



State of Ohio Environmental Protection Agency

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

**CERTIFIED MAIL**

Street Address:

122 S. Front Street

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

Mailing Address:

Lazarus Gov. Center  
P.O. Box 1049

**Application No: 16-02284**

**DATE: 2/26/2004**

The Press of Ohio  
Robert Terry  
3745 Sunnybrook Rd  
Brimfield, OH 44240

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

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

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

Sincerely,

*Michael W. Ahern*

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

CC: USEPA

ARAQMD



Permit To Install  
Terms and Conditions

Issue Date: 2/26/2004  
Effective Date: 2/26/2004

**FINAL ADMINISTRATIVE MODIFICATION OF PERMIT TO INSTALL 16-02284**

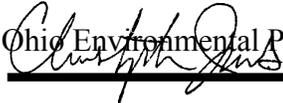
Application Number: 16-02284  
APS Premise Number: 1667000047  
Permit Fee: **\$0**  
Name of Facility: The Press of Ohio  
Person to Contact: Robert Terry  
Address: 3745 Sunnybrook Rd  
Brimfield, OH 44240

Location of proposed air contaminant source(s) [emissions unit(s)]:  
**3765 Sunnybrook Rd**  
**Brimfield, Ohio**

Description of proposed emissions unit(s):  
**Administrative modification of PTI 16-02284 issued final on 8/14/2003 to fix emission limitation and usage limitation tables in emissions units K001 through K009.**

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

This permit is granted subject to the conditions attached hereto.

  
Ohio Environmental Protection Agency

Director

## Part I - GENERAL TERMS AND CONDITIONS

### A. Permit to Install General Terms and Conditions

#### 1. Compliance Requirements

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

#### 2. Reporting Requirements

The permittee shall submit required reports in the following manner:

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

#### 3. Records Retention Requirements

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

#### 4. Inspections and Information Requests

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

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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**

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

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

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

#### 14. Construction Compliance Certification

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

#### 15. Fees

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

### B. Permit to Install Summary of Allowable Emissions

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

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

<u>Pollutant</u>	<u>Tons Per Year</u>
OC	90.6
CO	24.05
NOx	28.5
PE	14.6
any individual	8.0
HAP	
combined HAPs	20.0

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**Facility ID: 1667000047**

The P]

PTI A

Modification Issued: 2/26/2004

Emissions Unit ID: **K001****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

K001 - 2-Unit Timson Heatset Web Offset Printing Press No 201 Model No T32 - Timson Press No 201 (the terms and conditions in this permit supercede the terms and conditions in PTI 16-1815 issued April 21, 1999)Modified.

OAC rule 3745-17-07

OAC rule 3745-17-11

OAC rule 3745-21-07(G)(2)

OAC rule 3745-35-07(B)

Applicable Emissions  
Limitations/Control Measures

0.45 pound of organic compounds (OC) per hour for coatings and fountain solutions

0.4 pound of particulate emissions (PE) per hour (including combustion emissions)

1.8 tons of PE per year (including combustion emissions)

Natural gas combustion emissions from the RTO thermal incinerator shall not exceed the following:

0.72 pound of CO per hour and 3.2 tons of CO per year;

0.86 pound of NO<sub>x</sub> per hour and 3.8 tons of NO<sub>x</sub> per year; and

0.10 pound of OC per hour and 0.4 ton of OC per year.

Natural gas combustion emissions from the dryer oven shall not exceed the following:

0.64 pound of CO per hour and 2.8 tons of CO per year;

0.76 pound of NO<sub>x</sub> per hour and 3.3 tons of NO<sub>x</sub> per year; and

0.08 pound of OC per hour and 0.4 ton of OC per year.

The requirements of this rule also include compliance with the requirements of OAC rule 3745-17-07 and OAC rule 3745-35-07.

Visible particulate emissions from any stack shall not exceed 20% opacity as a 6-minute average, except as provided by the rule.

The particulate emission limitation based on OAC rule 3745-17-11 is less stringent than the particulate emission limitation established in accordance with the best available technology requirements specified in OAC rule 3745-31-05.

Exempt. See B.1 below.

The control (destruction) efficiency of the RTO thermal incinerator shall be at least 95%, by weight for OC and organic HAP.

The emissions of OC from emissions units K001, K002, K003, K004, K005, K006, and K009 shall not exceed 48.3 tons per year, based upon a rolling, 12-month summation of the monthly emissions.

See B.5 below.

The emissions of any individual hazardous air pollutant (HAP) from emissions units K001 through K009 shall not exceed 8.0 tons per year, based upon a rolling, 12-month

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summation of the monthly emissions.

The emissions of combined hazardous air pollutants (HAPs) from emissions units K001 through K009 shall not exceed 20.0 tons per year, based upon a rolling, 12-month summation of the monthly emissions.

See A.2.a below.

## **2. Additional Terms and Conditions**

- 2.a** To ensure enforceability during the first 12 calendar months of operation following the issuance of this permit, the permittee shall not exceed the emission levels specified in the following table:

<u>Month(s)</u>	<u>Maximum Allowable Cumulative Emissions of Any Individual HAP (Tons)</u>	<u>Maximum Allowable Cumulative Emissions of Combined HAPs (Tons)</u>
1	0.7	1.7
1-2	1.3	3.3
1-3	2.0	5.0
1-4	2.7	6.7
1-5	3.3	8.3
1-6	4.0	10.0
1-7	4.7	11.7
1-8	5.3	13.3
1-9	6.0	15.0
1-10	6.7	16.7
1-11	7.3	18.3
1-12	8.0	20.0

After the first 12 calendar months of operation following the issuance of this permit, compliance with the annual emission limitations for any individual HAP and combined HAPs shall be based upon a rolling, 12-month summation of the monthly emissions.

- 2.b** The hourly OC emission limitation regulated per OAC rule 3745-31-05(A)(3) is based on the emissions unit's potential to emit. Therefore, no record keeping or reporting is

required to demonstrate compliance with this limit.

However, if any proposed change(s), such as with production capacity, the types and/or quantities of materials used or processed, or anything else that increases the potential emissions of any air pollutant, then the permittee shall apply for and obtain either a modification to the permit to install or a new final permit to install prior to the change(s).

- 2.c The hourly and annual CO, NOx, and OC emission limitations from natural gas combustion and the hourly and annual PE emissions limitations regulated per OAC rule 3745-31-05(A)(3) are based on the emissions unit's potential to emit. Therefore, no record keeping or reporting is required to demonstrate compliance with these limits.

**B. Operational Restrictions**

1. The permittee shall not employ any photochemically reactive materials, as defined in OAC rule 3745-21-01(C)(5), in this emissions unit. This determination shall be made based on the actual formulation of the materials after any final in-plant reducing or thinning and prior to application of the materials.
2. The OC and organic HAP emissions from this emissions unit shall be vented to the RTO thermal incinerator when the emissions unit is in operation.
3. The average combustion temperature within the RTO thermal incinerator, for any 3-hour block of time, shall not be more than 50 degrees Fahrenheit below the average temperature during the most recent emission test that demonstrated the emissions unit(s) was (were) in compliance.
4. The maximum annual coating usage, cleanup material usage, and concentrated fountain solution usage for emissions units K001, K002, K003, K004, K005, K006, and K009 shall not exceed 2,200,000 pounds per year, 91,080 pounds per year, and 228,253 pounds per year, respectively, based upon a rolling, 12-month summation of the usage figures. The usage limitations result in a 48.3 tons of organic compounds (OC) per year emission limitation for K001 through K006 and K009. The OC content of the coatings and the concentrated fountain solutions employed shall not exceed 45.0% by weight and 15.0% by weight, respectively.

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

<u>Month(s)</u>	<u>Maximum Allowable Cumulative Coating Usage (pounds)</u>	<u>Maximum Allowable Cumulative Cleanup Material Usage (pounds)</u>	<u>Maximum Allowable Cumulative Concentrated Fountain Solution Usage (pounds)</u>
1	183,333	7,590	19,021
1-2	366,667	15,180	38,042
1-3	550,000	22,770	57,063

The P]

PTI A

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1-4	733,333	30,360	76,084
1-5	916,667	37,950	95,105
1-6	1,100,000	45,540	114,127
1-7	1,283,333	53,130	133,148
1-8	1,466,667	60,720	152,169

**The P]****PTI A**Emissions Unit ID: **K001****Modification Issued: 2/26/2004**

1-9	1,650,000	68,310	171,190
1-10	1,866,333	75,900	190,211
1-11	2,016,677	83,490	209,232
1-12	2,200,000	91,080	228,253

After the first 12 calendar months of operation following the issuance of this permit, compliance with the annual usage limitations shall be based upon a rolling, 12-month summation of the usage figures.

5. The permittee shall only employ cleanup materials that have a vapor pressure that is less than 10 mm Hg at 20 degrees Celsius (68 degrees Fahrenheit). The permittee shall store the cleanup cloths in closed containers.
6. The dryer oven for this emissions unit shall only employ natural gas.
7. The permittee shall not employ fountain solutions that contain alcohol in this emissions unit.
8. The permittee shall only employ automatic blanket wash cleanup that contains no organic solvent in this emissions unit. Only the manual cleanup material can contain organic solvents.

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

1. The permittee shall maintain the following information for this emissions unit:
  - a. the MSDS sheets for each liquid organic material employed;
  - b. documentation as to whether or not each material is a photochemically reactive material; and
  - c. for materials that are reduced or thinned prior to application, documentation as to whether or not the resulting material is a photochemically reactive material.
2. The permittee shall maintain the following information for this emissions unit:
  - a. the MSDS sheets for each fountain solution employed; and
  - b. documentation as to whether or not each fountain solution contains any alcohol.
3. The permittee shall maintain documentation of the vapor pressure, in millimeters of mercury at 20 degrees Celsius (68 degrees Fahrenheit) for each cleanup material employed.

4. The permittee shall collect and record the following information monthly for emissions units K001, K002, K003, K004, K005, K006, and K009:
  - a. the company identification for each coating, concentrated fountain solution, and cleanup material employed;
  - b. the amount of each coating, concentrated fountain solution, and cleanup employed, in pounds;
  - c. the total amount of all coatings, all concentrated fountain solutions, and all cleanup materials employed, in pounds;
  - d. the OC content of each coating, concentrated fountain solution, and cleanup material employed, in weight percent;
  - e. the total uncontrolled OC emission rate from all coatings employed, in pounds per month (i.e., [(c)x(the worst-case OC content in weight percent of all the coatings employed in the month)/100] or the sum of [(b)x(d)/100] for each coating employed);
  - f. the total controlled OC emission rate from all coatings employed, in tons per month (i.e., [(0.80)x(e)x(1-destruction efficiency\*)]\*\*, and then divided by 2000);
  - g. the total uncontrolled OC emission rate from all concentrated fountain solutions employed, in pounds per month (i.e., the sum of [(b)x(d)/100] for each concentrated fountain solution employed);
  - h. the total controlled OC emission rate from all concentrated fountain solutions employed, in tons per month (i.e., [(g)x(1- (0.7) x destruction efficiency\*)]\*\*, and then divided by 2000);
  - i. the total controlled OC emission rate from all cleanup materials employed, in tons per month (i.e., the sum of (0.5)x(b)x(d)\*\* for each cleanup material employed, and then divided by 2000);
  - j. the total OC emission rate from the emissions units K001, K002, K003, K004, K005, K006, and K009, in tons per month (i.e., [(f)+(h)+(i)]).
  - k. beginning after the first 12 calendar months of operation following the issuance of this permit, the rolling, 12-month summations of the coating usage figures, concentrated fountain solution usage figures, cleanup material usage figures, and OC emissions for each month, in pounds or tons; and
  - l. during the first 12 calendar months of operation following the issuance of this permit, the

permittee shall record the cumulative coating usage, concentrated fountain solution usage, and cleanup material usage for each month, in pounds.

\* The permittee shall use the destruction efficiency from the most recent performance test that demonstrated that the emissions unit(s) was (were) in compliance.

\*\*Per Ohio EPA Division of Air Pollution Control Engineering Section Engineer Guide #56 revised June 15, 1999 and based on a successful demonstration of negative pressure in the dryer oven in accordance with section E.1 of the testing requirements, the following assumptions shall be used in calculating the OC emissions: 20 percent, by weight, of the solvent in the coatings is retained in the web or substrate and the remaining 80 percent, by weight, is vented to the incinerator; 30 percent, by weight, of the fountain solution emissions are fugitive and the remaining 70 percent, by weight, is vented to the incinerator for fountain solutions containing only alcohol substitutes; and 50 percent, by weight, of the manual cleanup material is retained in the cleanup cloths and the remaining 50 percent, by weight, is fugitive emissions if the solvent has a vapor pressure of 10 mm Hg or lower at 20 degrees Celsius (68 degrees Fahrenheit).

