solvent usage for PTE #2 (K018, K019, K020, K021, K022, K023, K024, K025, K026, K027, K028 and K029) as follows:

| | |
|---|---|
| Coatings (including stains, toners, glazes, topcoats and sealers) | 43,196 gallons/month |
| Solvents & Support Materials | 15,300 gallons/month |

**C. Monitoring and/or Recordkeeping Requirements**

1. The permittee shall install, maintain and operate monitoring devices and a recorder which simultaneously measure and record the pressure inside and outside the permanent total enclosure.

   The monitoring and recording devices 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 following information on a daily basis:

   a. The difference in pressure between the permanent total enclosure and the surrounding area(s).

   b. A log or record of operating time for the capture (collection) system, control device, monitoring equipment, and the associated emissions unit.

2. The permittee shall operate and maintain a continuous temperature monitor and recorder which measures and records the combustion temperature within the thermal incinerator when the emissions unit is in operation. Units shall be in degrees Fahrenheit. The monitoring and recording devices shall be capable of accurately measuring the desired parameter. The temperature monitor and recorder shall be installed, calibrated, operated and maintained in accordance with the manufacturer's recommendations, with any modifications deemed necessary by the permittee.

3. The permittee shall collect and record the following information for each day for RTO #2:

   a. A log of operating time for the capture (collection) system, control device, monitoring equipment, and the associated emissions units.

   b. All 3-hour blocks of time during which the average combustion temperature within the thermal incinerator, when any of the associated emissions unit was in operation, was more than 50 degrees Fahrenheit below the average temperature during the most recent


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emission test that demonstrated the incinerator system was in compliance with the destruction efficiency requirement.

4. The permittee shall collect and record the following information each day for emissions units K018, K019, K020, K021, K022, K023, K024, K025, K026, K027, K028 and K029.

   a. The name and identification number of each coating, solvent and support material, and cleanup material, as applied.

   b. The VOC content of each coating, solvent and support material, and cleanup material, as applied, in pounds per gallon and in pounds per gallon excluding water and exempt solvents.

   c. The number of gallons of each coating, solvent and support material, and cleanup material employed.

   d. The content of each individual HAP (i.e. xylene, toluene, and any other HAP) in each coating, solvent and support material and cleanup material employed, in pounds per gallon.

   e. The total uncontrolled VOC emission rate for all coatings, solvent and support materials, and cleanup materials employed, in pounds per day. This calculation is the summation of the product of (4.b or VOC content in pounds per gallon) times (4.c or number of gallons per day) for each coating, solvent, support material and cleanup material employed.

   f. The total uncontrolled emission rate for each individual HAP from all coatings, solvent and support materials and cleanup materials employed, in pounds per day. This calculation is the summation of the product of (4.d or individual HAP content in pounds per gallon) times (4.c or number of gallons per day) for each coating, solvent, support material and cleanup material employed.

   g. The total uncontrolled emission rate of all HAPs collectively from all coatings, solvent and support materials and cleanup materials employed, in pounds per day. This calculation is summation of each individual HAP emission rate, as determined above in 4.f.

   h. The calculated, controlled VOC emission rate for all coatings, solvent and support materials and cleanup materials, in pounds per day. The controlled, daily VOC emission rate shall be calculated using the overall control efficiency for the control equipment as determined during the most recent emission test that demonstrated that the emissions unit was in compliance. The controlled VOC emission rate is the uncontrolled VOC emission rate multiplied by (1 minus the overall control efficiency, in percentage).

   i. The calculated, controlled emission rate for each individual HAP from all coatings, solvent and support materials and cleanup materials, in pounds per day. The controlled



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emission rate shall be calculated using the overall control efficiency for the control equipment as determined during the most recent emission test that demonstrated that the emissions unit was in compliance. The controlled emission rate for each individual HAP is the uncontrolled emission rate multiplied by (1 minus the overall control efficiency, in percentage).

j. The total controlled emission rate of all HAPs collectively from all coatings, solvent and support materials and cleanup materials employed, in pounds per day. This calculation is summation of each individual HAP controlled emission rate, as determined above in 4.i.

5. The permittee shall collect and record the following information each month for emissions units K018, K019, K020, K021, K022, K023, K024, K025, K026, K027, K028 and K029.

a. The controlled emission rate for each individual HAP from all coatings, solvent and support materials and cleanup materials, in pounds per rolling 12 month period. This calculation is the summation of each daily emission rate, as recorded per Section C.4.i, for the past twelve months and then multiplied by ton/2,000 lbs.

b. The controlled emission rate for all HAPs collectively from all coatings, solvent and support materials and cleanup materials, in pounds per rolling 12 month period. This calculation is the summation of each daily emission rate, as recorded per Section C.4.j, for the past twelve months and then multiplied by ton/2,000 lbs.

c. The controlled VOC emission rate for all coatings, solvent and support materials and cleanup materials, in tons per rolling 12 month period. This calculation is the summation of each daily emission rate, as recorded per Section C.4.h, for the past twelve months and then multiplied by ton/2,000 lbs.

d. The coating usage rate as described in Section B.3 in gallons per month.

e. The solvent usage rate as described in Section B.3 in gallons per month.

6. The permit to install for this emissions unit 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 for each pollutant emitted by this emissions unit using data from the permit to install application and the SCREEN 3.0 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 table summarizes the results of the modeling from RTO #2:

| Compound | TLV ($ug.m^3$) | MAGLC = TLV/42 ($ug.m^3$) | Emission rate (g/s) | Predicted 1-hr max ground level conc. ($ug.m^3$) | MAGLC exceeded (Y/N) |
|---|---|---|---|---|---|


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| | | | | | |
|---|---|---|---|---|---|
| formaldehyde | 271 | 6 | 0.0011 | 0.12 | N |
| methanol | 262,086 | 6,240 | 0.23 | 27.41 | N |
| acetone | 1,187,116 | 28,264 | 0.01 | 1.19 | N |
| MEK | 589,775 | 14,042 | 0.32 | 37.21 | N |
| naphthalene | 52,429 | 1,248 | 0.0001 | 0.01 | N |
| cumene | 245,787 | 5,852 | 0.000001 | 0.0001 | N |
| ethylbenzene | 4343,192 | 10,338 | 0.22 | 26.29 | N |
| MIBK | 204,826 | 4,877 | 0.18 | 21.68 | N |
| toluene | 188,405 | 4,486 | 0.57 | 67.52 | N |
| hexane | 1,762,372 | 41,961 | 0.000001 | 0.0001 | N |
| xylene | 434,192 | 10,338 | 1.03 | 120.95 | N |

7. 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 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.).

   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



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(other than (VV)(1)(a)(ii)), then the permittee shall obtain a final permit to install prior to the change(s).

8. 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 satisfied 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 quarterly summaries of the following records:

   a. A log of operating time for the capture (collection) system, control device, monitoring equipment, and the associated emission unit.

   b. All 3-hour blocks of time during which the average combustion temperature within the thermal incinerator does not comply with the temperature limitation specified above.

   c. All periods of time during which the permanent total enclosure was not maintained at the required differential pressure specified above.

   d. A list of all days when the daily VOC emission rate from RTO #2 exceeded 151.8 pounds.

   e. A list of any days when noncomplying coatings were used.

   f. A list of all months when the amount of coatings (including stains, toners, glazes, topcoats and sealers) exceeded 43,196 gallons, and the amount of solvent and support materials exceeded 15,300 gallons.

2. The permittee shall also submit a quarterly deviation report when the total controlled emissions of VOC, individual HAPs, and the total aggregate HAPs from RTO #2 exceed the limits listed in A.2.d and A.2.e respectively.

## E. Testing Requirements

1. The permittee shall conduct, or have conducted, emission testing for this emission unit in accordance with the following requirements:



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a. The emission testing shall be conducted within 3 months after issuance of this permit.

b. The emission testing shall be conducted to demonstrate compliance with the VOC capture efficiency and control efficiency requirement specified in Section A.2.a. Emission testing shall also be conducted to establish the average combustion temperature within the thermal incinerator, as specified in Section B.1, and to establish the minimum pressure differential within the permanent total enclosure, as specified in Section B.2.

c. The test(s) shall be conducted while the emissions units are operating at or near their maximum capacity, unless otherwise specified or approved by the Ohio EPA Northeast District Office.

d. The capture efficiency shall be determined using Methods 204 through 204F, as specified in 40 CFR part 51, Appendix M, or the permittee may request to use an alternative method or procedure for the determination of capture efficiency in accordance with the U.S. EPA's "Guideline for Determining Capture Efficiency," dated January 9, 1995. (The Ohio EPA will consider the request, including an evaluation of the applicability, necessity, and validity of the alternative, and may approve the use of the alternative if such approval does not contravene any other applicable requirement.)

e. The control efficiency (i.e., the percent reduction in mass emissions between the inlet and outlet of the control system) shall be determined in accordance with the test methods and procedures specified in OAC rule 3745-21-10 or an approved alternative test protocol. The test methods and procedures selected shall be based on a consideration of the diversity of the organic species present and their total concentration, and on a consideration of the potential presence of interfering gases.

f. U.S. EPA Method 24 shall be used, in accordance with OAC rule 3745-21-04(B)(5), to determine the VOC contents for all coatings, solvent and support materials, and cleanup materials used during the performance test(s). If, pursuant to section 4.3 of Method 24, 40 CFR part 60, Appendix A, an owner or operator determines that Method 24 cannot be used for a particular coating, solvent and support material, or cleanup material, the permittee shall so notify the Administrator of the U.S. EPA and shall use formulation data for that coating, solvent and support material, or cleanup material to demonstrate compliance until the U.S. EPA provides alternative analytical procedures or alternative precision statements for Method 24.

g. Not later than 30 days prior to the proposed test date(s), the permittee shall submit an "Intent to Test" notification to the Ohio EPA Northeast District Office. The "Intent to Test" notification shall describe in detail the proposed test methods and procedures, the emissions unit operating parameters, the time(s) and date(s) of the test(s), and the person(s) who will be conducting the test(s). Failure to submit such notification for review and approval prior to the test(s) may result in the Ohio EPA Northeast District Office's refusal to accept the results of the emission test(s).



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Personnel from the Ohio EPA Northeast District Office shall be permitted to witness the test(s), examine the testing equipment, and acquire data and information necessary to ensure that the operation of the emissions unit and the testing procedures provide a valid characterization of the emissions from the emissions unit and/or the performance of the control equipment.

h. A comprehensive written report on the results of the emissions test(s) shall be signed by the person or persons responsible for the tests and submitted to the Ohio EPA Northeast District Office within 30 days following completion of the test(s).

2. Emission Limitation:
151.8 lbs VOC /day and 27.7 tons VOC per rolling 12 month period from RTO #2

Applicable Compliance Method:
Compliance shall be based upon the recordkeeping specified in Section C.4 and C.5.

3. Emission Limitation:
792 lbs/month and 4.75 tons per rolling 12 month period of an individual HAP from RTO #2

Applicable Compliance Method:
Compliance shall be based upon the recordkeeping specified in Section C.5.

4. Emission Limitation:
2,067 lbs/month and 12.4 tons per rolling 12 month period of all HAPs from RTO #2

Applicable Compliance Method:
Compliance shall be based upon the recordkeeping specified in Section C.5.

5. Compliance with the VOC content restrictions of each coating, solvent and support material, and cleanup material shall be based upon the use of U.S. EPA Method 24.

6. Emission Limitation:
0.7 lb NOx/hr and 3.2 tons NOx/year from the combustion of natural gas in the thermal oxidizer.

Applicable Compliance Method:
The following equation shall be used to determine the hourly emission rate.

$$E = EF \times R \times 1/H$$

where:

E = Emission rate, in lbs/hr

EF = Emission factor (AP-42, Section 1.4) for NOx is 100 lbs/mmcf.



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R = Maximum rating of the thermal oxidizer reported to be 7.5 mmBtu/hr.

H = Heating value of the natural gas, in Btu/cf. 1,020 Btu/cf was used in the emission calculation for this permit.

The yearly rate, in tons/year, shall be determined by multiplying the hourly rate (lbs/hr) as calculated above, by (# hrs of operation/year) and (ton/2,000 lbs).

**7.** Emission Limitation:
0.6 lb CO/hr and 2.7 tons CO/year from the combustion of natural gas in the thermal oxidizer.

Applicable Compliance Method:
The following equation shall be used to determine the hourly emission rate.

E = EF x R x 1/H

where:

E = Emission rate, in lbs/hr

EF = Emission factor (AP-42, Section 1.4) for CO is 84 lbs/mmcf.

R = Maximum rating of the thermal oxidizer reported to be 7.5 mmBtu/hr.

H = Heating value of the natural gas, in Btu/cf. 1,020 Btu/cf was used in the emission calculation for this permit.

The yearly rate (tons/year) shall be determined by multiplying the hourly rate (lbs/hr), as calculated above, by (# hrs of operation/year) and (ton/2,000 lbs).

## F. Miscellaneous Requirements

1. In accordance with the provisions of OAC rule 3745-35-07, the following terms and conditions of this permit to install are federally enforceable: A-F, except C.6, C.7 and C.8.

2. The terms and condition of this permit supercede those contained with PTI # 02-12833. The exemption would be that the terms and conditions for F003 (Sawdust Storage Bin #1 Load-out) and F004 (Sawdust Storage Bin #2 Load-out) contained in PTI #02-12833 are still applicable.



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## 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 |
|---|---|---|
| K026 - Spray booth 9 of overhead conveyor line 4, controlled by regenerative thermal oxidizer No. 2 | OAC rule 3745-31-05(A)(3) | Volatile Organic Compound (VOC) emissions shall not exceed 151.8 pounds per day.<br><br>Hazardous Air Pollutant (HAP) emissions shall not exceed 792 pounds per month for an individual HAP and 2,067 pounds per month for combined HAPs.<br><br>Nitrogen Oxide (NOx) emissions from the combustion of natural gas from the thermal oxidizer shall not exceed 0.7 pound per hour, 3.2 tons per year.<br><br>Carbon Monoxide (CO) emissions from the combustion of natural gas from the thermal oxidizer shall not exceed 0.6 pound per hour, 2.7 tons per year.<br><br>The requirements of this rule also include compliance with the requirements of OAC rule 3745-35-02(D) |
| | OAC rule 3745-35-07(B) | See Section A.2.a through A.2.c. |
| | OAC rule 3745-21-07(G)(2) | See Section A.2.d and A.2.e. |



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| | |
|---|---|
| | The requirements of this rule are less stringent than the requirements established pursuant to OAC rule 3745-31-05(A)(3). |

**2. Additional Terms and Conditions**

**2.a** The permittee shall design enclosure #2 that will house K018, K019, K020, K021, K022, K023, K024, K025, K026, K027, K028 and K029 in such a manner as to function as a permanent total enclosure (PTE) as defined by U.S. EPA Method 204. The use of the PTE, as defined in Reference Method 204, provides for 100% capture efficiency.

**2.b** The permittee shall install and maintain an incineration system to control the VOC emissions from the permanent total enclosure, PTE #2. The incinerator system shall have a VOC destruction efficiency of at least 99% by weight.

**2.c** The volatile organic compound (VOC) content of the Coatings (including stains, toners, glazes, topcoats and sealers) and Solvents & Support Materials used by the permittee at this facility shall not exceed the following VOC content, minus water:

| | |
|---|---|
| Coatings | 7.5 lbs VOC/gallon |
| Solvents & Support Materials | 9.0 lbs VOC/gallon |

**2.d** Emissions from the Regenerative Thermal Oxidizer (RTO) #2 shall be restricted in such a manner to limit emissions from emissions units K018, K019, K020, K021, K022, K023, K024, K025, K026, K027, K028 and K029 to the following:

i. 27.7 tons VOC per rolling 12 month period
ii. 4.75 tons per rolling 12 month period of any individual HAP
iii. 12.4 tons per rolling 12 month period of total aggregate HAPs

**2.e** Emissions from the entire facility shall not exceed the following limits:

i. 55.4 tons VOC per rolling 12 month period
ii. 9.5 tons per rolling 12 month period of any individual HAP
iii. 24.8 tons per rolling 12 month period of total aggregate HAPs

**B. Operational Restrictions**

1. The average combustion temperature within RTO #2, for any 3-hour block of time when an associated emissions unit is in operation, shall not be more than 50 degrees Fahrenheit below the average temperature during the most recent emission test that demonstrated the RTO system was in compliance with the destruction efficiency requirement.



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2. The permanent total enclosure shall be maintained under negative pressure, at a minimum pressure differential that is not less than the minimum pressure differential (inches of water) established during the most recent emission test that demonstrated the emissions unit was in compliance or 0.007 inches of water as established in Method 204, whenever the emissions unit is in operation.

3. The permittee shall limit the total coating and solvent usage for PTE #2 (K018, K019, K020, K021, K022, K023, K024, K025, K026, K027, K028 and K029) as follows:

| | |
|---|---|
| Coatings (including stains, toners, glazes, topcoats and sealers) | 43,196 gallons/month |
| Solvents & Support Materials | 15,300 gallons/month |

**C. Monitoring and/or Recordkeeping Requirements**

1. The permittee shall install, maintain and operate monitoring devices and a recorder which simultaneously measure and record the pressure inside and outside the permanent total enclosure.

   The monitoring and recording devices 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 following information on a daily basis:

   a. The difference in pressure between the permanent total enclosure and the surrounding area(s).

   b. A log or record of operating time for the capture (collection) system, control device, monitoring equipment, and the associated emissions unit.

2. The permittee shall operate and maintain a continuous temperature monitor and recorder which measures and records the combustion temperature within the thermal incinerator when the emissions unit is in operation. Units shall be in degrees Fahrenheit. The monitoring and recording devices shall be capable of accurately measuring the desired parameter. The temperature monitor and recorder shall be installed, calibrated, operated and maintained in accordance with the manufacturer's recommendations, with any modifications deemed necessary by the permittee.

3. The permittee shall collect and record the following information for each day for RTO #2:

   a. A log of operating time for the capture (collection) system, control device, monitoring equipment, and the associated emissions units.

   b. All 3-hour blocks of time during which the average combustion temperature within the thermal incinerator, when any of the associated emissions unit was in operation, was more than 50 degrees Fahrenheit below the average temperature during the most recent


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emission test that demonstrated the incinerator system was in compliance with the destruction efficiency requirement.

4. The permittee shall collect and record the following information each day for emissions units K018, K019, K020, K021, K022, K023, K024, K025, K026, K027, K028 and K029.

   a. The name and identification number of each coating, solvent and support material, and cleanup material, as applied.

   b. The VOC content of each coating, solvent and support material, and cleanup material, as applied, in pounds per gallon and in pounds per gallon excluding water and exempt solvents.

   c. The number of gallons of each coating, solvent and support material, and cleanup material employed.

   d. The content of each individual HAP (i.e. xylene, toluene, and any other HAP) in each coating, solvent and support material and cleanup material employed, in pounds per gallon.

   e. The total uncontrolled VOC emission rate for all coatings, solvent and support materials, and cleanup materials employed, in pounds per day. This calculation is the summation of the product of (4.b or VOC content in pounds per gallon) times (4.c or number of gallons per day) for each coating, solvent, support material and cleanup material employed.

   f. The total uncontrolled emission rate for each individual HAP from all coatings, solvent and support materials and cleanup materials employed, in pounds per day. This calculation is the summation of the product of (4.d or individual HAP content in pounds per gallon) times (4.c or number of gallons per day) for each coating, solvent, support material and cleanup material employed.

   g. The total uncontrolled emission rate of all HAPs collectively from all coatings, solvent and support materials and cleanup materials employed, in pounds per day. This calculation is summation of each individual HAP emission rate, as determined above in 4.f.

   h. The calculated, controlled VOC emission rate for all coatings, solvent and support materials and cleanup materials, in pounds per day. The controlled, daily VOC emission rate shall be calculated using the overall control efficiency for the control equipment as determined during the most recent emission test that demonstrated that the emissions unit was in compliance. The controlled VOC emission rate is the uncontrolled VOC emission rate multiplied by (1 minus the overall control efficiency, in percentage).

   i. The calculated, controlled emission rate for each individual HAP from all coatings, solvent and support materials and cleanup materials, in pounds per day. The controlled



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emission rate shall be calculated using the overall control efficiency for the control equipment as determined during the most recent emission test that demonstrated that the emissions unit was in compliance. The controlled emission rate for each individual HAP is the uncontrolled emission rate multiplied by (1 minus the overall control efficiency, in percentage).

j. The total controlled emission rate of all HAPs collectively from all coatings, solvent and support materials and cleanup materials employed, in pounds per day. This calculation is summation of each individual HAP controlled emission rate, as determined above in 4.i.