5. The permittee shall collect and record the following information monthly for emissions units K001 through K009:
  - a. For emissions units K001, K002, K003, K004, K005, K006, and K009:
    - i. the company identification for each coating, concentrated fountain solution, and cleanup material employed;
    - ii. the amount of each coating, concentrated fountain solution, and cleanup employed, in pounds;
    - iii. the individual HAP content of each HAP of each coating, concentrated fountain solution, and cleanup material employed, in weight percent;
    - iv. the combined HAPs content of each coating, concentrated fountain solution, and cleanup material employed (the sum of all the individual HAP contents in (iii)), in weight percent;
    - v. the uncontrolled individual HAP emission rate for each HAP from all coatings employed, in pounds per month (i.e., the sum of [(ii)x(iii)/100] for each HAP for each coating employed);

Emissions Unit ID: **K001**

- vi. the controlled individual HAP emission rate for each HAP from all coatings employed, in tons per month (i.e.,  $[(0.80) \times (v) \times (1 - \text{destruction efficiency}^*)]^{**}$ , and then divided by 2000 for each HAP);
  - vii. the uncontrolled combined HAPs emission rate from all coatings employed, in pounds per month (i.e., the sum of  $[(ii) \times (iv) / 100]$  for each coating employed);
  - viii. the controlled combined HAPs emission rate for each HAP from all coatings employed, in tons per month (i.e.,  $[(0.80) \times (vii) \times (1 - \text{destruction efficiency}^*)]^{**}$ , and then divided by 2000);
  - ix. the uncontrolled individual HAP emission rate for each HAP from all concentrated fountain solutions employed, in pounds per month (i.e., the sum of  $[(ii) \times (iii) / 100]$  for each HAP for each fountain solution employed);
  - x. the controlled individual HAP emission rate for each HAP from all concentrated fountain solutions employed, in tons per month (i.e.,  $[(ix) \times [1 - (0.7) \times \text{destruction efficiency}^*]]^{**}$ , and then divided by 2000 for each HAP);
  - xi. the uncontrolled combined HAPs emission rate from all concentrated fountain solutions employed, in pounds per month (i.e., the sum of  $[(ii) \times (iv) / 100]$  for each fountain solution employed);
  - xii. the controlled combined HAPs emission rate from all concentrated fountain solutions employed, in tons per month (i.e.,  $[(xi) \times [1 - (0.7) \times \text{destruction efficiency}^*]]^{**}$ , and then divided by 2000);
  - xiii. the controlled individual HAP emission rate for each HAP from all cleanup materials employed, in tons per month (i.e., the sum of  $(0.5) \times (ii) \times (iii)^{**}$  for each HAP for each cleanup material employed, and then divided by 2000);
  - xiv. the controlled combined HAPs emission rate from all cleanup materials employed, in tons per month (i.e., the sum of  $(0.5) \times (ii) \times (iv)^{**}$  for each cleanup material employed, and then divided by 2000);
  - xv. the individual HAP emission rate for each HAP from all cleanup materials, all concentrated fountain solutions, and all coatings employed, in tons per month (i.e.,  $[(vi) + (x) + (xiii)]$  for each HAP); and
  - xvi. the combined HAPs emission rate from all cleanup materials, all concentrated fountain solutions, and all coatings employed, in tons per month (i.e.,  $[(viii) + (xii) + (xiv)]$ ).
- b. For emissions units K007 and K008:

- i. the company identification for each non-heatset ink, aqueous coating, concentrated fountain etch solution, fountain solution additive, manual cleanup material, and automatic cleanup material employed;
- ii. the amount of each non-heatset ink, aqueous coating, concentrated fountain etch solution, fountain solution additive, manual cleanup material, and automatic cleanup material employed, in pounds;
- iii. the individual HAP content of each HAP of each non-heatset ink, aqueous coating, concentrated fountain etch solution, fountain solution additive, manual cleanup material, and automatic cleanup material employed, in weight percent;
- iv. the combined HAPs content of each non-heatset ink, aqueous coating, concentrated fountain etch solution, fountain solution additive, manual cleanup material, and automatic cleanup material employed (the sum of all the individual HAP contents in (iii)), in weight percent;
- v. the individual HAP emission rate for each HAP from all non-heatset inks employed, in tons (i.e., the sum of  $[(ii) \times (iii)/100] \times 0.05^{***}$  for each HAP for each non-heatset ink employed, and then divided by 2000);
- vi. the combined HAPs emission rate from all non-heatset inks employed, in tons (i.e., the sum of  $[(ii) \times (iv)/100] \times 0.05^{***}$  for each non-heatset ink employed, and then divided by 2000);
- vii. the individual HAP emission rate for each HAP from all aqueous coatings employed, in tons (i.e., the sum of  $[(ii) \times (iii)/100]$  for each HAP for each aqueous coating employed, and then divided by 2000);
- viii. the combined HAPs emission rate from all aqueous coatings employed, in tons (i.e., the sum of  $[(ii) \times (iv)/100]$  for each aqueous coating employed, and then divided by 2000);
- ix. the individual HAP emission rate for each HAP from all concentrated fountain etch solutions employed, in tons (i.e., the sum of  $[(ii) \times (iii)/100]$  for each HAP for each concentrated fountain etch solution employed, and then divided by 2000);
- x. the combined HAPs emission rate from all concentrated fountain etch solutions employed, in tons (i.e., the sum of  $[(ii) \times (iv)/100]$  for each concentrated fountain

Emissions Unit ID: **K001**

etch solution employed, and then divided by 2000);

- xi. the individual HAP emission rate for each HAP from all fountain solution additives employed, in tons (i.e., the sum of [(ii) x (iii)/100] for each HAP for each fountain solution additive employed, and then divided by 2000);
  - xii. the combined HAPs emission rate from all fountain solution additives employed, in tons (i.e., the sum of [(ii) x (iv)/100] for each fountain solution additive employed, and then divided by 2000);
  - xiii. the individual HAP emission rate for each HAP from all manual cleanup materials employed, in tons (i.e., the sum of [(ii) x (iii)/100] x 0.5\*\*\*\* for each HAP for each manual cleanup material employed, and then divided by 2000);
  - xiv. the combined HAPs emission rate from all manual cleanup materials employed, in tons (i.e., the sum of [(ii) x (iv)/100] x 0.5\*\*\*\* for each manual cleanup material employed, and then divided by 2000);
  - xv. the individual HAP emission rate for each HAP from all automatic cleanup materials employed, in tons (i.e., the sum of [(ii) x (iii)/100] for each HAP for each automatic cleanup material employed, and then divided by 2000);
  - xvi. the combined HAPs emission rate from all automatic cleanup materials employed, in tons (i.e., the sum of [(ii) x (iv)/100] for each automatic cleanup material employed, and then divided by 2000);
  - xvii. the individual HAP emission rate for each HAP from all non-heatset ink, all aqueous coating, all concentrated fountain etch solution, all fountain solution additive, all manual cleanup material, and all automatic cleanup material employed, in tons per month ( i.e., [(v) + (vii) + (ix) + (xi) + (xiii) + (xv)] for each HAP); and
  - xviii. the combined HAPs emission rate from all non-heatset ink, all aqueous coating, all concentrated fountain etch solution, all fountain solution additive, all manual cleanup material, and all automatic cleanup material employed, in tons per month ( i.e., [(vi) + (viii) + (x) + (xii) + (xiv) + (xvi)]).
- c. For emissions unit K001 through K009:
- i. the total individual HAP emission rate for each HAP, in tons per month (i.e., (4.a.xv) + (4.b.xvii) for each HAP);
  - ii. the total combined HAPs emission rate, in tons per month (i.e., (4.a.xvi) + (4.b.xviii));

- iii. beginning after the first 12 calendar months of operation following the issuance of this permit, the rolling, 12-month summations of individual HAP emissions for each HAP and of combined HAPs emissions for each month, in tons; and
- iv. during the first 12 calendar months of operation following the issuance of this permit, the permittee shall record the cumulative emissions of individual HAP for each HAP and the cumulative emissions of combined HAPs for each month, in tons;
- v. during the first 12 calendar months of operation following the issuance of this permit if the cumulative emissions of combined HAPs for each month are less than or equal to the allowable cumulative emissions of any individual HAP for each month, then cumulative emissions for each individual HAP do not need to be calculated; and
- vi. beginning after the first 12 calendar months of operation following the issuance of this permit if the rolling, 12-month summation of combined HAPs is 8.0 tons per year or less for each month, then the rolling, 12-month summations of each individual HAP do not need to be calculated unless any subsequent rolling, 12-month summation exceeds 8.0 tons per year.

\* The permittee shall use the destruction efficiency from the most recent performance test that demonstrated that the emissions unit(s) was (were) in compliance.

\*\*Per Ohio EPA Division of Air Pollution Control Engineering Section Engineer Guide #56 revised June 15, 1999 and based on a successful demonstration of negative pressure in the dryer ovens, the following assumptions shall be used in calculating the HAP emissions: 20 percent, by weight, of the solvent in the coatings is retained in the web or substrate and the remaining 80 percent, by weight, is vented to the incinerator; 30 percent, by weight, of the fountain solution emissions are fugitive and the remaining 70 percent, by weight, is vented to the incinerator for fountain solutions containing only alcohol substitutes; and 50 percent, by weight, of the manual cleanup material is retained in the cleanup cloths and the remaining 50 percent, by weight, is fugitive emissions if the solvent has a vapor pressure of 10 mm Hg or lower at 20 degrees Celsius (68 degrees Fahrenheit).

\*\*\*Ohio EPA, Division of Air Pollution Control, Engineering Section, Engineering Guide #68 (dated July 7, 1997) states that only 5% of the ink solvent is emitted from non-heatset inks.

\*\*\*\*Ohio EPA, Division of Air Pollution Control, Engineering Section, Engineering

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Guide #68 (dated July 7, 1997) states 50% of the solvent is retained in the shop towel and 50% is emitted for cleanup solvents which have a composite vapor pressure less than 10 millimeters of mercury at 20 degrees Celsius.

6. The permittee shall operate and maintain a continuous temperature monitor and recorder which measures and records the combustion temperature within the RTO 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.

The permittee shall collect and record the following information for each day:

- a. all 3-hour blocks of time during which the average combustion temperature within the RTO thermal incinerator, when the emissions unit was in operation, was more than 50 degrees Fahrenheit below the average temperature during the most recent emission test that demonstrated the emissions unit was in compliance; and
  - b. a log of the downtime for the capture (collection) system, control device, and monitoring equipment, when the associated emissions unit was in operation.
7. The permit to install for this emissions unit (K001) was evaluated based on the actual materials (typically coatings and cleanup materials) and the design parameters of the emissions unit's exhaust system, as specified by the permittee in the permit to install application. The Ohio EPA's "Review of New Sources of Air Toxic Emissions" policy ("Air Toxic Policy") was applied for each pollutant emitted by this emissions unit using data from the permit to install application and the SCREEN 3.0 model (or other Ohio EPA approved model). The predicted 1-hour maximum ground-level concentration from the use of the SCREEN 3.0 model was compared to the Maximum Acceptable Ground-Level Concentration (MAGLC). The following summarizes the results of the modeling for the "worst case" pollutant(s):

Pollutant: ethylene glycol n-butyl ether

TLV (mg/m<sup>3</sup>): 97

Maximum Hourly Emission Rate (lbs/hr): 1.66\*

Predicted 1-Hour Maximum Ground-Level  
 Concentration (ug/m<sup>3</sup>): 320.0

MAGLC (ug/m<sup>3</sup>): 2309.5

Pollutant: ethylene glycol

TLV (mg/m<sup>3</sup>): 73

Maximum Hourly Emission Rate (lbs/hr): 1.06\*

Predicted 1-Hour Maximum Ground-Level  
Concentration (ug/m<sup>3</sup>): 192.6

MAGLC (ug/m<sup>3</sup>): 1738.1

Pollutant: petroleum naphtha

TLV (mg/m<sup>3</sup>): 525

Maximum Hourly Emission Rate (lbs/hr): 8.27\*\*

Predicted 1-Hour Maximum Ground-Level  
Concentration (ug/m<sup>3</sup>): 1661

MAGLC (ug/m<sup>3</sup>): 12500

\*Maximum emission rate from emissions units K001 through K009.

\*\*Maximum emission rate from emissions units K001 through K006 and K009.

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

- a. changes in the composition of the materials used (typically for coatings or cleanup materials), or the use of new materials, that would result in the emission of a compound with a lower Threshold Limit Value (TLV), as indicated in the most recent version of the handbook entitled "American Conference of Governmental Industrial Hygienists (ACGIH)," than the lowest TLV value previously modeled;
- b. changes in the composition of the materials, or use of new materials, that would result in an increase in emissions of any pollutant with a listed TLV that was proposed in the

application and modeled; and

- c. physical changes to the emissions unit or its exhaust parameters (e.g., increased/ decreased exhaust flow, changes in stack height, changes in stack diameter, etc.).

If the permittee determines that the "Air Toxic Policy" will be satisfied for the above changes, the Ohio EPA will not consider the change(s) to be a "modification" under OAC rule 3745-31-01(VV)(1)(a)(ii), and a modification of the existing permit to install will not be required. If the change(s) is (are) defined as a modification under other provisions of the modification definition (other than (VV)(1)(a)(ii)), then the permittee shall obtain a final permit to install prior to the change.

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

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

**D. Reporting Requirements**

1. The permittee shall notify the Director (the appropriate Ohio EPA District Office or local air agency) in writing if a "photochemically reactive material" (as defined in OAC 3745-21-01 (C)(5)) is employed in the emissions unit . The notification shall include a copy of such record and shall be sent to the Director (the appropriate Ohio EPA District Office or local air agency) within 45 days after such an occurrence.
2. The permittee shall submit deviation (excursion) reports that identify any time periods when the emissions unit was in operation and the emissions from the emissions unit were not vented to the RTO thermal incinerator. Each report shall be submitted within 30 days after the deviation occurs.
3. The permittee shall submit deviation (excursion) reports which identify all 3-hour blocks of time during which the average combustion temperature within the RTO thermal incinerator does not comply with the temperature limitation specified above.
4. The permittee shall submit deviation (excursion) reports which identify all exceedances of the rolling, 12-month usage limitations for coatings, cleanup materials, and concentrated fountain solutions and the rolling 12-month emission limitations for OC, any individual HAP, and combined HAPs and, for the first 12 calendar months of operation following the issuance of this permit, all exceedances of the maximum allowable cumulative coating usage levels, cleanup material usage levels, concentrated fountain solution levels, emissions of any individual HAP levels, and emissions of combined HAPs levels.
5. The permittee shall notify the Director (the appropriate Ohio EPA District Office or local air agency) in writing if a coating or a concentrated fountain solution which exceeds the OC contents specified in section B.5 of these terms and conditions is employed in this emissions unit. The notification shall include a copy of such record and shall be sent to the Director (the appropriate Ohio EPA District Office or local air agency) within 30 days after such an occurrence.
6. The permittee shall notify the Director (the appropriate Ohio EPA District Office or local air agency) in writing if a fountain solution containing any alcohol is employed in this emissions unit. The notification shall include a copy of such record and shall be sent to the Director (the appropriate Ohio EPA District Office or local air agency) within 45 days after such an occurrence.
7. The permittee shall notify the Director (the appropriate Ohio EPA District Office or local air agency) in writing if a cleanup material that has a vapor pressure of 10 mm Hg or greater is employed in this emissions unit . The notification shall include a copy of such record and shall be sent to the

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Director (the appropriate Ohio EPA District Office or local air agency) within 45 days after such an occurrence.