5. The permittee shall collect and record the following information each month for emissions units K018, K019, K020, K021, K022, K023, K024, K025, K026, K027, K028 and K029.

a. The controlled emission rate for each individual HAP from all coatings, solvent and support materials and cleanup materials, in pounds per rolling 12 month period. This calculation is the summation of each daily emission rate, as recorded per Section C.4.i, for the past twelve months and then multiplied by ton/2,000 lbs.

b. The controlled emission rate for all HAPs collectively from all coatings, solvent and support materials and cleanup materials, in pounds per rolling 12 month period. This calculation is the summation of each daily emission rate, as recorded per Section C.4.j, for the past twelve months and then multiplied by ton/2,000 lbs.

c. The controlled VOC emission rate for all coatings, solvent and support materials and cleanup materials, in tons per rolling 12 month period. This calculation is the summation of each daily emission rate, as recorded per Section C.4.h, for the past twelve months and then multiplied by ton/2,000 lbs.

d. The coating usage rate as described in Section B.3 in gallons per month.

e. The solvent usage rate as described in Section B.3 in gallons per month.

6. The permit to install for this emissions unit 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 for each pollutant emitted by this emissions unit using data from the permit to install application and the SCREEN 3.0 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 table summarizes the results of the modeling from RTO #2:

| Compound | TLV ($ug.m^3$) | MAGLC = TLV/42 ($ug.m^3$) | Emission rate (g/s) | Predicted 1-hr max ground level conc. ($ug.m^3$) | MAGLC exceeded (Y/N) |
|---|---|---|---|---|---|


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| | | | | | |
|---|---|---|---|---|---|
| formaldehyde | 271 | 6 | 0.0011 | 0.12 | N |
| methanol | 262,086 | 6,240 | 0.23 | 27.41 | N |
| acetone | 1,187,116 | 28,264 | 0.01 | 1.19 | N |
| MEK | 589,775 | 14,042 | 0.32 | 37.21 | N |
| naphthalene | 52,429 | 1,248 | 0.0001 | 0.01 | N |
| cumene | 245,787 | 5,852 | 0.000001 | 0.0001 | N |
| ethylbenzene | 4343,192 | 10,338 | 0.22 | 26.29 | N |
| MIBK | 204,826 | 4,877 | 0.18 | 21.68 | N |
| toluene | 188,405 | 4,486 | 0.57 | 67.52 | N |
| hexane | 1,762,372 | 41,961 | 0.000001 | 0.0001 | N |
| xylene | 434,192 | 10,338 | 1.03 | 120.95 | N |

7. 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 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.).

   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



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(other than (VV)(1)(a)(ii)), then the permittee shall obtain a final permit to install prior to the change(s).

8. 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 satisfied 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 quarterly summaries of the following records:

   a. A log of operating time for the capture (collection) system, control device, monitoring equipment, and the associated emission unit.

   b. All 3-hour blocks of time during which the average combustion temperature within the thermal incinerator does not comply with the temperature limitation specified above.

   c. All periods of time during which the permanent total enclosure was not maintained at the required differential pressure specified above.

   d. A list of all days when the daily VOC emission rate from RTO #2 exceeded 151.8 pounds.

   e. A list of any days when noncomplying coatings were used.

   f. A list of all months when the amount of coatings (including stains, toners, glazes, topcoats and sealers) exceeded 43,196 gallons, and the amount of solvent and support materials exceeded 15,300 gallons.

2. The permittee shall also submit a quarterly deviation report when the total controlled emissions of VOC, individual HAPs, and the total aggregate HAPs from RTO #2 exceed the limits listed in A.2.d and A.2.e respectively.

## E. Testing Requirements

1. The permittee shall conduct, or have conducted, emission testing for this emission unit in accordance with the following requirements:



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a. The emission testing shall be conducted within 3 months after issuance of this permit.

b. The emission testing shall be conducted to demonstrate compliance with the VOC capture efficiency and control efficiency requirement specified in Section A.2.a. Emission testing shall also be conducted to establish the average combustion temperature within the thermal incinerator, as specified in Section B.1, and to establish the minimum pressure differential within the permanent total enclosure, as specified in Section B.2.

c. The test(s) shall be conducted while the emissions units are operating at or near their maximum capacity, unless otherwise specified or approved by the Ohio EPA Northeast District Office.

d. The capture efficiency shall be determined using Methods 204 through 204F, as specified in 40 CFR part 51, Appendix M, or the permittee may request to use an alternative method or procedure for the determination of capture efficiency in accordance with the U.S. EPA's "Guideline for Determining Capture Efficiency," dated January 9, 1995. (The Ohio EPA will consider the request, including an evaluation of the applicability, necessity, and validity of the alternative, and may approve the use of the alternative if such approval does not contravene any other applicable requirement.)

e. The control efficiency (i.e., the percent reduction in mass emissions between the inlet and outlet of the control system) shall be determined in accordance with the test methods and procedures specified in OAC rule 3745-21-10 or an approved alternative test protocol. The test methods and procedures selected shall be based on a consideration of the diversity of the organic species present and their total concentration, and on a consideration of the potential presence of interfering gases.

f. U.S. EPA Method 24 shall be used, in accordance with OAC rule 3745-21-04(B)(5), to determine the VOC contents for all coatings, solvent and support materials, and cleanup materials used during the performance test(s). If, pursuant to section 4.3 of Method 24, 40 CFR part 60, Appendix A, an owner or operator determines that Method 24 cannot be used for a particular coating, solvent and support material, or cleanup material, the permittee shall so notify the Administrator of the U.S. EPA and shall use formulation data for that coating, solvent and support material, or cleanup material to demonstrate compliance until the U.S. EPA provides alternative analytical procedures or alternative precision statements for Method 24.

g. Not later than 30 days prior to the proposed test date(s), the permittee shall submit an "Intent to Test" notification to the Ohio EPA Northeast District Office. The "Intent to Test" notification shall describe in detail the proposed test methods and procedures, the emissions unit operating parameters, the time(s) and date(s) of the test(s), and the person(s) who will be conducting the test(s). Failure to submit such notification for review and approval prior to the test(s) may result in the Ohio EPA Northeast District Office's refusal to accept the results of the emission test(s).


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Personnel from the Ohio EPA Northeast District Office shall be permitted to witness the test(s), examine the testing equipment, and acquire data and information necessary to ensure that the operation of the emissions unit and the testing procedures provide a valid characterization of the emissions from the emissions unit and/or the performance of the control equipment.

h. A comprehensive written report on the results of the emissions test(s) shall be signed by the person or persons responsible for the tests and submitted to the Ohio EPA Northeast District Office within 30 days following completion of the test(s).

2. Emission Limitation:
151.8 lbs VOC /day and 27.7 tons VOC per rolling 12 month period from RTO #2

Applicable Compliance Method:
Compliance shall be based upon the recordkeeping specified in Section C.4 and C.5.

3. Emission Limitation:
792 lbs/month and 4.75 tons per rolling 12 month period of an individual HAP from RTO #2

Applicable Compliance Method:
Compliance shall be based upon the recordkeeping specified in Section C.5.

4. Emission Limitation:
2,067 lbs/month and 12.4 tons per rolling 12 month period of all HAPs from RTO #2

Applicable Compliance Method:
Compliance shall be based upon the recordkeeping specified in Section C.5.

5. Compliance with the VOC content restrictions of each coating, solvent and support material, and cleanup material shall be based upon the use of U.S. EPA Method 24.

6. Emission Limitation:
0.7 lb NOx/hr and 3.2 tons NOx/year from the combustion of natural gas in the thermal oxidizer.

Applicable Compliance Method:
The following equation shall be used to determine the hourly emission rate.

$$E = EF \times R \times 1/H$$

where:

E = Emission rate, in lbs/hr

EF = Emission factor (AP-42, Section 1.4) for NOx is 100 lbs/mmcf.



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R = Maximum rating of the thermal oxidizer reported to be 7.5 mmBtu/hr.

H = Heating value of the natural gas, in Btu/cf. 1,020 Btu/cf was used in the emission calculation for this permit.

The yearly rate, in tons/year, shall be determined by multiplying the hourly rate (lbs/hr) as calculated above, by (# hrs of operation/year) and (ton/2,000 lbs).

**7.** Emission Limitation:
0.6 lb CO/hr and 2.7 tons CO/year from the combustion of natural gas in the thermal oxidizer.

Applicable Compliance Method:
The following equation shall be used to determine the hourly emission rate.

E = EF x R x 1/H

where:

E = Emission rate, in lbs/hr

EF = Emission factor (AP-42, Section 1.4) for CO is 84 lbs/mmcf.

R = Maximum rating of the thermal oxidizer reported to be 7.5 mmBtu/hr.

H = Heating value of the natural gas, in Btu/cf. 1,020 Btu/cf was used in the emission calculation for this permit.

The yearly rate (tons/year) shall be determined by multiplying the hourly rate (lbs/hr), as calculated above, by (# hrs of operation/year) and (ton/2,000 lbs).

## F. Miscellaneous Requirements

1. In accordance with the provisions of OAC rule 3745-35-07, the following terms and conditions of this permit to install are federally enforceable: A-F, except C.6, C.7 and C.8.

2. The terms and condition of this permit supercede those contained with PTI # 02-12833. The exemption would be that the terms and conditions for F003 (Sawdust Storage Bin #1 Load-out) and F004 (Sawdust Storage Bin #2 Load-out) contained in PTI #02-12833 are still applicable.



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## 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 |
|---|---|---|
| K027 - Cefla 4 consisting of two spray booths and two ovens, controlled by regenerative thermal oxidizer No. 2 | OAC rule 3745-31-05(A)(3) | Volatile Organic Compound (VOC) emissions shall not exceed 151.8 pounds per day.<br><br>Hazardous Air Pollutant (HAP) emissions shall not exceed 792 pounds per month for an individual HAP and 2,067 pounds per month for combined HAPs.<br><br>Nitrogen Oxide (NOx) emissions from the combustion of natural gas from the thermal oxidizer shall not exceed 0.7 pound per hour, 3.2 tons per year.<br><br>Carbon Monoxide (CO) emissions from the combustion of natural gas from the thermal oxidizer shall not exceed 0.6 pound per hour, 2.7 tons per year.<br><br>The requirements of this rule also include compliance with the requirements of OAC rule 3745-35-02(D) |
| | OAC rule 3745-35-07(B) | See Section A.2.a through A.2.c. |
| | OAC rule 3745-21-07(G)(2) | See Section A.2.d and A.2.e. |



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| | |
|---|---|
| | The requirements of this rule are less stringent than the requirements established pursuant to OAC rule 3745-31-05(A)(3). |

**2. Additional Terms and Conditions**

**2.a** The permittee shall design enclosure #2 that will house K018, K019, K020, K021, K022, K023, K024, K025, K026, K027, K028 and K029 in such a manner as to function as a permanent total enclosure (PTE) as defined by U.S. EPA Method 204. The use of the PTE, as defined in Reference Method 204, provides for 100% capture efficiency.

**2.b** The permittee shall install and maintain an incineration system to control the VOC emissions from the permanent total enclosure, PTE #2. The incinerator system shall have a VOC destruction efficiency of at least 99% by weight.

**2.c** The volatile organic compound (VOC) content of the Coatings (including stains, toners, glazes, topcoats and sealers) and Solvents & Support Materials used by the permittee at this facility shall not exceed the following VOC content, minus water:

| | |
|---|---|
| Coatings | 7.5 lbs VOC/gallon |
| Solvents & Support Materials | 9.0 lbs VOC/gallon |

**2.d** Emissions from the Regenerative Thermal Oxidizer (RTO) #2 shall be restricted in such a manner to limit emissions from emissions units K018, K019, K020, K021, K022, K023, K024, K025, K026, K027, K028 and K029 to the following:

i. 27.7 tons VOC per rolling 12 month period
ii. 4.75 tons per rolling 12 month period of any individual HAP
iii. 12.4 tons per rolling 12 month period of total aggregate HAPs

**2.e** Emissions from the entire facility shall not exceed the following limits:

i. 55.4 tons VOC per rolling 12 month period
ii. 9.5 tons per rolling 12 month period of any individual HAP
iii. 24.8 tons per rolling 12 month period of total aggregate HAPs

**B. Operational Restrictions**

1. The average combustion temperature within RTO #2, for any 3-hour block of time when an associated emissions unit is in operation, shall not be more than 50 degrees Fahrenheit below the average temperature during the most recent emission test that demonstrated the RTO system was in compliance with the destruction efficiency requirement.



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2. The permanent total enclosure shall be maintained under negative pressure, at a minimum pressure differential that is not less than the minimum pressure differential (inches of water) established during the most recent emission test that demonstrated the emissions unit was in compliance or 0.007 inches of water as established in Method 204, whenever the emissions unit is in operation.

3. The permittee shall limit the total coating and solvent usage for PTE #2 (K018, K019, K020, K021, K022, K023, K024, K025, K026, K027, K028 and K029) as follows:

| | |
|---|---|
| Coatings (including stains, toners, glazes, topcoats and sealers) | 43,196 gallons/month |
| Solvents & Support Materials | 15,300 gallons/month |

## C. Monitoring and/or Recordkeeping Requirements

1. The permittee shall install, maintain and operate monitoring devices and a recorder which simultaneously measure and record the pressure inside and outside the permanent total enclosure.

   The monitoring and recording devices 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 following information on a daily basis:

   a. The difference in pressure between the permanent total enclosure and the surrounding area(s).

   b. A log or record of operating time for the capture (collection) system, control device, monitoring equipment, and the associated emissions unit.

2. The permittee shall operate and maintain a continuous temperature monitor and recorder which measures and records the combustion temperature within the thermal incinerator when the emissions unit is in operation. Units shall be in degrees Fahrenheit. The monitoring and recording devices shall be capable of accurately measuring the desired parameter. The temperature monitor and recorder shall be installed, calibrated, operated and maintained in accordance with the manufacturer's recommendations, with any modifications deemed necessary by the permittee.

3. The permittee shall collect and record the following information for each day for RTO #2:

   a. A log of operating time for the capture (collection) system, control device, monitoring equipment, and the associated emissions units.

   b. All 3-hour blocks of time during which the average combustion temperature within the thermal incinerator, when any of the associated emissions unit was in operation, was more than 50 degrees Fahrenheit below the average temperature during the most recent


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emission test that demonstrated the incinerator system was in compliance with the destruction efficiency requirement.

4. The permittee shall collect and record the following information each day for emissions units K018, K019, K020, K021, K022, K023, K024, K025, K026, K027, K028 and K029.

   a. The name and identification number of each coating, solvent and support material, and cleanup material, as applied.

   b. The VOC content of each coating, solvent and support material, and cleanup material, as applied, in pounds per gallon and in pounds per gallon excluding water and exempt solvents.

   c. The number of gallons of each coating, solvent and support material, and cleanup material employed.

   d. The content of each individual HAP (i.e. xylene, toluene, and any other HAP) in each coating, solvent and support material and cleanup material employed, in pounds per gallon.

   e. The total uncontrolled VOC emission rate for all coatings, solvent and support materials, and cleanup materials employed, in pounds per day. This calculation is the summation of the product of (4.b or VOC content in pounds per gallon) times (4.c or number of gallons per day) for each coating, solvent, support material and cleanup material employed.

   f. The total uncontrolled emission rate for each individual HAP from all coatings, solvent and support materials and cleanup materials employed, in pounds per day. This calculation is the summation of the product of (4.d or individual HAP content in pounds per gallon) times (4.c or number of gallons per day) for each coating, solvent, support material and cleanup material employed.

   g. The total uncontrolled emission rate of all HAPs collectively from all coatings, solvent and support materials and cleanup materials employed, in pounds per day. This calculation is summation of each individual HAP emission rate, as determined above in 4.f.

   h. The calculated, controlled VOC emission rate for all coatings, solvent and support materials and cleanup materials, in pounds per day. The controlled, daily VOC emission rate shall be calculated using the overall control efficiency for the control equipment as determined during the most recent emission test that demonstrated that the emissions unit was in compliance. The controlled VOC emission rate is the uncontrolled VOC emission rate multiplied by (1 minus the overall control efficiency, in percentage).

   i. The calculated, controlled emission rate for each individual HAP from all coatings, solvent and support materials and cleanup materials, in pounds per day. The controlled



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emission rate shall be calculated using the overall control efficiency for the control equipment as determined during the most recent emission test that demonstrated that the emissions unit was in compliance. The controlled emission rate for each individual HAP is the uncontrolled emission rate multiplied by (1 minus the overall control efficiency, in percentage).

j. The total controlled emission rate of all HAPs collectively from all coatings, solvent and support materials and cleanup materials employed, in pounds per day. This calculation is summation of each individual HAP controlled emission rate, as determined above in 4.i.

5. The permittee shall collect and record the following information each month for emissions units K018, K019, K020, K021, K022, K023, K024, K025, K026, K027, K028 and K029.

a. The controlled emission rate for each individual HAP from all coatings, solvent and support materials and cleanup materials, in pounds per rolling 12 month period. This calculation is the summation of each daily emission rate, as recorded per Section C.4.i, for the past twelve months and then multiplied by ton/2,000 lbs.

b. The controlled emission rate for all HAPs collectively from all coatings, solvent and support materials and cleanup materials, in pounds per rolling 12 month period. This calculation is the summation of each daily emission rate, as recorded per Section C.4.j, for the past twelve months and then multiplied by ton/2,000 lbs.

c. The controlled VOC emission rate for all coatings, solvent and support materials and cleanup materials, in tons per rolling 12 month period. This calculation is the summation of each daily emission rate, as recorded per Section C.4.h, for the past twelve months and then multiplied by ton/2,000 lbs.

d. The coating usage rate as described in Section B.3 in gallons per month.

e. The solvent usage rate as described in Section B.3 in gallons per month.

6. The permit to install for this emissions unit 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 for each pollutant emitted by this emissions unit using data from the permit to install application and the SCREEN 3.0 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 table summarizes the results of the modeling from RTO #2:



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| Compound | TLV (ug.m$^3$) | MAGLC = TLV/42 (ug.m$^3$) | Emission rate (g/s) | Predicted 1-hr max ground level conc. (ug.m$^3$) | MAGLC exceeded (Y/N) |
|---|---|---|---|---|---|
| formaldehyde | 271 | 6 | 0.0011 | 0.12 | N |
| methanol | 262,086 | 6,240 | 0.23 | 27.41 | N |
| acetone | 1,187,116 | 28,264 | 0.01 | 1.19 | N |
| MEK | 589,775 | 14,042 | 0.32 | 37.21 | N |
| naphthalene | 52,429 | 1,248 | 0.0001 | 0.01 | N |
| cumene | 245,787 | 5,852 | 0.000001 | 0.0001 | N |
| ethylbenzene | 4343,192 | 10,338 | 0.22 | 26.29 | N |
| MIBK | 204,826 | 4,877 | 0.18 | 21.68 | N |
| toluene | 188,405 | 4,486 | 0.57 | 67.52 | N |
| hexane | 1,762,372 | 41,961 | 0.000001 | 0.0001 | N |
| xylene | 434,192 | 10,338 | 1.03 | 120.95 | N |

7. 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 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.).



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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(s).