8. The permittee shall also submit annual reports which specify the total OC emissions from emissions units K001, K002, K003, K004, K005, K006, and K009 combined for the previous calendar year. These reports shall be submitted by January 31 of each year.
9. The deviation reports shall be submitted in accordance with the requirements specified in the General Terms and Conditions of this permit.

#### **E. Testing Requirements**

1. A demonstration of negative pressure differential for the dryer oven shall be conducted within 90 days of start-up of emissions unit K009 to confirm that the assumptions stated in sections C.4 and C.5 of these terms and conditions apply to this emissions unit. Such a demonstration shall be shown by either of the following methods:
  - a. By using a differential pressure gauge so that an inlet of the gauge is within the dryer and the other inlet is open to the ambient air in the pressroom. The differential pressure gauge may be a liquid column gauge or may be a mechanical type gauge. The differential pressure gauge shall be properly leveled and zeroed according to the manufacturer's instructions. If a mechanical type gauge is used, it should be calibrated according to the manufacturer's instructions against a liquid column gauge. (If a liquid column gauge is used, no calibration is necessary). The gauge should measure a pressure differential of at least 0.007 inches of water column whenever the press is operating to ensure that air is entering the dryer through all of the dryer's openings (excluding the exhaust stack). If a pressure gauge is to be permanently installed on the dryer, the location of the pressure tap within the dryer should not be modified without first consulting with the dryer manufacturer/installer. This is important since the manufacturer/installer may have used the pressure differential to set the exhaust rate for the dryer to ensure that the VOC concentration within the dryer remains below 25 percent of the lower explosive limit; or
  - b. By using smoke tubes, plastic flow indicating strips or other flow indicating devices approved by the field office in consultation with the Engineering Section to demonstrate that air flows into the dryer at all openings in the dryer (excluding the exhaust stack). All points measured with such devices should indicate airflow into the dryer.

If the testing fails to demonstrate negative pressure in the dryer oven, the assumptions detailed in sections C.4 and C.5 of these terms and conditions shall not apply, and an overall control efficiency of this emissions unit shall be based on capture efficiency testing as described in section E.2.e below.

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

- a. The emission testing shall be conducted within 90 days of start-up of emissions unit K009.
  - b. The emission testing shall be conducted to demonstrate compliance with the capture efficiency for OC (verify negative pressure in the dryer oven as described in Section E.1 above) and the control efficiency for OC and organic HAP.
  - c. The test method(s) which must be employed to demonstrate compliance with the control efficiency limitation for OC and organic HAP are specified below. Alternative U.S. EPA approved test methods may be used with prior approval from the Ohio EPA.
  - d. 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. 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.
  - e. If required, 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 USEPA's "Guidelines 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.)
  - f. The test(s) shall be conducted while the emissions unit is operating at or near its maximum capacity, unless otherwise specified or approved by the appropriate Ohio EPA District Office or local air agency.
3. Not later than 30 days prior to the proposed test date(s), the permittee shall submit an "Intent to Test" notification to the appropriate Ohio EPA District Office or local air agency. 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 District Office's or local air agency's refusal to accept the results of the emission test(s).
  4. Personnel from the appropriate Ohio EPA District Office or local air agency 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.
  5. A comprehensive written report on the results of the emissions test(s) shall be signed by the

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person or persons responsible for the tests and submitted to the appropriate Ohio EPA District Office or local air agency within 30 days following completion of the test(s). The permittee may request additional time for the submittal of the written report, where warranted, with prior approval from the appropriate Ohio EPA District Office or local air agency.

6. Compliance with the emission limitations in sections A.1 and B.5 of these terms and conditions shall be determined in accordance with the following methods:

a. Emission Limitations:

OC content of 45.0%, by weight, for coatings  
 OC content of 15.0%, by weight, for concentrated fountain solutions

Applicable Compliance Method:

Formulation data or USEPA Method 24 (for coatings) or 24A (for flexographic and rotogravure printing inks and related coatings) shall be used to determine the organic compound contents of the coatings and concentrated fountain solutions.

b. Emission Limitation:

0.45 pound of OC per hour for coatings and fountain solutions

Applicable Compliance Method:

Compliance shall be determined by the following equation:

$$[(\text{maximum coating usage, in pounds per hour}) \times (0.45^*) \times (0.8^{**}) \times (1-0.95^{***}) + (\text{maximum concentrated fountain solution usage, in pounds per hour}) \times (0.15^*) \times (1-(0.7^{**}) \times (0.95^{***}))]$$

\*Maximum allowable OC content for coatings and concentrated fountain solutions.

\*\*Per Ohio EPA Division of Air Pollution Control Engineering Section Engineer Guide #56 revised June 15, 1999, emission factors provided in the answer to question number 21.

\*\*\*Minimum required control efficiency for the RTO thermal incinerator.

c. Emission Limitation:

0.4 pound of PE per hour

Applicable Compliance Method:

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Stack testing may be required in the future in accordance with the test method(s) and procedures in OAC rule 3745-17-03(B)(10).

- d. Emission Limitation:
- 1.8 tons of PE per year
- Applicable Compliance Method:
- Multiply the allowable hourly emission limitation by 8760 hours per year, then divide by 2000 pounds per ton.
- e. Emission Limitations:
- dryer oven - 0.64 pound of CO per hour  
RTO thermal incinerator - 0.72 pound of CO per hour
- Applicable Compliance Method:
- Multiply the CO emission factor of 84 pounds of CO emissions per million cubic feet of natural gas by the maximum hourly natural gas usage. The CO emission factor is from AP-42, 5th edition, Table 1.4-1, dated 2/98.
- f. Emission Limitations:
- dryer oven - 2.8 tons of CO per year  
RTO thermal incinerator - 3.2 tons of CO per year
- Applicable Compliance Method:
- Multiply the allowable hourly emission limitation by 8760 hours per year, then divide by 2000 pounds per ton.
- g. Emission Limitations:
- dryer oven - 0.76 pound of NO<sub>x</sub> per hour  
RTO thermal incinerator - 0.86 pound of NO<sub>x</sub> per hour
- Applicable Compliance Method:
- Multiply the NO<sub>x</sub> emission factor of 100 pounds of NO<sub>x</sub> emissions per million cubic feet of natural gas by the maximum hourly natural gas usage. The NO<sub>x</sub> emission factor is from AP-42, 5th edition, Table 1.4-1, dated 2/98.

h. Emission Limitations:

dryer oven - 3.3 tons of NO<sub>x</sub> per year  
RTO thermal incinerator - 3.8 tons of NO<sub>x</sub> per year

Applicable Compliance Method:

Multiply the allowable hourly emission limitation by 8760 hours per year, then divide by 2000 pounds per ton.

i. Emission Limitations:

dryer oven - 0.08 pound of OC per hour  
RTO thermal incinerator - 0.10 pound of OC per hour

Applicable Compliance Method:

Multiply the OC emission factor of 11 pounds of OC emissions per million cubic feet of natural gas by the maximum yearly natural gas usage, and divide by 2000 lbs/ton. The OC emission factor is from AP-42, 5th edition, Table 1.4-2, dated 3/98.

j. Emission Limitations:

dryer oven - 0.4 ton of OC per year  
RTO thermal incinerator - 0.4 ton of OC per year

Applicable Compliance Method:

Multiply the allowable hourly emission limitation by 8760 hours per year, then divide by 2000 pounds per ton.

k. Emission Limitation:

20% opacity as a 6-minute average

Applicable Compliance Method:

OAC rule 3745-17-03(B)(1)

l. Emission Limitation:

The control efficiency of the RTO thermal incinerator shall be at least 95%, by weight for OC and organic HAP

Applicable Compliance Method:

Compliance with the control efficiency requirement shall be determined in accordance with the test methods and procedures specified in OAC rule 3745-21-10 as required in section E.2 of these terms and conditions.

m. Emission Limitation:

The emissions of OC from emissions units K001, K002, K003, K004, K005, K006, and K009 shall not exceed 48.3 tons per year, based upon a rolling, 12-month summation of the monthly emissions.

Applicable Compliance Method:

Compliance shall be demonstrated based upon the monthly record keeping as required by section C.4 of these terms and conditions. Formulation data or USEPA Method 24 (for coatings) or 24A (for flexographic and rotogravure printing inks and related coatings) shall be used to determine the organic compound contents of the coatings and concentrated fountain solutions.

n. Emission Limitations:

The emissions of any individual hazardous air pollutant (HAP) from emissions unit K001 through K009 shall not exceed 8.0 tons per year, based upon a rolling, 12-month summation of the monthly emissions.

The emissions of combined hazardous air pollutants (HAPs) from emissions units K001 through K009 shall not exceed 20.0 tons per year, based upon a rolling, 12-month summation of the monthly emissions.

Applicable Compliance Method:

Compliance shall be demonstrated based upon the monthly record keeping as required by section C.5 of these terms and conditions. Formulation data shall be used to determine the HAP contents of the non-heatset inks, aqueous coatings, coatings, concentrated fountain

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solutions, concentrated fountain etch solutions, fountain solution additives, and cleanup materials.

**F. Miscellaneous Requirements**

1. The terms and conditions in this Permit to Install 16-02284 shall supersede all the air pollution control requirements for K001 in Permit to Install 16-1815, issued on April 21, 1999.
2. The following terms and conditions of this permit are federally enforceable pursuant to OAC rule 3745-35-07: A.1, A.2.a, B.1, B.2, B.3, B.4, B.5, B.6, B.7, B.8, C.1, C.2, C.3, C.4, C.5, C.6, D.1, D.2, D.3, D.4, D.5, D.6, D.7, D.8, E.1, E.2, E.3, E.4, and E.5.

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

**A. Applicable Emissions Limitations and/or Control Requirements**

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

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/Requirements</u>
K002 - 2-Unit Timson Heatset Web Offset Printing Press No 202 Model No T32 - Timson Press No 202 (the terms and conditions in this permit supercede the terms and conditions in PTI 16-1815 issued April 21, 1999)Modified.	OAC rule 3745-31-05(A)(3)
	OAC rule 3745-17-07
	OAC rule 3745-17-11

OAC rule 3745-21-07(G)(2)

OAC rule 3745-35-07(B)

Applicable Emissions  
Limitations/Control Measures

0.45 pound of organic compounds (OC) per hour for coatings and fountain solutions

0.4 pound of particulate emissions (PE) per hour (including combustion emissions)

1.8 tons of PE per year (including combustion emissions)

Natural gas combustion emissions from the RTO thermal incinerator shall not exceed the following:

0.72 pound of CO per hour and 3.2 tons of CO per year;

0.86 pound of NO<sub>x</sub> per hour and 3.8 tons of NO<sub>x</sub> per year; and

0.10 pound of OC per hour and 0.4 ton of OC per year.

Natural gas combustion emissions from the dryer oven shall not exceed the following:

0.64 pound of CO per hour and 2.8 tons of CO per year;

0.76 pound of NO<sub>x</sub> per hour and 3.3 tons of NO<sub>x</sub> per year; and

0.08 pound of OC per hour and 0.4 ton of OC per year.

The requirements of this rule also include compliance with the requirements of OAC rule 3745-17-07 and OAC rule 3745-35-07.

Visible particulate emissions from any stack shall not exceed 20% opacity as a 6-minute average, except as provided by the rule.

The particulate emission limitation based on OAC rule 3745-17-11 is less stringent than the particulate emission limitation established in accordance with the best available technology requirements specified in OAC rule 3745-31-05.

Exempt. See B.1 below.

The control (destruction) efficiency of the RTO thermal incinerator shall be at least 95%, by weight for OC and organic HAP.

The emissions of OC from emissions units K001, K002, K003, K004, K005, K006, and K009 shall not exceed 48.3 tons per year, based upon a rolling, 12-month summation of the monthly emissions.

See B.5 below.

The emissions of any individual hazardous air pollutant (HAP) from emissions units K001 through K009 shall not exceed 8.0 tons per year, based upon a rolling, 12-month

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summation of the monthly emissions.

The emissions of combined hazardous air pollutants (HAPs) from emissions units K001 through K009 shall not exceed 20.0 tons per year, based upon a rolling, 12-month summation of the monthly emissions.

See A.2.a below.

## 2. Additional Terms and Conditions

- 2.a** To ensure enforceability during the first 12 calendar months of operation following the issuance of this permit, the permittee shall not exceed the emission levels specified in the following table:

<u>Month(s)</u>	<u>Maximum Allowable Cumulative Emissions of Any Individual HAP (Tons)</u>	<u>Maximum Allowable Cumulative Emissions of Combined HAPs (Tons)</u>
1	0.7	1.7
1-2	1.3	3.3
1-3	2.0	5.0
1-4	2.7	6.7
1-5	3.3	8.3
1-6	4.0	10.0
1-7	4.7	11.7
1-8	5.3	13.3
1-9	6.0	15.0
1-10	6.7	16.7
1-11	7.3	18.3
1-12	8.0	20.0

After the first 12 calendar months of operation following the issuance of this permit, compliance with the annual emission limitations for any individual HAP and combined HAPs shall be based upon a rolling, 12-month summation of the monthly emissions.