8. 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 satisfied 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 quarterly summaries of the following records:

   a. A log of operating time for the capture (collection) system, control device, monitoring equipment, and the associated emission unit.

   b. All 3-hour blocks of time during which the average combustion temperature within the thermal incinerator does not comply with the temperature limitation specified above.

   c. All periods of time during which the permanent total enclosure was not maintained at the required differential pressure specified above.

   d. A list of all days when the daily VOC emission rate from RTO #2 exceeded 151.8 pounds.

   e. A list of any days when noncomplying coatings were used.

   f. A list of all months when the amount of coatings (including stains, toners, glazes, topcoats and sealers) exceeded 43,196 gallons, and the amount of solvent and support materials exceeded 15,300 gallons.

2. The permittee shall also submit a quarterly deviation report when the total controlled emissions of VOC, individual HAPs, and the total aggregate HAPs from RTO #2 exceed the limits listed in A.2.d and A.2.e respectively.



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## E. Testing Requirements

1. The permittee shall conduct, or have conducted, emission testing for this emission unit in accordance with the following requirements:

   a. The emission testing shall be conducted within 3 months after issuance of this permit.

   b. The emission testing shall be conducted to demonstrate compliance with the VOC capture efficiency and control efficiency requirement specified in Section A.2.a. Emission testing shall also be conducted to establish the average combustion temperature within the thermal incinerator, as specified in Section B.1, and to establish the minimum pressure differential within the permanent total enclosure, as specified in Section B.2.

   c. The test(s) shall be conducted while the emissions units are operating at or near their maximum capacity, unless otherwise specified or approved by the Ohio EPA Northeast District Office.

   d. The capture efficiency shall be determined using Methods 204 through 204F, as specified in 40 CFR part 51, Appendix M, or the permittee may request to use an alternative method or procedure for the determination of capture efficiency in accordance with the U.S. EPA's "Guideline for Determining Capture Efficiency," dated January 9, 1995. (The Ohio EPA will consider the request, including an evaluation of the applicability, necessity, and validity of the alternative, and may approve the use of the alternative if such approval does not contravene any other applicable requirement.)

   e. The control efficiency (i.e., the percent reduction in mass emissions between the inlet and outlet of the control system) shall be determined in accordance with the test methods and procedures specified in OAC rule 3745-21-10 or an approved alternative test protocol. The test methods and procedures selected shall be based on a consideration of the diversity of the organic species present and their total concentration, and on a consideration of the potential presence of interfering gases.

   f. U.S. EPA Method 24 shall be used, in accordance with OAC rule 3745-21-04(B)(5), to determine the VOC contents for all coatings, solvent and support materials, and cleanup materials used during the performance test(s). If, pursuant to section 4.3 of Method 24, 40 CFR part 60, Appendix A, an owner or operator determines that Method 24 cannot be used for a particular coating, solvent and support material, or cleanup material, the permittee shall so notify the Administrator of the U.S. EPA and shall use formulation data for that coating, solvent and support material, or cleanup material to demonstrate compliance until the U.S. EPA provides alternative analytical procedures or alternative precision statements for Method 24.

   g. Not later than 30 days prior to the proposed test date(s), the permittee shall submit an "Intent to Test" notification to the Ohio EPA Northeast District Office. The "Intent to Test" notification shall describe in detail the proposed test methods and procedures, the


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emissions unit operating parameters, the time(s) and date(s) of the test(s), and the person(s) who will be conducting the test(s). Failure to submit such notification for review and approval prior to the test(s) may result in the Ohio EPA Northeast District Office's refusal to accept the results of the emission test(s).

Personnel from the Ohio EPA Northeast District Office shall be permitted to witness the test(s), examine the testing equipment, and acquire data and information necessary to ensure that the operation of the emissions unit and the testing procedures provide a valid characterization of the emissions from the emissions unit and/or the performance of the control equipment.

h. A comprehensive written report on the results of the emissions test(s) shall be signed by the person or persons responsible for the tests and submitted to the Ohio EPA Northeast District Office within 30 days following completion of the test(s).

2. Emission Limitation:
151.8 lbs VOC /day and 27.7 tons VOC per rolling 12 month period from RTO #2

Applicable Compliance Method:
Compliance shall be based upon the recordkeeping specified in Section C.4 and C.5.

3. Emission Limitation:
792 lbs/month and 4.75 tons per rolling 12 month period of an individual HAP from RTO #2

Applicable Compliance Method:
Compliance shall be based upon the recordkeeping specified in Section C.5.

4. Emission Limitation:
2,067 lbs/month and 12.4 tons per rolling 12 month period of all HAPs from RTO #2

Applicable Compliance Method:
Compliance shall be based upon the recordkeeping specified in Section C.5.

5. Compliance with the VOC content restrictions of each coating, solvent and support material, and cleanup material shall be based upon the use of U.S. EPA Method 24.

6. Emission Limitation:
0.7 lb NOx/hr and 3.2 tons NOx/year from the combustion of natural gas in the thermal oxidizer.

Applicable Compliance Method:
The following equation shall be used to determine the hourly emission rate.

$$E = EF \times R \times 1/H$$

where:



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E = Emission rate, in lbs/hr

EF = Emission factor (AP-42, Section 1.4) for NOx is 100 lbs/mmcf.

R = Maximum rating of the thermal oxidizer reported to be 7.5 mmBtu/hr.

H = Heating value of the natural gas, in Btu/cf. 1,020 Btu/cf was used in the emission calculation for this permit.

The yearly rate, in tons/year, shall be determined by multiplying the hourly rate (lbs/hr) as calculated above, by (# hrs of operation/year) and (ton/2,000 lbs).

**7.** Emission Limitation:
0.6 lb CO/hr and 2.7 tons CO/year from the combustion of natural gas in the thermal oxidizer.

Applicable Compliance Method:
The following equation shall be used to determine the hourly emission rate.

E = EF x R x 1/H

where:

E = Emission rate, in lbs/hr

EF = Emission factor (AP-42, Section 1.4) for CO is 84 lbs/mmcf.

R = Maximum rating of the thermal oxidizer reported to be 7.5 mmBtu/hr.

H = Heating value of the natural gas, in Btu/cf. 1,020 Btu/cf was used in the emission calculation for this permit.

The yearly rate (tons/year) shall be determined by multiplying the hourly rate (lbs/hr), as calculated above, by (# hrs of operation/year) and (ton/2,000 lbs).

## F. Miscellaneous Requirements

1. In accordance with the provisions of OAC rule 3745-35-07, the following terms and conditions of this permit to install are federally enforceable: A-F, except C.6, C.7 and C.8.

2. The terms and condition of this permit supercede those contained with PTI # 02-12833. The exemption would be that the terms and conditions for F003 (Sawdust Storage Bin #1 Load-out) and F004 (Sawdust Storage Bin #2 Load-out) contained in PTI #02-12833 are still applicable.



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## 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 |
|---|---|---|
| K028 - Cefla 5 consisting of one spray booth and one oven, controlled by regenerative thermal oxidizer No. 2 | OAC rule 3745-31-05(A)(3) | Volatile Organic Compound (VOC) emissions shall not exceed 151.8 pounds per day.<br><br>Hazardous Air Pollutant (HAP) emissions shall not exceed 792 pounds per month for an individual HAP and 2,067 pounds per month for combined HAPs.<br><br>Nitrogen Oxide (NOx) emissions from the combustion of natural gas from the thermal oxidizer shall not exceed 0.7 pound per hour, 3.2 tons per year.<br><br>Carbon Monoxide (CO) emissions from the combustion of natural gas from the thermal oxidizer shall not exceed 0.6 pound per hour, 2.7 tons per year.<br><br>The requirements of this rule also include compliance with the requirements of OAC rule 3745-35-02(D) |
| | OAC rule 3745-35-07(B) | See Section A.2.a through A.2.c. |
| | OAC rule 3745-21-07(G)(2) | See Section A.2.d and A.2.e. |



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| | |
|---|---|
| | The requirements of this rule are less stringent than the requirements established pursuant to OAC rule 3745-31-05(A)(3). |

**2. Additional Terms and Conditions**

**2.a** The permittee shall design enclosure #2 that will house K018, K019, K020, K021, K022, K023, K024, K025, K026, K027, K028 and K029 in such a manner as to function as a permanent total enclosure (PTE) as defined by U.S. EPA Method 204. The use of the PTE, as defined in Reference Method 204, provides for 100% capture efficiency.

**2.b** The permittee shall install and maintain an incineration system to control the VOC emissions from the permanent total enclosure, PTE #2. The incinerator system shall have a VOC destruction efficiency of at least 99% by weight.

**2.c** The volatile organic compound (VOC) content of the Coatings (including stains, toners, glazes, topcoats and sealers) and Solvents & Support Materials used by the permittee at this facility shall not exceed the following VOC content, minus water:

| | |
|---|---|
| Coatings | 7.5 lbs VOC/gallon |
| Solvents & Support Materials | 9.0 lbs VOC/gallon |

**2.d** Emissions from the Regenerative Thermal Oxidizer (RTO) #2 shall be restricted in such a manner to limit emissions from emissions units K018, K019, K020, K021, K022, K023, K024, K025, K026, K027, K028 and K029 to the following:

i. 27.7 tons VOC per rolling 12 month period
ii. 4.75 tons per rolling 12 month period of any individual HAP
iii. 12.4 tons per rolling 12 month period of total aggregate HAPs

**2.e** Emissions from the entire facility shall not exceed the following limits:

i. 55.4 tons VOC per rolling 12 month period
ii. 9.5 tons per rolling 12 month period of any individual HAP
iii. 24.8 tons per rolling 12 month period of total aggregate HAPs

**B. Operational Restrictions**

1. The average combustion temperature within RTO #2, for any 3-hour block of time when an associated emissions unit is in operation, shall not be more than 50 degrees Fahrenheit below the average temperature during the most recent emission test that demonstrated the RTO system was in compliance with the destruction efficiency requirement.



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2. The permanent total enclosure shall be maintained under negative pressure, at a minimum pressure differential that is not less than the minimum pressure differential (inches of water) established during the most recent emission test that demonstrated the emissions unit was in compliance or 0.007 inches of water as established in Method 204, whenever the emissions unit is in operation.

3. The permittee shall limit the total coating and solvent usage for PTE #2 (K018, K019, K020, K021, K022, K023, K024, K025, K026, K027, K028 and K029) as follows:

| | |
|---|---|
| Coatings (including stains, toners, glazes, topcoats and sealers) | 43,196 gallons/month |
| Solvents & Support Materials | 15,300 gallons/month |

## C. Monitoring and/or Recordkeeping Requirements

1. The permittee shall install, maintain and operate monitoring devices and a recorder which simultaneously measure and record the pressure inside and outside the permanent total enclosure.

   The monitoring and recording devices 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 following information on a daily basis:

   a. The difference in pressure between the permanent total enclosure and the surrounding area(s).

   b. A log or record of operating time for the capture (collection) system, control device, monitoring equipment, and the associated emissions unit.

2. The permittee shall operate and maintain a continuous temperature monitor and recorder which measures and records the combustion temperature within the thermal incinerator when the emissions unit is in operation. Units shall be in degrees Fahrenheit. The monitoring and recording devices shall be capable of accurately measuring the desired parameter. The temperature monitor and recorder shall be installed, calibrated, operated and maintained in accordance with the manufacturer's recommendations, with any modifications deemed necessary by the permittee.

3. The permittee shall collect and record the following information for each day for RTO #2:

   a. A log of operating time for the capture (collection) system, control device, monitoring equipment, and the associated emissions units.

   b. All 3-hour blocks of time during which the average combustion temperature within the thermal incinerator, when any of the associated emissions unit was in operation, was more than 50 degrees Fahrenheit below the average temperature during the most recent


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emission test that demonstrated the incinerator system was in compliance with the destruction efficiency requirement.

4. The permittee shall collect and record the following information each day for emissions units K018, K019, K020, K021, K022, K023, K024, K025, K026, K027, K028 and K029.

   a. The name and identification number of each coating, solvent and support material, and cleanup material, as applied.

   b. The VOC content of each coating, solvent and support material, and cleanup material, as applied, in pounds per gallon and in pounds per gallon excluding water and exempt solvents.

   c. The number of gallons of each coating, solvent and support material, and cleanup material employed.

   d. The content of each individual HAP (i.e. xylene, toluene, and any other HAP) in each coating, solvent and support material and cleanup material employed, in pounds per gallon.

   e. The total uncontrolled VOC emission rate for all coatings, solvent and support materials, and cleanup materials employed, in pounds per day. This calculation is the summation of the product of (4.b or VOC content in pounds per gallon) times (4.c or number of gallons per day) for each coating, solvent, support material and cleanup material employed.

   f. The total uncontrolled emission rate for each individual HAP from all coatings, solvent and support materials and cleanup materials employed, in pounds per day. This calculation is the summation of the product of (4.d or individual HAP content in pounds per gallon) times (4.c or number of gallons per day) for each coating, solvent, support material and cleanup material employed.

   g. The total uncontrolled emission rate of all HAPs collectively from all coatings, solvent and support materials and cleanup materials employed, in pounds per day. This calculation is summation of each individual HAP emission rate, as determined above in 4.f.

   h. The calculated, controlled VOC emission rate for all coatings, solvent and support materials and cleanup materials, in pounds per day. The controlled, daily VOC emission rate shall be calculated using the overall control efficiency for the control equipment as determined during the most recent emission test that demonstrated that the emissions unit was in compliance. The controlled VOC emission rate is the uncontrolled VOC emission rate multiplied by (1 minus the overall control efficiency, in percentage).

   i. The calculated, controlled emission rate for each individual HAP from all coatings, solvent and support materials and cleanup materials, in pounds per day. The controlled



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emission rate shall be calculated using the overall control efficiency for the control equipment as determined during the most recent emission test that demonstrated that the emissions unit was in compliance. The controlled emission rate for each individual HAP is the uncontrolled emission rate multiplied by (1 minus the overall control efficiency, in percentage).

j. The total controlled emission rate of all HAPs collectively from all coatings, solvent and support materials and cleanup materials employed, in pounds per day. This calculation is summation of each individual HAP controlled emission rate, as determined above in 4.i.

5. The permittee shall collect and record the following information each month for emissions units K018, K019, K020, K021, K022, K023, K024, K025, K026, K027, K028 and K029.

a. The controlled emission rate for each individual HAP from all coatings, solvent and support materials and cleanup materials, in pounds per rolling 12 month period. This calculation is the summation of each daily emission rate, as recorded per Section C.4.i, for the past twelve months and then multiplied by ton/2,000 lbs.

b. The controlled emission rate for all HAPs collectively from all coatings, solvent and support materials and cleanup materials, in pounds per rolling 12 month period. This calculation is the summation of each daily emission rate, as recorded per Section C.4.j, for the past twelve months and then multiplied by ton/2,000 lbs.

c. The controlled VOC emission rate for all coatings, solvent and support materials and cleanup materials, in tons per rolling 12 month period. This calculation is the summation of each daily emission rate, as recorded per Section C.4.h, for the past twelve months and then multiplied by ton/2,000 lbs.

d. The coating usage rate as described in Section B.3 in gallons per month.

e. The solvent usage rate as described in Section B.3 in gallons per month.

6. The permit to install for this emissions unit 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 for each pollutant emitted by this emissions unit using data from the permit to install application and the SCREEN 3.0 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 table summarizes the results of the modeling from RTO #2:



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| Compound | TLV (ug.m$^3$) | MAGLC = TLV/42 (ug.m$^3$) | Emission rate (g/s) | Predicted 1-hr max ground level conc. (ug.m$^3$) | MAGLC exceeded (Y/N) |
|---|---|---|---|---|---|
| formaldehyde | 271 | 6 | 0.0011 | 0.12 | N |
| methanol | 262,086 | 6,240 | 0.23 | 27.41 | N |
| acetone | 1,187,116 | 28,264 | 0.01 | 1.19 | N |
| MEK | 589,775 | 14,042 | 0.32 | 37.21 | N |
| naphthalene | 52,429 | 1,248 | 0.0001 | 0.01 | N |
| cumene | 245,787 | 5,852 | 0.000001 | 0.0001 | N |
| ethylbenzene | 4343,192 | 10,338 | 0.22 | 26.29 | N |
| MIBK | 204,826 | 4,877 | 0.18 | 21.68 | N |
| toluene | 188,405 | 4,486 | 0.57 | 67.52 | N |
| hexane | 1,762,372 | 41,961 | 0.000001 | 0.0001 | N |
| xylene | 434,192 | 10,338 | 1.03 | 120.95 | N |

7. 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 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.).



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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(s).

8. 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 satisfied 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 quarterly summaries of the following records:

   a. A log of operating time for the capture (collection) system, control device, monitoring equipment, and the associated emission unit.

   b. All 3-hour blocks of time during which the average combustion temperature within the thermal incinerator does not comply with the temperature limitation specified above.

   c. All periods of time during which the permanent total enclosure was not maintained at the required differential pressure specified above.

   d. A list of all days when the daily VOC emission rate from RTO #2 exceeded 151.8 pounds.

   e. A list of any days when noncomplying coatings were used.

   f. A list of all months when the amount of coatings (including stains, toners, glazes, topcoats and sealers) exceeded 43,196 gallons, and the amount of solvent and support materials exceeded 15,300 gallons.

2. The permittee shall also submit a quarterly deviation report when the total controlled emissions of VOC, individual HAPs, and the total aggregate HAPs from RTO #2 exceed the limits listed in A.2.d and A.2.e respectively.



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## E. Testing Requirements

1. The permittee shall conduct, or have conducted, emission testing for this emission unit in accordance with the following requirements:

   a. The emission testing shall be conducted within 3 months after issuance of this permit.

   b. The emission testing shall be conducted to demonstrate compliance with the VOC capture efficiency and control efficiency requirement specified in Section A.2.a. Emission testing shall also be conducted to establish the average combustion temperature within the thermal incinerator, as specified in Section B.1, and to establish the minimum pressure differential within the permanent total enclosure, as specified in Section B.2.

   c. The test(s) shall be conducted while the emissions units are operating at or near their maximum capacity, unless otherwise specified or approved by the Ohio EPA Northeast District Office.

   d. The capture efficiency shall be determined using Methods 204 through 204F, as specified in 40 CFR part 51, Appendix M, or the permittee may request to use an alternative method or procedure for the determination of capture efficiency in accordance with the U.S. EPA's "Guideline for Determining Capture Efficiency," dated January 9, 1995. (The Ohio EPA will consider the request, including an evaluation of the applicability, necessity, and validity of the alternative, and may approve the use of the alternative if such approval does not contravene any other applicable requirement.)

   e. The control efficiency (i.e., the percent reduction in mass emissions between the inlet and outlet of the control system) shall be determined in accordance with the test methods and procedures specified in OAC rule 3745-21-10 or an approved alternative test protocol. The test methods and procedures selected shall be based on a consideration of the diversity of the organic species present and their total concentration, and on a consideration of the potential presence of interfering gases.

   f. U.S. EPA Method 24 shall be used, in accordance with OAC rule 3745-21-04(B)(5), to determine the VOC contents for all coatings, solvent and support materials, and cleanup materials used during the performance test(s). If, pursuant to section 4.3 of Method 24, 40 CFR part 60, Appendix A, an owner or operator determines that Method 24 cannot be used for a particular coating, solvent and support material, or cleanup material, the permittee shall so notify the Administrator of the U.S. EPA and shall use formulation data for that coating, solvent and support material, or cleanup material to demonstrate compliance until the U.S. EPA provides alternative analytical procedures or alternative precision statements for Method 24.

   g. Not later than 30 days prior to the proposed test date(s), the permittee shall submit an "Intent to Test" notification to the Ohio EPA Northeast District Office. The "Intent to Test" notification shall describe in detail the proposed test methods and procedures, the


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emissions unit operating parameters, the time(s) and date(s) of the test(s), and the person(s) who will be conducting the test(s). Failure to submit such notification for review and approval prior to the test(s) may result in the Ohio EPA Northeast District Office's refusal to accept the results of the emission test(s).