- 2.b** The hourly OC emission limitation regulated per OAC rule 3745-31-05(A)(3) is based on

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the emissions unit's potential to emit. Therefore, no record keeping or reporting is required to demonstrate compliance with this limit.

However, if any proposed change(s), such as with production capacity, the types and/or quantities of materials used or processed, or anything else that increases the potential emissions of any air pollutant, then the permittee shall apply for and obtain either a modification to the permit to install or a new final permit to install prior to the change(s).

- 2.c The hourly and annual CO, NO<sub>x</sub>, and OC emission limitations from natural gas combustion and the hourly and annual PE emissions limitations regulated per OAC rule 3745-31-05(A)(3) are based on the emissions unit's potential to emit. Therefore, no record keeping or reporting is required to demonstrate compliance with these limits.

**B. Operational Restrictions**

1. The permittee shall not employ any photochemically reactive materials, as defined in OAC rule 3745-21-01(C)(5), in this emissions unit. This determination shall be made based on the actual formulation of the materials after any final in-plant reducing or thinning and prior to application of the materials.
2. The OC and organic HAP emissions from this emissions unit shall be vented to the RTO thermal incinerator when the emissions unit is in operation.
3. The average combustion temperature within the RTO thermal incinerator, for any 3-hour block of time, shall not be more than 50 degrees Fahrenheit below the average temperature during the most recent emission test that demonstrated the emissions unit(s) was (were) in compliance.
4. The maximum annual coating usage, cleanup material usage, and concentrated fountain solution usage for emissions units K001, K002, K003, K004, K005, K006, and K009 shall not exceed 2,200,000 pounds per year, 91,080 pounds per year, and 228,253 pounds per year, respectively, based upon a rolling, 12-month summation of the usage figures. The usage limitations result in a 48.3 tons of organic compounds (OC) per year emission limitation for K001 through K006 and K009. The OC content of the coatings and the concentrated fountain solutions employed shall not exceed 45.0% by weight and 15.0% by weight, respectively.

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

<u>Month(s)</u>	<u>Maximum Allowable Cumulative Coating Usage (pounds)</u>	<u>Maximum Allowable Cumulative Cleanup Material Usage (pounds)</u>	<u>Maximum Allowable Cumulative Concentrated Fountain Solution Usage (pounds)</u>
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1	183,333	7,590	19,021
1-2	366,667	15,180	38,042
1-3	550,000	22,770	57,063
1-4	733,333	30,360	76,084
1-5	916,667	37,950	95,105
1-6	1,100,000	45,540	114,127
1-7	1,283,333	53,130	133,148
1-8	1,466,667	60,720	152,169
1-9	1,650,000	68,310	171,190
1-10	1,866,333	75,900	190,211
1-11	2,016,677	83,490	209,232
1-12	2,200,000	91,080	228,253

After the first 12 calendar months of operation following the issuance of this permit, compliance with the annual usage limitations shall be based upon a rolling, 12-month summation of the usage figures.

5. The permittee shall only employ cleanup materials that have a vapor pressure that is less than 10 mm Hg at 20 degrees Celsius (68 degrees Fahrenheit). The permittee shall store the cleanup cloths in closed containers.
6. The dryer oven for this emissions unit shall only employ natural gas.
7. The permittee shall not employ fountain solutions that contain alcohol in this emissions unit.
8. The permittee shall only employ automatic blanket wash cleanup that contains no organic solvent in this emissions unit. Only the manual cleanup material can contain organic solvents.

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

1. The permittee shall maintain the following information for this emissions unit:
  - a. the MSDS sheets for each liquid organic material employed;
  - b. documentation as to whether or not each material is a photochemically reactive material; and
  - c. for materials that are reduced or thinned prior to application, documentation as to whether or not the resulting material is a photochemically reactive material.

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2. The permittee shall maintain the following information for this emissions unit:
  - a. the MSDS sheets for each fountain solution employed; and
  - b. documentation as to whether or not each fountain solution contains any alcohol.
3. The permittee shall maintain documentation of the vapor pressure, in millimeters of mercury at 20 degrees Celsius (68 degrees Fahrenheit) for each cleanup material employed.
4. The permittee shall collect and record the following information monthly for emissions units K001, K002, K003, K004, K005, K006, and K009:
  - a. the company identification for each coating, concentrated fountain solution, and cleanup material employed;
  - b. the amount of each coating, concentrated fountain solution, and cleanup employed, in pounds;
  - c. the total amount of all coatings, all concentrated fountain solutions, and all cleanup materials employed, in pounds;
  - d. the OC content of each coating, concentrated fountain solution, and cleanup material employed, in weight percent;
  - e. the total uncontrolled OC emission rate from all coatings employed, in pounds per month (i.e., [(c)x(the worst-case OC content in weight percent of all the coatings employed in the month)/100] or the sum of [(b)x(d)/100] for each coating employed);
  - f. the total controlled OC emission rate from all coatings employed, in tons per month (i.e., [(0.80)x(e)x(1-destruction efficiency\*)]\*\*, and then divided by 2000);
  - g. the total uncontrolled OC emission rate from all concentrated fountain solutions employed, in pounds per month (i.e., the sum of [(b)x(d)/100] for each concentrated fountain solution employed);
  - h. the total controlled OC emission rate from all concentrated fountain solutions employed, in tons per month (i.e., [(g)x(1- (0.7) x destruction efficiency\*)]\*\*, and then divided by 2000);
  - i. the total controlled OC emission rate from all cleanup materials employed, in tons per month (i.e., the sum of (0.5)x(b)x(d)\*\* for each cleanup material employed, and then divided by 2000);

- j. the total OC emission rate from the emissions units K001, K002, K003, K004, K005, K006, and K009, in tons per month (i.e., [(f)+(h)+(i)]).
- k. beginning after the first 12 calendar months of operation following the issuance of this permit, the rolling, 12-month summations of the coating usage figures, concentrated fountain solution usage figures, cleanup material usage figures, and OC emissions for each month, in pounds or tons; and
- l. during the first 12 calendar months of operation following the issuance of this permit, the permittee shall record the cumulative coating usage, concentrated fountain solution usage, and cleanup material usage for each month, in pounds.

\* The permittee shall use the destruction efficiency from the most recent performance test that demonstrated that the emissions unit(s) was (were) in compliance.

\*\*Per Ohio EPA Division of Air Pollution Control Engineering Section Engineer Guide #56 revised June 15, 1999 and based on a successful demonstration of negative pressure in the dryer oven in accordance with section E.1 of the testing requirements, the following assumptions shall be used in calculating the OC emissions: 20 percent, by weight, of the solvent in the coatings is retained in the web or substrate and the remaining 80 percent, by weight, is vented to the incinerator; 30 percent, by weight, of the fountain solution emissions are fugitive and the remaining 70 percent, by weight, is vented to the incinerator for fountain solutions containing only alcohol substitutes; and 50 percent, by weight, of the manual cleanup material is retained in the cleanup cloths and the remaining 50 percent, by weight, is fugitive emissions if the solvent has a vapor pressure of 10 mm Hg or lower at 20 degrees Celsius (68 degrees Fahrenheit).

- 5. The permittee shall collect and record the following information monthly for emissions units K001 through K009:
  - a. For emissions units K001, K002, K003, K004, K005, K006, and K009:
    - i. the company identification for each coating, concentrated fountain solution, and cleanup material employed;
    - ii. the amount of each coating, concentrated fountain solution, and cleanup employed, in pounds;
    - iii. the individual HAP content of each HAP of each coating, concentrated fountain

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solution, and cleanup material employed, in weight percent;

- iv. the combined HAPs content of each coating, concentrated fountain solution, and cleanup material employed (the sum of all the individual HAP contents in (iii)), in weight percent;
- v. the uncontrolled individual HAP emission rate for each HAP from all coatings employed, in pounds per month (i.e., the sum of  $[(ii) \times (iii) / 100]$  for each HAP for each coating employed);
- vi. the controlled individual HAP emission rate for each HAP from all coatings employed, in tons per month (i.e.,  $[(0.80) \times (v) \times (1 - \text{destruction efficiency}^*)]^{**}$ , and then divided by 2000 for each HAP);
- vii. the uncontrolled combined HAPs emission rate from all coatings employed, in pounds per month (i.e., the sum of  $[(ii) \times (iv) / 100]$  for each coating employed);
- viii. the controlled combined HAPs emission rate for each HAP from all coatings employed, in tons per month (i.e.,  $[(0.80) \times (vii) \times (1 - \text{destruction efficiency}^*)]^{**}$ , and then divided by 2000);
- ix. the uncontrolled individual HAP emission rate for each HAP from all concentrated fountain solutions employed, in pounds per month (i.e., the sum of  $[(ii) \times (iii) / 100]$  for each HAP for each fountain solution employed);
- x. the controlled individual HAP emission rate for each HAP from all concentrated fountain solutions employed, in tons per month (i.e.,  $[(ix) \times [1 - (0.7) \times \text{destruction efficiency}^*]]^{**}$ , and then divided by 2000 for each HAP);
- xi. the uncontrolled combined HAPs emission rate from all concentrated fountain solutions employed, in pounds per month (i.e., the sum of  $[(ii) \times (iv) / 100]$  for each fountain solution employed);
- xii. the controlled combined HAPs emission rate from all concentrated fountain solutions employed, in tons per month (i.e.,  $[(xi) \times [(1 - (0.7) \times \text{destruction efficiency}^*)]^{**}$ , and then divided by 2000);
- xiii. the controlled individual HAP emission rate for each HAP from all cleanup materials employed, in tons per month (i.e., the sum of  $(0.5) \times (ii) \times (iii)^{**}$  for each HAP for each cleanup material employed, and then divided by 2000);
- xiv. the controlled combined HAPs emission rate from all cleanup materials employed,

- in tons per month (i.e., the sum of  $(0.5) \times (ii) \times (iv)^{**}$  for each cleanup material employed, and then divided by 2000);
- xv. the individual HAP emission rate for each HAP from all cleanup materials, all concentrated fountain solutions, and all coatings employed, in tons per month (i.e.,  $[(vi) + (x) + (xiii)]$  for each HAP); and
  - xvi. the combined HAPs emission rate from all cleanup materials, all concentrated fountain solutions, and all coatings employed, in tons per month (i.e.,  $[(viii) + (xii) + (xiv)]$ ).
- b. For emissions units K007 and K008:
- i. the company identification for each non-heatset ink, aqueous coating, concentrated fountain etch solution, fountain solution additive, manual cleanup material, and automatic cleanup material employed;
  - ii. the amount of each non-heatset ink, aqueous coating, concentrated fountain etch solution, fountain solution additive, manual cleanup material, and automatic cleanup material employed, in pounds;
  - iii. the individual HAP content of each HAP of each non-heatset ink, aqueous coating, concentrated fountain etch solution, fountain solution additive, manual cleanup material, and automatic cleanup material employed, in weight percent;
  - iv. the combined HAPs content of each non-heatset ink, aqueous coating, concentrated fountain etch solution, fountain solution additive, manual cleanup material, and automatic cleanup material employed (the sum of all the individual HAP contents in (iii)), in weight percent;
  - v. the individual HAP emission rate for each HAP from all non-heatset inks employed, in tons (i.e., the sum of  $[(ii) \times (iii)/100] \times 0.05^{***}$  for each HAP for each non-heatset ink employed, and then divided by 2000);
  - vi. the combined HAPs emission rate from all non-heatset inks employed, in tons (i.e., the sum of  $[(ii) \times (iv)/100] \times 0.05^{***}$  for each non-heatset ink employed, and then divided by 2000);
  - vii. the individual HAP emission rate for each HAP from all aqueous coatings employed, in tons (i.e., the sum of  $[(ii) \times (iii)/100]$  for each HAP for each aqueous

coating employed, and then divided by 2000);

- viii. the combined HAPs emission rate from all aqueous coatings employed, in tons (i.e., the sum of [(ii) x (iv)/100] for each aqueous coating employed, and then divided by 2000);
- ix. the individual HAP emission rate for each HAP from all concentrated fountain etch solutions employed, in tons (i.e., the sum of [(ii) x (iii)/100] for each HAP for each concentrated fountain etch solution employed, and then divided by 2000);
- x. the combined HAPs emission rate from all concentrated fountain etch solutions employed, in tons (i.e., the sum of [(ii) x (iv)/100] for each concentrated fountain etch solution employed, and then divided by 2000);
- xi. the individual HAP emission rate for each HAP from all fountain solution additives employed, in tons (i.e., the sum of [(ii) x (iii)/100] for each HAP for each fountain solution additive employed, and then divided by 2000);
- xii. the combined HAPs emission rate from all fountain solution additives employed, in tons (i.e., the sum of [(ii) x (iv)/100] for each fountain solution additive employed, and then divided by 2000);
- xiii. the individual HAP emission rate for each HAP from all manual cleanup materials employed, in tons (i.e., the sum of [(ii) x (iii)/100] x 0.5\*\*\*\* for each HAP for each manual cleanup material employed, and then divided by 2000);
- xiv. the combined HAPs emission rate from all manual cleanup materials employed, in tons (i.e., the sum of [(ii) x (iv)/100] x 0.5\*\*\*\* for each manual cleanup material employed, and then divided by 2000);
- xv. the individual HAP emission rate for each HAP from all automatic cleanup materials employed, in tons (i.e., the sum of [(ii) x (iii)/100] for each HAP for each automatic cleanup material employed, and then divided by 2000);
- xvi. the combined HAPs emission rate from all automatic cleanup materials employed, in tons (i.e., the sum of [(ii) x (iv)/100] for each automatic cleanup material employed, and then divided by 2000);
- xvii. the individual HAP emission rate for each HAP from all non-heatset ink, all aqueous coating, all concentrated fountain etch solution, all fountain solution additive, all manual cleanup material, and all automatic cleanup material employed, in tons per month ( i.e., [(v) + (vii) + (ix) + (xi) + (xiii) + (xv)] for each HAP); and

- xviii. the combined HAPs emission rate from all non-heatset ink, all aqueous coating, all concentrated fountain etch solution, all fountain solution additive, all manual cleanup material, and all automatic cleanup material employed, in tons per month (i.e., [(vi) + (viii) + (x) + (xii) + (xiv) + (xvi)]).
- c. For emissions unit K001 through K009:
- i. the total individual HAP emission rate for each HAP, in tons per month (i.e., (4.a.xv) + (4.b.xvii) for each HAP);
  - ii. the total combined HAPs emission rate, in tons per month (i.e., (4.a.xvi) + (4.b.xviii));
  - iii. beginning after the first 12 calendar months of operation following the issuance of this permit, the rolling, 12-month summations of individual HAP emissions for each HAP and of combined HAPs emissions for each month, in tons; and
  - iv. during the first 12 calendar months of operation following the issuance of this permit, the permittee shall record the cumulative emissions of individual HAP for each HAP and the cumulative emissions of combined HAPs for each month, in tons;
  - v. during the first 12 calendar months of operation following the issuance of this permit if the cumulative emissions of combined HAPs for each month are less than or equal to the allowable cumulative emissions of any individual HAP for each month, then cumulative emissions for each individual HAP do not need to be calculated; and
  - vi. beginning after the first 12 calendar months of operation following the issuance of this permit if the rolling, 12-month summation of combined HAPs is 8.0 tons per year or less for each month, then the rolling, 12-month summations of each individual HAP do not need to be calculated unless any subsequent rolling, 12-month summation exceeds 8.0 tons per year.

\* The permittee shall use the destruction efficiency from the most recent performance test that demonstrated that the emissions unit(s) was (were) in compliance.

\*\*Per Ohio EPA Division of Air Pollution Control Engineering Section Engineer Guide #56 revised June 15, 1999 and based on a successful demonstration of negative pressure in

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the dryer ovens, the following assumptions shall be used in calculating the HAP emissions: 20 percent, by weight, of the solvent in the coatings is retained in the web or substrate and the remaining 80 percent, by weight, is vented to the incinerator; 30 percent, by weight, of the fountain solution emissions are fugitive and the remaining 70 percent, by weight, is vented to the incinerator for fountain solutions containing only alcohol substitutes; and 50 percent, by weight, of the manual cleanup material is retained in the cleanup cloths and the remaining 50 percent, by weight, is fugitive emissions if the solvent has a vapor pressure of 10 mm Hg or lower at 20 degrees Celsius (68 degrees Fahrenheit).

\*\*\*Ohio EPA, Division of Air Pollution Control, Engineering Section, Engineering Guide #68 (dated July 7, 1997) states that only 5% of the ink solvent is emitted from non-heatset inks.

\*\*\*\*Ohio EPA, Division of Air Pollution Control, Engineering Section, Engineering Guide #68 (dated July 7, 1997) states 50% of the solvent is retained in the shop towel and 50% is emitted for cleanup solvents which have a composite vapor pressure less than 10 millimeters of mercury at 20 degrees Celsius.

6. The permittee shall operate and maintain a continuous temperature monitor and recorder which measures and records the combustion temperature within the RTO 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.

The permittee shall collect and record the following information for each day:

- a. all 3-hour blocks of time during which the average combustion temperature within the RTO thermal incinerator, when the emissions unit was in operation, was more than 50 degrees Fahrenheit below the average temperature during the most recent emission test that demonstrated the emissions unit was in compliance; and
  - b. a log of the downtime for the capture (collection) system, control device, and monitoring equipment, when the associated emissions unit was in operation.
7. The permit to install for this emissions unit (K002) was evaluated based on the actual materials (typically coatings and cleanup materials) and the design parameters of the emissions unit's exhaust system, as specified by the permittee in the permit to install application. The Ohio EPA's "Review of New Sources of Air Toxic Emissions" policy ("Air Toxic Policy") was applied for each pollutant emitted by this emissions unit using data from the permit to install application and the SCREEN 3.0 model (or other Ohio EPA approved model). The predicted 1-hour maximum ground-level concentration from the use of the SCREEN 3.0 model was compared to the

Maximum Acceptable Ground-Level Concentration (MAGLC). The following summarizes the results of the modeling for the "worst case" pollutant(s):

Pollutant: ethylene glycol n-butyl ether

TLV (mg/m<sup>3</sup>): 97

Maximum Hourly Emission Rate (lbs/hr): 1.66\*

Predicted 1-Hour Maximum Ground-Level  
Concentration (ug/m<sup>3</sup>): 320.0

MAGLC (ug/m<sup>3</sup>): 2309.5

Pollutant: ethylene glycol

TLV (mg/m<sup>3</sup>): 73

Maximum Hourly Emission Rate (lbs/hr): 1.06\*

Predicted 1-Hour Maximum Ground-Level  
Concentration (ug/m<sup>3</sup>): 192.6

MAGLC (ug/m<sup>3</sup>): 1738.1

Pollutant: petroleum naphtha

TLV (mg/m<sup>3</sup>): 525

Maximum Hourly Emission Rate (lbs/hr): 8.27\*\*

Predicted 1-Hour Maximum Ground-Level  
Concentration (ug/m<sup>3</sup>): 1661

MAGLC (ug/m<sup>3</sup>): 12500

\*Maximum emission rate from emissions units K001 through K009.

\*\*Maximum emission rate from emissions units K001 through K006 and K009.

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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 (typically for coatings or cleanup materials), or the use of new materials, that would result in the emission of a compound with a lower Threshold Limit Value (TLV), as indicated in the most recent version of the handbook entitled "American Conference of Governmental Industrial Hygienists (ACGIH)," than the lowest TLV value previously modeled;
- b. changes in the composition of the materials, or use of new materials, that would result in an increase in emissions of any pollutant with a listed TLV that was proposed in the application and modeled; and
- c. physical changes to the emissions unit or its exhaust parameters (e.g., increased/ decreased exhaust flow, changes in stack height, changes in stack diameter, etc.).

If the permittee determines that the "Air Toxic Policy" will be satisfied for the above changes, the Ohio EPA will not consider the change(s) to be a "modification" under OAC rule 3745-31-01(VV)(1)(a)(ii), and a modification of the existing permit to install will not be required. If the change(s) is (are) defined as a modification under other provisions of the modification definition (other than (VV)(1)(a)(ii)), then the permittee shall obtain a final permit to install prior to the change.

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

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

**D. Reporting Requirements**

1. The permittee shall notify the Director (the appropriate Ohio EPA District Office or local air agency) in writing if a "photochemically reactive material" (as defined in OAC 3745-21-01 (C)(5)) is employed in the emissions unit . The notification shall include a copy of such record and shall be sent to the Director (the appropriate Ohio EPA District Office or local air agency) within 45 days after such an occurrence.
2. The permittee shall submit deviation (excursion) reports that identify any time periods when the emissions unit was in operation and the emissions from the emissions unit were not vented to the RTO thermal incinerator. Each report shall be submitted within 30 days after the deviation occurs.
3. The permittee shall submit deviation (excursion) reports which identify all 3-hour blocks of time during which the average combustion temperature within the RTO thermal incinerator does not comply with the temperature limitation specified above.
4. The permittee shall submit deviation (excursion) reports which identify all exceedances of the rolling, 12-month usage limitations for coatings, cleanup materials, and concentrated fountain solutions and the rolling 12-month emission limitations for OC, any individual HAP, and combined HAPs and, for the first 12 calendar months of operation following the issuance of this permit, all exceedances of the maximum allowable cumulative coating usage levels, cleanup material usage levels, concentrated fountain solution levels, emissions of any individual HAP levels, and emissions of combined HAPs levels.
5. The permittee shall notify the Director (the appropriate Ohio EPA District Office or local air agency) in writing if a coating or a concentrated fountain solution which exceeds the OC contents specified in section B.5 of these terms and conditions is employed in this emissions unit. The notification shall include a copy of such record and shall be sent to the Director (the appropriate Ohio EPA District Office or local air agency) within 30 days after such an occurrence.
6. The permittee shall notify the Director (the appropriate Ohio EPA District Office or local air agency) in writing if a fountain solution containing any alcohol is employed in this emissions unit. The notification shall include a copy of such record and shall be sent to the Director (the appropriate Ohio EPA District Office or local air agency) within 45 days after such an occurrence.
7. The permittee shall notify the Director (the appropriate Ohio EPA District Office or local air agency) in writing if a cleanup material that has a vapor pressure of 10 mm Hg or greater is employed in this emissions unit . The notification shall include a copy of such record and shall be sent to the Director (the appropriate Ohio EPA District Office or local air agency) within 45 days

after such an occurrence.

8. The permittee shall also submit annual reports which specify the total OC emissions from emissions units K001, K002, K003, K004, K005, K006, and K009 combined for the previous calendar year. These reports shall be submitted by January 31 of each year.
9. The deviation reports shall be submitted in accordance with the requirements specified in the General Terms and Conditions of this permit.

#### **E. Testing Requirements**

1. A demonstration of negative pressure differential for the dryer oven shall be conducted within 90 days of start-up of emissions unit K009 to confirm that the assumptions stated in sections C.4 and C.5 of these terms and conditions apply to this emissions unit. Such a demonstration shall be shown by either of the following methods:
  - a. By using a differential pressure gauge so that an inlet of the gauge is within the dryer and the other inlet is open to the ambient air in the pressroom. The differential pressure gauge may be a liquid column gauge or may be a mechanical type gauge. The differential pressure gauge shall be properly leveled and zeroed according to the manufacturer's instructions. If a mechanical type gauge is used, it should be calibrated according to the manufacturer's instructions against a liquid column gauge. (If a liquid column gauge is used, no calibration is necessary). The gauge should measure a pressure differential of at least 0.007 inches of water column whenever the press is operating to ensure that air is entering the dryer through all of the dryer's openings (excluding the exhaust stack). If a pressure gauge is to be permanently installed on the dryer, the location of the pressure tap within the dryer should not be modified without first consulting with the dryer manufacturer/installer. This is important since the manufacturer/installer may have used the pressure differential to set the exhaust rate for the dryer to ensure that the VOC concentration within the dryer remains below 25 percent of the lower explosive limit; or
  - b. By using smoke tubes, plastic flow indicating strips or other flow indicating devices approved by the field office in consultation with the Engineering Section to demonstrate that air flows into the dryer at all openings in the dryer (excluding the exhaust stack). All points measured with such devices should indicate airflow into the dryer.

If the testing fails to demonstrate negative pressure in the dryer oven, the assumptions detailed in sections C.4 and C.5 of these terms and conditions shall not apply, and an overall control efficiency of this emissions unit shall be based on capture efficiency testing as described in section E.2.e below.

2. The permittee shall conduct, or have conducted, emission testing for this emissions unit in

accordance with the following requirements:

- a. The emission testing shall be conducted within 90 days of start-up of emissions unit K009.
  - b. The emission testing shall be conducted to demonstrate compliance with the capture efficiency for OC (verify negative pressure in the dryer oven as described in Section E.1 above) and the control efficiency for OC and organic HAP.
  - c. The test method(s) which must be employed to demonstrate compliance with the control efficiency limitation for OC and organic HAP are specified below. Alternative U.S. EPA approved test methods may be used with prior approval from the Ohio EPA.
  - d. 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. 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.
  - e. If required, 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 USEPA's "Guidelines 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.)
  - f. The test(s) shall be conducted while the emissions unit is operating at or near its maximum capacity, unless otherwise specified or approved by the appropriate Ohio EPA District Office or local air agency.
3. Not later than 30 days prior to the proposed test date(s), the permittee shall submit an "Intent to Test" notification to the appropriate Ohio EPA District Office or local air agency. 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 District Office's or local air agency's refusal to accept the results of the emission test(s).
  4. Personnel from the appropriate Ohio EPA District Office or local air agency shall be permitted to witness the test(s), examine the testing equipment, and acquire data and information necessary to

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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.

5. 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 appropriate Ohio EPA District Office or local air agency within 30 days following completion of the test(s). The permittee may request additional time for the submittal of the written report, where warranted, with prior approval from the appropriate Ohio EPA District Office or local air agency.
6. Compliance with the emission limitations in sections A.1 and B.5 of these terms and conditions shall be determined in accordance with the following methods:

a. Emission Limitations:

OC content of 45.0%, by weight, for coatings

OC content of 15.0%, by weight, for concentrated fountain solutions

Applicable Compliance Method:

Formulation data or USEPA Method 24 (for coatings) or 24A (for flexographic and rotogravure printing inks and related coatings) shall be used to determine the organic compound contents of the coatings and concentrated fountain solutions.

b. Emission Limitation:

0.45 pound of OC per hour for coatings and fountain solutions

Applicable Compliance Method:

Compliance shall be determined by the following equation:

$$[(\text{maximum coating usage, in pounds per hour}) \times (0.45^*) \times (0.8^{**}) \times (1-0.95^{***}) + (\text{maximum concentrated fountain solution usage, in pounds per hour}) \times (0.15^*) \times (1-(0.7^{**}) \times (0.95^{***}))]$$

\*Maximum allowable OC content for coatings and concentrated fountain solutions.

\*\*Per Ohio EPA Division of Air Pollution Control Engineering Section Engineer Guide #56 revised June 15, 1999, emission factors provided in the answer to question number 21.

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\*\*\*Minimum required control efficiency for the RTO thermal incinerator.

c. Emission Limitation:

0.4 pound of PE per hour

Applicable Compliance Method:

Stack testing may be required in the future in accordance with the test method(s) and procedures in OAC rule 3745-17-03(B)(10).