Personnel from the Ohio EPA Northeast District Office shall be permitted to witness the test(s), examine the testing equipment, and acquire data and information necessary to ensure that the operation of the emissions unit and the testing procedures provide a valid characterization of the emissions from the emissions unit and/or the performance of the control equipment.

h. A comprehensive written report on the results of the emissions test(s) shall be signed by the person or persons responsible for the tests and submitted to the Ohio EPA Northeast District Office within 30 days following completion of the test(s).

2. Emission Limitation:
151.8 lbs VOC /day and 27.7 tons VOC per rolling 12 month period from RTO #2

Applicable Compliance Method:
Compliance shall be based upon the recordkeeping specified in Section C.4 and C.5.

3. Emission Limitation:
792 lbs/month and 4.75 tons per rolling 12 month period of an individual HAP from RTO #2

Applicable Compliance Method:
Compliance shall be based upon the recordkeeping specified in Section C.5.

4. Emission Limitation:
2,067 lbs/month and 12.4 tons per rolling 12 month period of all HAPs from RTO #2

Applicable Compliance Method:
Compliance shall be based upon the recordkeeping specified in Section C.5.

5. Compliance with the VOC content restrictions of each coating, solvent and support material, and cleanup material shall be based upon the use of U.S. EPA Method 24.

6. Emission Limitation:
0.7 lb NOx/hr and 3.2 tons NOx/year from the combustion of natural gas in the thermal oxidizer.

Applicable Compliance Method:
The following equation shall be used to determine the hourly emission rate.

$$E = EF \times R \times 1/H$$

where:



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E = Emission rate, in lbs/hr

EF = Emission factor (AP-42, Section 1.4) for NOx is 100 lbs/mmcf.

R = Maximum rating of the thermal oxidizer reported to be 7.5 mmBtu/hr.

H = Heating value of the natural gas, in Btu/cf. 1,020 Btu/cf was used in the emission calculation for this permit.

The yearly rate, in tons/year, shall be determined by multiplying the hourly rate (lbs/hr) as calculated above, by (# hrs of operation/year) and (ton/2,000 lbs).

**7.** Emission Limitation:
0.6 lb CO/hr and 2.7 tons CO/year from the combustion of natural gas in the thermal oxidizer.

Applicable Compliance Method:
The following equation shall be used to determine the hourly emission rate.

E = EF x R x 1/H

where:

E = Emission rate, in lbs/hr

EF = Emission factor (AP-42, Section 1.4) for CO is 84 lbs/mmcf.

R = Maximum rating of the thermal oxidizer reported to be 7.5 mmBtu/hr.

H = Heating value of the natural gas, in Btu/cf. 1,020 Btu/cf was used in the emission calculation for this permit.

The yearly rate (tons/year) shall be determined by multiplying the hourly rate (lbs/hr), as calculated above, by (# hrs of operation/year) and (ton/2,000 lbs).

## F. Miscellaneous Requirements

1. In accordance with the provisions of OAC rule 3745-35-07, the following terms and conditions of this permit to install are federally enforceable: A-F, except C.6, C.7 and C.8.

2. The terms and condition of this permit supercede those contained with PTI # 02-12833. The exemption would be that the terms and conditions for F003 (Sawdust Storage Bin #1 Load-out) and F004 (Sawdust Storage Bin #2 Load-out) contained in PTI #02-12833 are still applicable.



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## 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 |
|---|---|---|
| K029 - Glazing booth and oven No. 2, controlled by regenerative thermal oxidizer No. 2 | OAC rule 3745-31-05(A)(3) | Volatile Organic Compound (VOC) emissions shall not exceed 151.8 pounds per day.<br><br>Hazardous Air Pollutant (HAP) emissions shall not exceed 792 pounds per month for an individual HAP and 2,067 pounds per month for combined HAPs.<br><br>Nitrogen Oxide (NOx) emissions from the combustion of natural gas from the thermal oxidizer shall not exceed 0.7 pound per hour, 3.2 tons per year.<br><br>Carbon Monoxide (CO) emissions from the combustion of natural gas from the thermal oxidizer shall not exceed 0.6 pound per hour, 2.7 tons per year.<br><br>The requirements of this rule also include compliance with the requirements of OAC rule 3745-35-02(D) |
| | OAC rule 3745-35-07(B) | See Section A.2.a through A.2.c. |
| | OAC rule 3745-21-07(G)(2) | See Section A.2.d and A.2.e. |



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| | |
|---|---|
| | The requirements of this rule are less stringent than the requirements established pursuant to OAC rule 3745-31-05(A)(3). |

**2. Additional Terms and Conditions**

**2.a** The permittee shall design enclosure #2 that will house K018, K019, K020, K021, K022, K023, K024, K025, K026, K027, K028 and K029 in such a manner as to function as a permanent total enclosure (PTE) as defined by U.S. EPA Method 204. The use of the PTE, as defined in Reference Method 204, provides for 100% capture efficiency.

**2.b** The permittee shall install and maintain an incineration system to control the VOC emissions from the permanent total enclosure, PTE #2. The incinerator system shall have a VOC destruction efficiency of at least 99% by weight.

**2.c** The volatile organic compound (VOC) content of the Coatings (including stains, toners, glazes, topcoats and sealers) and Solvents & Support Materials used by the permittee at this facility shall not exceed the following VOC content, minus water:

| | |
|---|---|
| Coatings | 7.5 lbs VOC/gallon |
| Solvents & Support Materials | 9.0 lbs VOC/gallon |

**2.d** Emissions from the Regenerative Thermal Oxidizer (RTO) #2 shall be restricted in such a manner to limit emissions from emissions units K018, K019, K020, K021, K022, K023, K024, K025, K026, K027, K028 and K029 to the following:

i. 27.7 tons VOC per rolling 12 month period
ii. 4.75 tons per rolling 12 month period of any individual HAP
iii. 12.4 tons per rolling 12 month period of total aggregate HAPs

**2.e** Emissions from the entire facility shall not exceed the following limits:

i. 55.4 tons VOC per rolling 12 month period
ii. 9.5 tons per rolling 12 month period of any individual HAP
iii. 24.8 tons per rolling 12 month period of total aggregate HAPs

**B. Operational Restrictions**

1. The average combustion temperature within RTO #2, for any 3-hour block of time when an associated emissions unit is in operation, shall not be more than 50 degrees Fahrenheit below the average temperature during the most recent emission test that demonstrated the RTO system was in compliance with the destruction efficiency requirement.



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2. The permanent total enclosure shall be maintained under negative pressure, at a minimum pressure differential that is not less than the minimum pressure differential (inches of water) established during the most recent emission test that demonstrated the emissions unit was in compliance or 0.007 inches of water as established in Method 204, whenever the emissions unit is in operation.

3. The permittee shall limit the total coating and solvent usage for PTE #2 (K018, K019, K020, K021, K022, K023, K024, K025, K026, K027, K028 and K029) as follows:

| | |
|---|---|
| Coatings (including stains, toners, glazes, topcoats and sealers) | 43,196 gallons/month |
| Solvents & Support Materials | 15,300 gallons/month |

## C. Monitoring and/or Recordkeeping Requirements

1. The permittee shall install, maintain and operate monitoring devices and a recorder which simultaneously measure and record the pressure inside and outside the permanent total enclosure.

   The monitoring and recording devices 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 following information on a daily basis:

   a. The difference in pressure between the permanent total enclosure and the surrounding area(s).

   b. A log or record of operating time for the capture (collection) system, control device, monitoring equipment, and the associated emissions unit.

2. The permittee shall operate and maintain a continuous temperature monitor and recorder which measures and records the combustion temperature within the thermal incinerator when the emissions unit is in operation. Units shall be in degrees Fahrenheit. The monitoring and recording devices shall be capable of accurately measuring the desired parameter. The temperature monitor and recorder shall be installed, calibrated, operated and maintained in accordance with the manufacturer's recommendations, with any modifications deemed necessary by the permittee.

3. The permittee shall collect and record the following information for each day for RTO #2:

   a. A log of operating time for the capture (collection) system, control device, monitoring equipment, and the associated emissions units.

   b. All 3-hour blocks of time during which the average combustion temperature within the thermal incinerator, when any of the associated emissions unit was in operation, was more than 50 degrees Fahrenheit below the average temperature during the most recent


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emission test that demonstrated the incinerator system was in compliance with the destruction efficiency requirement.

4. The permittee shall collect and record the following information each day for emissions units K018, K019, K020, K021, K022, K023, K024, K025, K026, K027, K028 and K029.

   a. The name and identification number of each coating, solvent and support material, and cleanup material, as applied.

   b. The VOC content of each coating, solvent and support material, and cleanup material, as applied, in pounds per gallon and in pounds per gallon excluding water and exempt solvents.

   c. The number of gallons of each coating, solvent and support material, and cleanup material employed.

   d. The content of each individual HAP (i.e. xylene, toluene, and any other HAP) in each coating, solvent and support material and cleanup material employed, in pounds per gallon.

   e. The total uncontrolled VOC emission rate for all coatings, solvent and support materials, and cleanup materials employed, in pounds per day. This calculation is the summation of the product of (4.b or VOC content in pounds per gallon) times (4.c or number of gallons per day) for each coating, solvent, support material and cleanup material employed.

   f. The total uncontrolled emission rate for each individual HAP from all coatings, solvent and support materials and cleanup materials employed, in pounds per day. This calculation is the summation of the product of (4.d or individual HAP content in pounds per gallon) times (4.c or number of gallons per day) for each coating, solvent, support material and cleanup material employed.

   g. The total uncontrolled emission rate of all HAPs collectively from all coatings, solvent and support materials and cleanup materials employed, in pounds per day. This calculation is summation of each individual HAP emission rate, as determined above in 4.f.

   h. The calculated, controlled VOC emission rate for all coatings, solvent and support materials and cleanup materials, in pounds per day. The controlled, daily VOC emission rate shall be calculated using the overall control efficiency for the control equipment as determined during the most recent emission test that demonstrated that the emissions unit was in compliance. The controlled VOC emission rate is the uncontrolled VOC emission rate multiplied by (1 minus the overall control efficiency, in percentage).

   i. The calculated, controlled emission rate for each individual HAP from all coatings, solvent and support materials and cleanup materials, in pounds per day. The controlled



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emission rate shall be calculated using the overall control efficiency for the control equipment as determined during the most recent emission test that demonstrated that the emissions unit was in compliance. The controlled emission rate for each individual HAP is the uncontrolled emission rate multiplied by (1 minus the overall control efficiency, in percentage).

j. The total controlled emission rate of all HAPs collectively from all coatings, solvent and support materials and cleanup materials employed, in pounds per day. This calculation is summation of each individual HAP controlled emission rate, as determined above in 4.i.