- d. Emission Limitation:
- 1.8 tons of PE per year
- Applicable Compliance Method:
- Multiply the allowable hourly emission limitation by 8760 hours per year, then divide by 2000 pounds per ton.
- e. Emission Limitations:
- dryer oven - 0.64 pound of CO per hour  
RTO thermal incinerator - 0.72 pound of CO per hour
- Applicable Compliance Method:
- Multiply the CO emission factor of 84 pounds of CO emissions per million cubic feet of natural gas by the maximum hourly natural gas usage. The CO emission factor is from AP-42, 5th edition, Table 1.4-1, dated 2/98.
- f. Emission Limitations:
- dryer oven - 2.8 tons of CO per year  
RTO thermal incinerator - 3.2 tons of CO per year
- Applicable Compliance Method:
- Multiply the allowable hourly emission limitation by 8760 hours per year, then divide by 2000 pounds per ton.
- g. Emission Limitations:
- dryer oven - 0.76 pound of NOx per hour  
RTO thermal incinerator - 0.86 pound of NOx per hour
- Applicable Compliance Method:
- Multiply the NOx emission factor of 100 pounds of NOx emissions per million cubic feet of natural gas by the maximum hourly natural gas usage. The NOx emission factor is from AP-42, 5th edition, Table 1.4-1, dated 2/98.

h. Emission Limitations:

dryer oven - 3.3 tons of NO<sub>x</sub> per year  
RTO thermal incinerator - 3.8 tons of NO<sub>x</sub> per year

Applicable Compliance Method:

Multiply the allowable hourly emission limitation by 8760 hours per year, then divide by 2000 pounds per ton.

i. Emission Limitations:

dryer oven - 0.08 pound of OC per hour  
RTO thermal incinerator - 0.10 pound of OC per hour

Applicable Compliance Method:

Multiply the OC emission factor of 11 pounds of OC emissions per million cubic feet of natural gas by the maximum yearly natural gas usage, and divide by 2000 lbs/ton. The OC emission factor is from AP-42, 5th edition, Table 1.4-2, dated 3/98.

j. Emission Limitations:

dryer oven - 0.4 ton of OC per year  
RTO thermal incinerator - 0.4 ton of OC per year

Applicable Compliance Method:

Multiply the allowable hourly emission limitation by 8760 hours per year, then divide by 2000 pounds per ton.

k. Emission Limitation:

20% opacity as a 6-minute average

Applicable Compliance Method:

OAC rule 3745-17-03(B)(1)

l. Emission Limitation:

The control efficiency of the RTO thermal incinerator shall be at least 95%, by weight for OC and organic HAP

Applicable Compliance Method:

Compliance with the control efficiency requirement shall be determined in accordance with the test methods and procedures specified in OAC rule 3745-21-10 as required in section E.2 of these terms and conditions.

m. Emission Limitation:

The emissions of OC from emissions units K001, K002, K003, K004, K005, K006, and K009 shall not exceed 48.3 tons per year, based upon a rolling, 12-month summation of the monthly emissions.

Applicable Compliance Method:

Compliance shall be demonstrated based upon the monthly record keeping as required by section C.4 of these terms and conditions. Formulation data or USEPA Method 24 (for coatings) or 24A (for flexographic and rotogravure printing inks and related coatings) shall be used to determine the organic compound contents of the coatings and concentrated fountain solutions.

n. Emission Limitations:

The emissions of any individual hazardous air pollutant (HAP) from emissions unit K001 through K009 shall not exceed 8.0 tons per year, based upon a rolling, 12-month summation of the monthly emissions.

The emissions of combined hazardous air pollutants (HAPs) from emissions units K001 through K009 shall not exceed 20.0 tons per year, based upon a rolling, 12-month summation of the monthly emissions.

Applicable Compliance Method:

Compliance shall be demonstrated based upon the monthly record keeping as required by section C.5 of these terms and conditions. Formulation data shall be used to determine the HAP contents of the non-heatset inks, aqueous coatings, coatings, concentrated fountain

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solutions, concentrated fountain etch solutions, fountain solution additives, and cleanup materials.

**F. Miscellaneous Requirements**

1. The terms and conditions in this Permit to Install 16-02284 shall supersede all the air pollution control requirements for K002 in Permit to Install 16-1815, issued on April 21, 1999.
2. The following terms and conditions of this permit are federally enforceable pursuant to OAC rule 3745-35-07: A.1, A.2.a, B.1, B.2, B.3, B.4, B.5, B.6, B.7, B.8, C.1, C.2, C.3, C.4, C.5, C.6, D.1, D.2, D.3, D.4, D.5, D.6, D.7, D.8, E.1, E.2, E.3, E.4, and E.5.

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

**A. Applicable Emissions Limitations and/or Control Requirements**

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

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/Requirements</u>
K003 - 5-Unit Harris M-300 Heatset Web Offset Printing Press No 206 - Harris Press No 206 (the terms and conditions in this permit supercede the terms and conditions in PTI 16-1815 issued April 21, 1999)Modified.	OAC rule 3745-31-05(A)(3)
	OAC rule 3745-17-07
	OAC rule 3745-17-11

OAC rule 3745-21-07(G)(2)

OAC rule 3745-35-07(B)

Applicable Emissions  
Limitations/Control Measures

2.08 pounds of organic compounds (OC) per hour for coatings and fountain solutions

0.4 pound of particulate emissions (PE) per hour (including combustion emissions)

1.8 tons of PE per year (including combustion emissions)

Natural gas combustion emissions from the RTO thermal incinerator shall not exceed the following:

0.72 pound of CO per hour and 3.2 tons of CO per year;

0.86 pound of NO<sub>x</sub> per hour and 3.8 tons of NO<sub>x</sub> per year; and

0.10 pound of OC per hour and 0.4 ton of OC per year.

Natural gas combustion emissions from the dryer oven shall not exceed the following:

0.55 pound of CO per hour and 2.4 tons of CO per year;

0.66 pound of NO<sub>x</sub> per hour and 2.9 tons of NO<sub>x</sub> per year; and

0.07 pound of OC per hour and 0.3 ton of OC per year.

The requirements of this rule also include compliance with the requirements of OAC rule 3745-17-07 and OAC rule 3745-35-07.

Visible particulate emissions from any stack shall not exceed 20% opacity as a 6-minute average, except as provided by the rule.

The particulate emission limitation based on OAC rule 3745-17-11 is less stringent than the particulate emission limitation established in accordance with the best available technology requirements specified in OAC rule 3745-31-05.

Exempt. See B.1 below.

The control (destruction) efficiency of the RTO thermal incinerator shall be at least 95%, by weight for OC and organic HAP.

The emissions of OC from emissions units K001, K002, K003, K004, K005, K006, and K009 shall not exceed 48.3 tons per year, based upon a rolling, 12-month summation of the monthly emissions.

See B.5 below.

The emissions of any individual hazardous air pollutant (HAP) from emissions units K001 through K009 shall not exceed 8.0 tons per year, based upon a rolling, 12-month

summation of the monthly emissions.

The emissions of combined hazardous air pollutants (HAPs) from emissions units K001 through K009 shall not exceed 20.0 tons per year, based upon a rolling, 12-month summation of the monthly emissions.

See A.2.a below.

**2. Additional Terms and Conditions**

**2.a** To ensure enforceability during the first 12 calendar months of operation following the issuance of this permit, the permittee shall not exceed the emission levels specified in the following table:

<u>Month(s)</u>	<u>Maximum Allowable Cumulative Emissions of Any Individual HAP (Tons)</u>	<u>Maximum Allowable Cumulative Emissions of Combined HAPs (Tons)</u>
1	0.7	1.7
1-2	1.3	3.3
1-3	2.0	5.0
1-4	2.7	6.7
1-5	3.3	8.3
1-6	4.0	10.0
1-7	4.7	11.7
1-8	5.3	13.3
1-9	6.0	15.0
1-10	6.7	16.7
1-11	7.3	18.3
1-12	8.0	20.0

After the first 12 calendar months of operation following the issuance of this permit, compliance with the annual emission limitations for any individual HAP and combined HAPs shall be based upon a rolling, 12-month summation of the monthly emissions.

**2.b** The hourly OC emission limitation regulated per OAC rule 3745-31-05(A)(3) is based on

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the emissions unit's potential to emit. Therefore, no record keeping or reporting is required to demonstrate compliance with this limit.

However, if any proposed change(s), such as with production capacity, the types and/or quantities of materials used or processed, or anything else that increases the potential emissions of any air pollutant, then the permittee shall apply for and obtain either a modification to the permit to install or a new final permit to install prior to the change(s).

- 2.c The hourly and annual CO, NO<sub>x</sub>, and OC emission limitations from natural gas combustion and the hourly and annual PE emissions limitations regulated per OAC rule 3745-31-05(A)(3) are based on the emissions unit's potential to emit. Therefore, no record keeping or reporting is required to demonstrate compliance with these limits.

**B. Operational Restrictions**

1. The permittee shall not employ any photochemically reactive materials, as defined in OAC rule 3745-21-01(C)(5), in this emissions unit. This determination shall be made based on the actual formulation of the materials after any final in-plant reducing or thinning and prior to application of the materials.
2. The OC and organic HAP emissions from this emissions unit shall be vented to the RTO thermal incinerator when the emissions unit is in operation.
3. The average combustion temperature within the RTO thermal incinerator, for any 3-hour block of time, shall not be more than 50 degrees Fahrenheit below the average temperature during the most recent emission test that demonstrated the emissions unit(s) was (were) in compliance.
4. The maximum annual coating usage, cleanup material usage, and concentrated fountain solution usage for emissions units K001, K002, K003, K004, K005, K006, and K009 shall not exceed 2,200,000 pounds per year, 91,080 pounds per year, and 228,253 pounds per year, respectively, based upon a rolling, 12-month summation of the usage figures. The usage limitations result in a 48.3 tons of organic compounds (OC) per year emission limitation for K001 through K006 and K009. The OC content of the coatings and the concentrated fountain solutions employed shall not exceed 45.0% by weight and 15.0% by weight, respectively.

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

<u>Month(s)</u>	<u>Maximum Allowable Cumulative Coating Usage (pounds)</u>	<u>Maximum Allowable Cumulative Cleanup Material Usage (pounds)</u>	<u>Maximum Allowable Cumulative Concentrated Fountain Solution Usage (pounds)</u>
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1	183,333	7,590	19,021
1-2	366,667	15,180	38,042
1-3	550,000	22,770	57,063
1-4	733,333	30,360	76,084
1-5	916,667	37,950	95,105
1-6	1,100,000	45,540	114,127
1-7	1,283,333	53,130	133,148
1-8	1,466,667	60,720	152,169
1-9	1,650,000	68,310	171,190
1-10	1,866,333	75,900	190,211
1-11	2,016,677	83,490	209,232
1-12	2,200,000	91,080	228,253

After the first 12 calendar months of operation following the issuance of this permit, compliance with the annual usage limitations shall be based upon a rolling, 12-month summation of the usage figures.

5. The permittee shall only employ cleanup materials that have a vapor pressure that is less than 10 mm Hg at 20 degrees Celsius (68 degrees Fahrenheit). The permittee shall store the cleanup cloths in closed containers.
6. The dryer oven for this emissions unit shall only employ natural gas.
7. The permittee shall not employ fountain solutions that contain alcohol in this emissions unit.
8. The permittee shall only employ automatic blanket wash cleanup that contains no organic solvent in this emissions unit. Only the manual cleanup material can contain organic solvents.

### C. Monitoring and/or Recordkeeping Requirements

1. The permittee shall maintain the following information for this emissions unit:
  - a. the MSDS sheets for each liquid organic material employed;
  - b. documentation as to whether or not each material is a photochemically reactive material; and
  - c. for materials that are reduced or thinned prior to application, documentation as to whether or not the resulting material is a photochemically reactive material.

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2. The permittee shall maintain the following information for this emissions unit:
  - a. the MSDS sheets for each fountain solution employed; and
  - b. documentation as to whether or not each fountain solution contains any alcohol.
3. The permittee shall maintain documentation of the vapor pressure, in millimeters of mercury at 20 degrees Celsius (68 degrees Fahrenheit) for each cleanup material employed.
4. The permittee shall collect and record the following information monthly for emissions units K001, K002, K003, K004, K005, K006, and K009:
  - a. the company identification for each coating, concentrated fountain solution, and cleanup material employed;
  - b. the amount of each coating, concentrated fountain solution, and cleanup employed, in pounds;
  - c. the total amount of all coatings, all concentrated fountain solutions, and all cleanup materials employed, in pounds;
  - d. the OC content of each coating, concentrated fountain solution, and cleanup material employed, in weight percent;
  - e. the total uncontrolled OC emission rate from all coatings employed, in pounds per month (i.e., [(c)x(the worst-case OC content in weight percent of all the coatings employed in the month)/100] or the sum of [(b)x(d)/100] for each coating employed);
  - f. the total controlled OC emission rate from all coatings employed, in tons per month (i.e., [(0.80)x(e)x(1-destruction efficiency\*)]\*\*, and then divided by 2000);
  - g. the total uncontrolled OC emission rate from all concentrated fountain solutions employed, in pounds per month (i.e., the sum of [(b)x(d)/100] for each concentrated fountain solution employed);
  - h. the total controlled OC emission rate from all concentrated fountain solutions employed, in tons per month (i.e., [(g)x(1- (0.7) x destruction efficiency\*)]\*\*, and then divided by 2000);
  - i. the total controlled OC emission rate from all cleanup materials employed, in tons per month (i.e., the sum of (0.5)x(b)x(d)\*\* for each cleanup material employed, and then divided by 2000);

- j. the total OC emission rate from the emissions units K001, K002, K003, K004, K005, K006, and K009, in tons per month (i.e., [(f)+(h)+(i)]).
- k. beginning after the first 12 calendar months of operation following the issuance of this permit, the rolling, 12-month summations of the coating usage figures, concentrated fountain solution usage figures, cleanup material usage figures, and OC emissions for each month, in pounds or tons; and
- l. during the first 12 calendar months of operation following the issuance of this permit, the permittee shall record the cumulative coating usage, concentrated fountain solution usage, and cleanup material usage for each month, in pounds.

\* The permittee shall use the destruction efficiency from the most recent performance test that demonstrated that the emissions unit(s) was (were) in compliance.

\*\*Per Ohio EPA Division of Air Pollution Control Engineering Section Engineer Guide #56 revised June 15, 1999 and based on a successful demonstration of negative pressure in the dryer oven in accordance with section E.1 of the testing requirements, the following assumptions shall be used in calculating the OC emissions: 20 percent, by weight, of the solvent in the coatings is retained in the web or substrate and the remaining 80 percent, by weight, is vented to the incinerator; 30 percent, by weight, of the fountain solution emissions are fugitive and the remaining 70 percent, by weight, is vented to the incinerator for fountain solutions containing only alcohol substitutes; and 50 percent, by weight, of the manual cleanup material is retained in the cleanup cloths and the remaining 50 percent, by weight, is fugitive emissions if the solvent has a vapor pressure of 10 mm Hg or lower at 20 degrees Celsius (68 degrees Fahrenheit).

- 5. The permittee shall collect and record the following information monthly for emissions units K001 through K009:
  - a. For emissions units K001, K002, K003, K004, K005, K006, and K009:
    - i. the company identification for each coating, concentrated fountain solution, and cleanup material employed;
    - ii. the amount of each coating, concentrated fountain solution, and cleanup employed, in pounds;
    - iii. the individual HAP content of each HAP of each coating, concentrated fountain

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- solution, and cleanup material employed, in weight percent;
- iv. the combined HAPs content of each coating, concentrated fountain solution, and cleanup material employed (the sum of all the individual HAP contents in (iii)), in weight percent;
  - v. the uncontrolled individual HAP emission rate for each HAP from all coatings employed, in pounds per month (i.e., the sum of  $[(ii) \times (iii) / 100]$  for each HAP for each coating employed);
  - vi. the controlled individual HAP emission rate for each HAP from all coatings employed, in tons per month (i.e.,  $[(0.80) \times (v) \times (1 - \text{destruction efficiency}^*)]^{**}$ , and then divided by 2000 for each HAP);
  - vii. the uncontrolled combined HAPs emission rate from all coatings employed, in pounds per month (i.e., the sum of  $[(ii) \times (iv) / 100]$  for each coating employed);
  - viii. the controlled combined HAPs emission rate for each HAP from all coatings employed, in tons per month (i.e.,  $[(0.80) \times (vii) \times (1 - \text{destruction efficiency}^*)]^{**}$ , and then divided by 2000);
  - ix. the uncontrolled individual HAP emission rate for each HAP from all concentrated fountain solutions employed, in pounds per month (i.e., the sum of  $[(ii) \times (iii) / 100]$  for each HAP for each fountain solution employed);
  - x. the controlled individual HAP emission rate for each HAP from all concentrated fountain solutions employed, in tons per month (i.e.,  $[(ix) \times [1 - (0.7) \times \text{destruction efficiency}^*]]^{**}$ , and then divided by 2000 for each HAP);
  - xi. the uncontrolled combined HAPs emission rate from all concentrated fountain solutions employed, in pounds per month (i.e., the sum of  $[(ii) \times (iv) / 100]$  for each fountain solution employed);
  - xii. the controlled combined HAPs emission rate from all concentrated fountain solutions employed, in tons per month (i.e.,  $[(xi) \times [(1 - (0.7) \times \text{destruction efficiency}^*)]^{**}$ , and then divided by 2000);
  - xiii. the controlled individual HAP emission rate for each HAP from all cleanup materials employed, in tons per month (i.e., the sum of  $(0.5) \times (ii) \times (iii)^{**}$  for each HAP for each cleanup material employed, and then divided by 2000);
  - xiv. the controlled combined HAPs emission rate from all cleanup materials employed,

- in tons per month (i.e., the sum of  $(0.5) \times (ii) \times (iv)^{**}$  for each cleanup material employed, and then divided by 2000);
- xv. the individual HAP emission rate for each HAP from all cleanup materials, all concentrated fountain solutions, and all coatings employed, in tons per month (i.e.,  $[(vi) + (x) + (xiii)]$  for each HAP); and
  - xvi. the combined HAPs emission rate from all cleanup materials, all concentrated fountain solutions, and all coatings employed, in tons per month (i.e.,  $[(viii) + (xii) + (xiv)]$ ).
- b. For emissions units K007 and K008:
- i. the company identification for each non-heatset ink, aqueous coating, concentrated fountain etch solution, fountain solution additive, manual cleanup material, and automatic cleanup material employed;
  - ii. the amount of each non-heatset ink, aqueous coating, concentrated fountain etch solution, fountain solution additive, manual cleanup material, and automatic cleanup material employed, in pounds;
  - iii. the individual HAP content of each HAP of each non-heatset ink, aqueous coating, concentrated fountain etch solution, fountain solution additive, manual cleanup material, and automatic cleanup material employed, in weight percent;
  - iv. the combined HAPs content of each non-heatset ink, aqueous coating, concentrated fountain etch solution, fountain solution additive, manual cleanup material, and automatic cleanup material employed (the sum of all the individual HAP contents in (iii)), in weight percent;
  - v. the individual HAP emission rate for each HAP from all non-heatset inks employed, in tons (i.e., the sum of  $[(ii) \times (iii)/100] \times 0.05^{***}$  for each HAP for each non-heatset ink employed, and then divided by 2000);
  - vi. the combined HAPs emission rate from all non-heatset inks employed, in tons (i.e., the sum of  $[(ii) \times (iv)/100] \times 0.05^{***}$  for each non-heatset ink employed, and then divided by 2000);
  - vii. the individual HAP emission rate for each HAP from all aqueous coatings employed, in tons (i.e., the sum of  $[(ii) \times (iii)/100]$  for each HAP for each aqueous

coating employed, and then divided by 2000);

- viii. the combined HAPs emission rate from all aqueous coatings employed, in tons (i.e., the sum of [(ii) x (iv)/100] for each aqueous coating employed, and then divided by 2000);
- ix. the individual HAP emission rate for each HAP from all concentrated fountain etch solutions employed, in tons (i.e., the sum of [(ii) x (iii)/100] for each HAP for each concentrated fountain etch solution employed, and then divided by 2000);
- x. the combined HAPs emission rate from all concentrated fountain etch solutions employed, in tons (i.e., the sum of [(ii) x (iv)/100] for each concentrated fountain etch solution employed, and then divided by 2000);
- xi. the individual HAP emission rate for each HAP from all fountain solution additives employed, in tons (i.e., the sum of [(ii) x (iii)/100] for each HAP for each fountain solution additive employed, and then divided by 2000);
- xii. the combined HAPs emission rate from all fountain solution additives employed, in tons (i.e., the sum of [(ii) x (iv)/100] for each fountain solution additive employed, and then divided by 2000);
- xiii. the individual HAP emission rate for each HAP from all manual cleanup materials employed, in tons (i.e., the sum of [(ii) x (iii)/100] x 0.5\*\*\*\* for each HAP for each manual cleanup material employed, and then divided by 2000);
- xiv. the combined HAPs emission rate from all manual cleanup materials employed, in tons (i.e., the sum of [(ii) x (iv)/100] x 0.5\*\*\*\* for each manual cleanup material employed, and then divided by 2000);
- xv. the individual HAP emission rate for each HAP from all automatic cleanup materials employed, in tons (i.e., the sum of [(ii) x (iii)/100] for each HAP for each automatic cleanup material employed, and then divided by 2000);
- xvi. the combined HAPs emission rate from all automatic cleanup materials employed, in tons (i.e., the sum of [(ii) x (iv)/100] for each automatic cleanup material employed, and then divided by 2000);
- xvii. the individual HAP emission rate for each HAP from all non-heatset ink, all aqueous coating, all concentrated fountain etch solution, all fountain solution additive, all manual cleanup material, and all automatic cleanup material employed, in tons per month ( i.e., [(v) + (vii) + (ix) + (xi) + (xiii) + (xv)] for each HAP); and

- xviii. the combined HAPs emission rate from all non-heatset ink, all aqueous coating, all concentrated fountain etch solution, all fountain solution additive, all manual cleanup material, and all automatic cleanup material employed, in tons per month (i.e., [(vi) + (viii) + (x) + (xii) + (xiv) + (xvi)]).
- c. For emissions unit K001 through K009:
- i. the total individual HAP emission rate for each HAP, in tons per month (i.e., (4.a.xv) + (4.b.xvii) for each HAP);
  - ii. the total combined HAPs emission rate, in tons per month (i.e., (4.a.xvi) + (4.b.xviii));
  - iii. beginning after the first 12 calendar months of operation following the issuance of this permit, the rolling, 12-month summations of individual HAP emissions for each HAP and of combined HAPs emissions for each month, in tons; and
  - iv. during the first 12 calendar months of operation following the issuance of this permit, the permittee shall record the cumulative emissions of individual HAP for each HAP and the cumulative emissions of combined HAPs for each month, in tons;
  - v. during the first 12 calendar months of operation following the issuance of this permit if the cumulative emissions of combined HAPs for each month are less than or equal to the allowable cumulative emissions of any individual HAP for each month, then cumulative emissions for each individual HAP do not need to be calculated; and
  - vi. beginning after the first 12 calendar months of operation following the issuance of this permit if the rolling, 12-month summation of combined HAPs is 8.0 tons per year or less for each month, then the rolling, 12-month summations of each individual HAP do not need to be calculated unless any subsequent rolling, 12-month summation exceeds 8.0 tons per year.

\* The permittee shall use the destruction efficiency from the most recent performance test that demonstrated that the emissions unit(s) was (were) in compliance.

\*\*Per Ohio EPA Division of Air Pollution Control Engineering Section Engineer Guide #56 revised June 15, 1999 and based on a successful demonstration of negative pressure in

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the dryer ovens, the following assumptions shall be used in calculating the HAP emissions: 20 percent, by weight, of the solvent in the coatings is retained in the web or substrate and the remaining 80 percent, by weight, is vented to the incinerator; 30 percent, by weight, of the fountain solution emissions are fugitive and the remaining 70 percent, by weight, is vented to the incinerator for fountain solutions containing only alcohol substitutes; and 50 percent, by weight, of the manual cleanup material is retained in the cleanup cloths and the remaining 50 percent, by weight, is fugitive emissions if the solvent has a vapor pressure of 10 mm Hg or lower at 20 degrees Celsius (68 degrees Fahrenheit).

\*\*\*Ohio EPA, Division of Air Pollution Control, Engineering Section, Engineering Guide #68 (dated July 7, 1997) states that only 5% of the ink solvent is emitted from non-heatset inks.

\*\*\*\*Ohio EPA, Division of Air Pollution Control, Engineering Section, Engineering Guide #68 (dated July 7, 1997) states 50% of the solvent is retained in the shop towel and 50% is emitted for cleanup solvents which have a composite vapor pressure less than 10 millimeters of mercury at 20 degrees Celsius.

6. The permittee shall operate and maintain a continuous temperature monitor and recorder which measures and records the combustion temperature within the RTO 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.

The permittee shall collect and record the following information for each day:

- a. all 3-hour blocks of time during which the average combustion temperature within the RTO thermal incinerator, when the emissions unit was in operation, was more than 50 degrees Fahrenheit below the average temperature during the most recent emission test that demonstrated the emissions unit was in compliance; and
  - b. a log of the downtime for the capture (collection) system, control device, and monitoring equipment, when the associated emissions unit was in operation.
7. The permit to install for this emissions unit (K003) was evaluated based on the actual materials (typically coatings and cleanup materials) and the design parameters of the emissions unit's exhaust system, as specified by the permittee in the permit to install application. The Ohio EPA's "Review of New Sources of Air Toxic Emissions" policy ("Air Toxic Policy") was applied for each pollutant emitted by this emissions unit using data from the permit to install application and the SCREEN 3.0 model (or other Ohio EPA approved model). The predicted 1-hour maximum ground-level concentration from the use of the SCREEN 3.0 model was compared to the

Maximum Acceptable Ground-Level Concentration (MAGLC). The following summarizes the results of the modeling for the "worst case" pollutant(s):

Pollutant: ethylene glycol n-butyl ether

TLV (mg/m<sup>3</sup>): 97

Maximum Hourly Emission Rate (lbs/hr): 1.66\*

Predicted 1-Hour Maximum Ground-Level  
Concentration (ug/m<sup>3</sup>): 320.0

MAGLC (ug/m<sup>3</sup>): 2309.5

Pollutant: ethylene glycol

TLV (mg/m<sup>3</sup>): 73

Maximum Hourly Emission Rate (lbs/hr): 1.06\*

Predicted 1-Hour Maximum Ground-Level  
Concentration (ug/m<sup>3</sup>): 192.6

MAGLC (ug/m<sup>3</sup>): 1738.1

Pollutant: petroleum naphtha

TLV (mg/m<sup>3</sup>): 525

Maximum Hourly Emission Rate (lbs/hr): 8.27\*\*

Predicted 1-Hour Maximum Ground-Level  
Concentration (ug/m<sup>3</sup>): 1661

MAGLC (ug/m<sup>3</sup>): 12500

\*Maximum emission rate from emissions units K001 through K009.

\*\*Maximum emission rate from emissions units K001 through K006 and K009.

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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 (typically for coatings or cleanup materials), or the use of new materials, that would result in the emission of a compound with a lower Threshold Limit Value (TLV), as indicated in the most recent version of the handbook entitled "American Conference of Governmental Industrial Hygienists (ACGIH)," than the lowest TLV value previously modeled;
- b. changes in the composition of the materials, or use of new materials, that would result in an increase in emissions of any pollutant with a listed TLV that was proposed in the application and modeled; and
- c. physical changes to the emissions unit or its exhaust parameters (e.g., increased/ decreased exhaust flow, changes in stack height, changes in stack diameter, etc.).