5. The permittee shall collect and record the following information each month for emissions units K018, K019, K020, K021, K022, K023, K024, K025, K026, K027, K028 and K029.

a. The controlled emission rate for each individual HAP from all coatings, solvent and support materials and cleanup materials, in pounds per rolling 12 month period. This calculation is the summation of each daily emission rate, as recorded per Section C.4.i, for the past twelve months and then multiplied by ton/2,000 lbs.

b. The controlled emission rate for all HAPs collectively from all coatings, solvent and support materials and cleanup materials, in pounds per rolling 12 month period. This calculation is the summation of each daily emission rate, as recorded per Section C.4.j, for the past twelve months and then multiplied by ton/2,000 lbs.

c. The controlled VOC emission rate for all coatings, solvent and support materials and cleanup materials, in tons per rolling 12 month period. This calculation is the summation of each daily emission rate, as recorded per Section C.4.h, for the past twelve months and then multiplied by ton/2,000 lbs.

d. The coating usage rate as described in Section B.3 in gallons per month.

e. The solvent usage rate as described in Section B.3 in gallons per month.

6. The permit to install for this emissions unit 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 for each pollutant emitted by this emissions unit using data from the permit to install application and the SCREEN 3.0 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 table summarizes the results of the modeling from RTO #2:



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| Compound | TLV (ug.m$^3$) | MAGLC = TLV/42 (ug.m$^3$) | Emission rate (g/s) | Predicted 1-hr max ground level conc. (ug.m$^3$) | MAGLC exceeded (Y/N) |
|---|---|---|---|---|---|
| formaldehyde | 271 | 6 | 0.0011 | 0.12 | N |
| methanol | 262,086 | 6,240 | 0.23 | 27.41 | N |
| acetone | 1,187,116 | 28,264 | 0.01 | 1.19 | N |
| MEK | 589,775 | 14,042 | 0.32 | 37.21 | N |
| naphthalene | 52,429 | 1,248 | 0.0001 | 0.01 | N |
| cumene | 245,787 | 5,852 | 0.000001 | 0.0001 | N |
| ethylbenzene | 4343,192 | 10,338 | 0.22 | 26.29 | N |
| MIBK | 204,826 | 4,877 | 0.18 | 21.68 | N |
| toluene | 188,405 | 4,486 | 0.57 | 67.52 | N |
| hexane | 1,762,372 | 41,961 | 0.000001 | 0.0001 | N |
| xylene | 434,192 | 10,338 | 1.03 | 120.95 | N |

7. 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 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.).



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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(s).

8. 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 satisfied 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 quarterly summaries of the following records:

   a. A log of operating time for the capture (collection) system, control device, monitoring equipment, and the associated emission unit.

   b. All 3-hour blocks of time during which the average combustion temperature within the thermal incinerator does not comply with the temperature limitation specified above.

   c. All periods of time during which the permanent total enclosure was not maintained at the required differential pressure specified above.

   d. A list of all days when the daily VOC emission rate from RTO #2 exceeded 151.8 pounds.

   e. A list of any days when noncomplying coatings were used.

   f. A list of all months when the amount of coatings (including stains, toners, glazes, topcoats and sealers) exceeded 43,196 gallons, and the amount of solvent and support materials exceeded 15,300 gallons.

2. The permittee shall also submit a quarterly deviation report when the total controlled emissions of VOC, individual HAPs, and the total aggregate HAPs from RTO #2 exceed the limits listed in A.2.d and A.2.e respectively.



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## E. Testing Requirements

1. The permittee shall conduct, or have conducted, emission testing for this emission unit in accordance with the following requirements:

   a. The emission testing shall be conducted within 3 months after issuance of this permit.

   b. The emission testing shall be conducted to demonstrate compliance with the VOC capture efficiency and control efficiency requirement specified in Section A.2.a. Emission testing shall also be conducted to establish the average combustion temperature within the thermal incinerator, as specified in Section B.1, and to establish the minimum pressure differential within the permanent total enclosure, as specified in Section B.2.

   c. The test(s) shall be conducted while the emissions units are operating at or near their maximum capacity, unless otherwise specified or approved by the Ohio EPA Northeast District Office.

   d. The capture efficiency shall be determined using Methods 204 through 204F, as specified in 40 CFR part 51, Appendix M, or the permittee may request to use an alternative method or procedure for the determination of capture efficiency in accordance with the U.S. EPA's "Guideline for Determining Capture Efficiency," dated January 9, 1995. (The Ohio EPA will consider the request, including an evaluation of the applicability, necessity, and validity of the alternative, and may approve the use of the alternative if such approval does not contravene any other applicable requirement.)

   e. The control efficiency (i.e., the percent reduction in mass emissions between the inlet and outlet of the control system) shall be determined in accordance with the test methods and procedures specified in OAC rule 3745-21-10 or an approved alternative test protocol. The test methods and procedures selected shall be based on a consideration of the diversity of the organic species present and their total concentration, and on a consideration of the potential presence of interfering gases.

   f. U.S. EPA Method 24 shall be used, in accordance with OAC rule 3745-21-04(B)(5), to determine the VOC contents for all coatings, solvent and support materials, and cleanup materials used during the performance test(s). If, pursuant to section 4.3 of Method 24, 40 CFR part 60, Appendix A, an owner or operator determines that Method 24 cannot be used for a particular coating, solvent and support material, or cleanup material, the permittee shall so notify the Administrator of the U.S. EPA and shall use formulation data for that coating, solvent and support material, or cleanup material to demonstrate compliance until the U.S. EPA provides alternative analytical procedures or alternative precision statements for Method 24.

   g. Not later than 30 days prior to the proposed test date(s), the permittee shall submit an "Intent to Test" notification to the Ohio EPA Northeast District Office. The "Intent to Test" notification shall describe in detail the proposed test methods and procedures, the



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emissions unit operating parameters, the time(s) and date(s) of the test(s), and the person(s) who will be conducting the test(s). Failure to submit such notification for review and approval prior to the test(s) may result in the Ohio EPA Northeast District Office's refusal to accept the results of the emission test(s).

Personnel from the Ohio EPA Northeast District Office shall be permitted to witness the test(s), examine the testing equipment, and acquire data and information necessary to ensure



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that the operation of the emissions unit and the testing procedures provide a valid characterization of the emissions from the emissions unit and/or the performance of the control equipment.

h. A comprehensive written report on the results of the emissions test(s) shall be signed by the person or persons responsible for the tests and submitted to the Ohio EPA Northeast District Office within 30 days following completion of the test(s).

2. Emission Limitation:
151.8 lbs VOC /day and 27.7 tons VOC per rolling 12 month period from RTO #2

Applicable Compliance Method:
Compliance shall be based upon the recordkeeping specified in Section C.4 and C.5.

3. Emission Limitation:
792 lbs/month and 4.75 tons per rolling 12 month period of an individual HAP from RTO #2

Applicable Compliance Method:
Compliance shall be based upon the recordkeeping specified in Section C.5.

4. Emission Limitation:
2,067 lbs/month and 12.4 tons per rolling 12 month period of all HAPs from RTO #2

Applicable Compliance Method:
Compliance shall be based upon the recordkeeping specified in Section C.5.

5. Compliance with the VOC content restrictions of each coating, solvent and support material, and cleanup material shall be based upon the use of U.S. EPA Method 24.

6. Emission Limitation:
0.7 lb NOx/hr and 3.2 tons NOx/year from the combustion of natural gas in the thermal oxidizer.

Applicable Compliance Method:
The following equation shall be used to determine the hourly emission rate.

$$E = EF \times R \times 1/H$$

where:

E = Emission rate, in lbs/hr

EF = Emission factor (AP-42, Section 1.4) for NOx is 100 lbs/mmcf.

R = Maximum rating of the thermal oxidizer reported to be 7.5 mmBtu/hr.



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H = Heating value of the natural gas, in Btu/cf. 1,020 Btu/cf was used in the emission calculation for this permit.

The yearly rate, in tons/year, shall be determined by multiplying the hourly rate (lbs/hr) as calculated above, by (# hrs of operation/year) and (ton/2,000 lbs).

**7.** Emission Limitation:
0.6 lb CO/hr and 2.7 tons CO/year from the combustion of natural gas in the thermal oxidizer.

Applicable Compliance Method:
The following equation shall be used to determine the hourly emission rate.

E = EF x R x 1/H

where:

E = Emission rate, in lbs/hr

EF = Emission factor (AP-42, Section 1.4) for CO is 84 lbs/mmcf.

R = Maximum rating of the thermal oxidizer reported to be 7.5 mmBtu/hr.

H = Heating value of the natural gas, in Btu/cf. 1,020 Btu/cf was used in the emission calculation for this permit.

The yearly rate (tons/year) shall be determined by multiplying the hourly rate (lbs/hr), as calculated above, by (# hrs of operation/year) and (ton/2,000 lbs).

## F. Miscellaneous Requirements

1. In accordance with the provisions of OAC rule 3745-35-07, the following terms and conditions of this permit to install are federally enforceable: A-F, except C.6, C.7 and C.8.

2. The terms and condition of this permit supercede those contained with PTI # 02-12833. The exemption would be that the terms and conditions for F003 (Sawdust Storage Bin #1 Load-out) and F004 (Sawdust Storage Bin #2 Load-out) contained in PTI #02-12833 are still applicable.



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