If the permittee determines that the "Air Toxic Policy" will be satisfied for the above changes, the Ohio EPA will not consider the change(s) to be a "modification" under OAC rule 3745-31-01(VV)(1)(a)(ii), and a modification of the existing permit to install will not be required. If the change(s) is (are) defined as a modification under other provisions of the modification definition (other than (VV)(1)(a)(ii)), then the permittee shall obtain a final permit to install prior to the change.

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

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

**D. Reporting Requirements**

1. The permittee shall notify the Director (the appropriate Ohio EPA District Office or local air agency) in writing if a "photochemically reactive material" (as defined in OAC 3745-21-01 (C)(5)) is employed in the emissions unit . The notification shall include a copy of such record and shall be sent to the Director (the appropriate Ohio EPA District Office or local air agency) within 45 days after such an occurrence.
2. The permittee shall submit deviation (excursion) reports that identify any time periods when the emissions unit was in operation and the emissions from the emissions unit were not vented to the RTO thermal incinerator. Each report shall be submitted within 30 days after the deviation occurs.
3. The permittee shall submit deviation (excursion) reports which identify all 3-hour blocks of time during which the average combustion temperature within the RTO thermal incinerator does not comply with the temperature limitation specified above.
4. The permittee shall submit deviation (excursion) reports which identify all exceedances of the rolling, 12-month usage limitations for coatings, cleanup materials, and concentrated fountain solutions and the rolling 12-month emission limitations for OC, any individual HAP, and combined HAPs and, for the first 12 calendar months of operation following the issuance of this permit, all exceedances of the maximum allowable cumulative coating usage levels, cleanup material usage levels, concentrated fountain solution levels, emissions of any individual HAP levels, and emissions of combined HAPs levels.
5. The permittee shall notify the Director (the appropriate Ohio EPA District Office or local air agency) in writing if a coating or a concentrated fountain solution which exceeds the OC contents specified in section B.5 of these terms and conditions is employed in this emissions unit. The notification shall include a copy of such record and shall be sent to the Director (the appropriate Ohio EPA District Office or local air agency) within 30 days after such an occurrence.
6. The permittee shall notify the Director (the appropriate Ohio EPA District Office or local air agency) in writing if a fountain solution containing any alcohol is employed in this emissions unit. The notification shall include a copy of such record and shall be sent to the Director (the appropriate Ohio EPA District Office or local air agency) within 45 days after such an occurrence.
7. The permittee shall notify the Director (the appropriate Ohio EPA District Office or local air agency) in writing if a cleanup material that has a vapor pressure of 10 mm Hg or greater is employed in this emissions unit . The notification shall include a copy of such record and shall be sent to the Director (the appropriate Ohio EPA District Office or local air agency) within 45 days

after such an occurrence.

8. The permittee shall also submit annual reports which specify the total OC emissions from emissions units K001, K002, K003, K004, K005, K006, and K009 combined for the previous calendar year. These reports shall be submitted by January 31 of each year.
9. The deviation reports shall be submitted in accordance with the requirements specified in the General Terms and Conditions of this permit.

#### E. Testing Requirements

1. A demonstration of negative pressure differential for the dryer oven shall be conducted within 90 days of start-up of emissions unit K009 to confirm that the assumptions stated in sections C.4 and C.5 of these terms and conditions apply to this emissions unit. Such a demonstration shall be shown by either of the following methods:
  - a. By using a differential pressure gauge so that an inlet of the gauge is within the dryer and the other inlet is open to the ambient air in the pressroom. The differential pressure gauge may be a liquid column gauge or may be a mechanical type gauge. The differential pressure gauge shall be properly leveled and zeroed according to the manufacturer's instructions. If a mechanical type gauge is used, it should be calibrated according to the manufacturer's instructions against a liquid column gauge. (If a liquid column gauge is used, no calibration is necessary). The gauge should measure a pressure differential of at least 0.007 inches of water column whenever the press is operating to ensure that air is entering the dryer through all of the dryer's openings (excluding the exhaust stack). If a pressure gauge is to be permanently installed on the dryer, the location of the pressure tap within the dryer should not be modified without first consulting with the dryer manufacturer/installer. This is important since the manufacturer/installer may have used the pressure differential to set the exhaust rate for the dryer to ensure that the VOC concentration within the dryer remains below 25 percent of the lower explosive limit; or
  - b. By using smoke tubes, plastic flow indicating strips or other flow indicating devices approved by the field office in consultation with the Engineering Section to demonstrate that air flows into the dryer at all openings in the dryer (excluding the exhaust stack). All points measured with such devices should indicate airflow into the dryer.

If the testing fails to demonstrate negative pressure in the dryer oven, the assumptions detailed in sections C.4 and C.5 of these terms and conditions shall not apply, and an overall control efficiency of this emissions unit shall be based on capture efficiency testing as described in section E.2.e below.

2. The permittee shall conduct, or have conducted, emission testing for this emissions unit in

accordance with the following requirements:

- a. The emission testing shall be conducted within 90 days of start-up of emissions unit K009.
  - b. The emission testing shall be conducted to demonstrate compliance with the capture efficiency for OC (verify negative pressure in the dryer oven as described in Section E.1 above) and the control efficiency for OC and organic HAP.
  - c. The test method(s) which must be employed to demonstrate compliance with the control efficiency limitation for OC and organic HAP are specified below. Alternative U.S. EPA approved test methods may be used with prior approval from the Ohio EPA.
  - d. 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. 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.
  - e. If required, 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 USEPA's "Guidelines 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.)
  - f. The test(s) shall be conducted while the emissions unit is operating at or near its maximum capacity, unless otherwise specified or approved by the appropriate Ohio EPA District Office or local air agency.
3. Not later than 30 days prior to the proposed test date(s), the permittee shall submit an "Intent to Test" notification to the appropriate Ohio EPA District Office or local air agency. 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 District Office's or local air agency's refusal to accept the results of the emission test(s).
  4. Personnel from the appropriate Ohio EPA District Office or local air agency shall be permitted to witness the test(s), examine the testing equipment, and acquire data and information necessary to

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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.

5. 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 appropriate Ohio EPA District Office or local air agency within 30 days following completion of the test(s). The permittee may request additional time for the submittal of the written report, where warranted, with prior approval from the appropriate Ohio EPA District Office or local air agency.
6. Compliance with the emission limitations in sections A.1 and B.5 of these terms and conditions shall be determined in accordance with the following methods:

a. Emission Limitations:

OC content of 45.0%, by weight, for coatings  
 OC content of 15.0%, by weight, for concentrated fountain solutions

Applicable Compliance Method:

Formulation data or USEPA Method 24 (for coatings) or 24A (for flexographic and rotogravure printing inks and related coatings) shall be used to determine the organic compound contents of the coatings and concentrated fountain solutions.

b. Emission Limitation:

2.08 pounds of OC per hour for coatings and fountain solutions

Applicable Compliance Method:

Compliance shall be determined by the following equation:

$$[(\text{maximum coating usage, in pounds per hour}) \times (0.45^*) \times (0.8^{**}) \times (1-0.95^{***}) + (\text{maximum concentrated fountain solution usage, in pounds per hour}) \times (0.15^*) \times (1-(0.7^{**}) \times (0.95^{***}))]$$

\*Maximum allowable OC content for coatings and concentrated fountain solutions.

\*\*Per Ohio EPA Division of Air Pollution Control Engineering Section Engineer Guide #56 revised June 15, 1999, emission factors provided in the answer to question number 21.

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\*\*\*Minimum required control efficiency for the RTO thermal incinerator.

c. Emission Limitation:

0.4 pound of PE per hour

Applicable Compliance Method:

Stack testing may be required in the future in accordance with the test method(s) and procedures in OAC rule 3745-17-03(B)(10).

- d. Emission Limitation:
- 1.8 tons of PE per year
- Applicable Compliance Method:
- Multiply the allowable hourly emission limitation by 8760 hours per year, then divide by 2000 pounds per ton.
- e. Emission Limitations:
- dryer oven - 0.55 pound of CO per hour  
RTO thermal incinerator - 0.72 pound of CO per hour
- Applicable Compliance Method:
- Multiply the CO emission factor of 84 pounds of CO emissions per million cubic feet of natural gas by the maximum hourly natural gas usage. The CO emission factor is from AP-42, 5th edition, Table 1.4-1, dated 2/98.
- f. Emission Limitations:
- dryer oven - 2.4 tons of CO per year  
RTO thermal incinerator - 3.2 tons of CO per year
- Applicable Compliance Method:
- Multiply the allowable hourly emission limitation by 8760 hours per year, then divide by 2000 pounds per ton.
- g. Emission Limitations:
- dryer oven - 0.66 pound of NOx per hour  
RTO thermal incinerator - 0.86 pound of NOx per hour
- Applicable Compliance Method:
- Multiply the NOx emission factor of 100 pounds of NOx emissions per million cubic feet of natural gas by the maximum hourly natural gas usage. The NOx emission factor is from AP-42, 5th edition, Table 1.4-1, dated 2/98.

h. Emission Limitations:

dryer oven - 2.9 tons of NO<sub>x</sub> per year  
RTO thermal incinerator - 3.8 tons of NO<sub>x</sub> per year

Applicable Compliance Method:

Multiply the allowable hourly emission limitation by 8760 hours per year, then divide by 2000 pounds per ton.

i. Emission Limitations:

dryer oven - 0.07 pound of OC per hour  
RTO thermal incinerator - 0.10 pound of OC per hour

Applicable Compliance Method:

Multiply the OC emission factor of 11 pounds of OC emissions per million cubic feet of natural gas by the maximum yearly natural gas usage, and divide by 2000 lbs/ton. The OC emission factor is from AP-42, 5th edition, Table 1.4-2, dated 3/98.

j. Emission Limitations:

dryer oven - 0.3 ton of OC per year  
RTO thermal incinerator - 0.4 ton of OC per year

Applicable Compliance Method:

Multiply the allowable hourly emission limitation by 8760 hours per year, then divide by 2000 pounds per ton.

k. Emission Limitation:

20% opacity as a 6-minute average

Applicable Compliance Method:

OAC rule 3745-17-03(B)(1)

l. Emission Limitation:

The control efficiency of the RTO thermal incinerator shall be at least 95%, by weight for OC and organic HAP

Applicable Compliance Method:

Compliance with the control efficiency requirement shall be determined in accordance with the test methods and procedures specified in OAC rule 3745-21-10 as required in section E.2 of these terms and conditions.

m. Emission Limitation:

The emissions of OC from emissions units K001, K002, K003, K004, K005, K006, and K009 shall not exceed 48.3 tons per year, based upon a rolling, 12-month summation of the monthly emissions.

Applicable Compliance Method:

Compliance shall be demonstrated based upon the monthly record keeping as required by section C.4 of these terms and conditions. Formulation data or USEPA Method 24 (for coatings) or 24A (for flexographic and rotogravure printing inks and related coatings) shall be used to determine the organic compound contents of the coatings and concentrated fountain solutions.

n. Emission Limitations:

The emissions of any individual hazardous air pollutant (HAP) from emissions unit K001 through K009 shall not exceed 8.0 tons per year, based upon a rolling, 12-month summation of the monthly emissions.

The emissions of combined hazardous air pollutants (HAPs) from emissions units K001 through K009 shall not exceed 20.0 tons per year, based upon a rolling, 12-month summation of the monthly emissions.

Applicable Compliance Method:

Compliance shall be demonstrated based upon the monthly record keeping as required by section C.5 of these terms and conditions. Formulation data shall be used to determine the HAP contents of the non-heatset inks, aqueous coatings, coatings, concentrated fountain

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solutions, concentrated fountain etch solutions, fountain solution additives, and cleanup materials.

**F. Miscellaneous Requirements**

1. The terms and conditions in this Permit to Install 16-02284 shall supersede all the air pollution control requirements for K003 in Permit to Install 16-1815, issued on April 21, 1999.
2. The following terms and conditions of this permit are federally enforceable pursuant to OAC rule 3745-35-07: A.1, A.2.a, B.1, B.2, B.3, B.4, B.5, B.6, B.7, B.8, C.1, C.2, C.3, C.4, C.5, C.6, D.1, D.2, D.3, D.4, D.5, D.6, D.7, D.8, E.1, E.2, E.3, E.4, and E.5.



OAC rule 3745-21-07(G)(2)

OAC rule 3745-35-07(B)

Applicable Emissions  
Limitations/Control Measures

2.08 pounds of organic compounds (OC) per hour for coatings and fountain solutions

0.4 pound of particulate emissions (PE) per hour (including combustion emissions)

1.8 tons of PE per year (including combustion emissions)

Natural gas combustion emissions from the RTO thermal incinerator shall not exceed the following:

0.72 pound of CO per hour and 3.2 tons of CO per year;

0.86 pound of NO<sub>x</sub> per hour and 3.8 tons of NO<sub>x</sub> per year; and

0.10 pound of OC per hour and 0.4 ton of OC per year.

Natural gas combustion emissions from the dryer oven shall not exceed the following:

0.55 pound of CO per hour and 2.4 tons of CO per year;

0.66 pound of NO<sub>x</sub> per hour and 2.9 tons of NO<sub>x</sub> per year; and

0.07 pound of OC per hour and 0.3 ton of OC per year.

The requirements of this rule also include compliance with the requirements of OAC rule 3745-17-07 and OAC rule 3745-35-07.

Visible particulate emissions from any stack shall not exceed 20% opacity as a 6-minute average, except as provided by the rule.

The particulate emission limitation based on OAC rule 3745-17-11 is less stringent than the particulate emission limitation established in accordance with the best available technology requirements specified in OAC rule 3745-31-05.

Exempt. See B.1 below.

The control (destruction) efficiency of the RTO thermal incinerator shall be at least 95%, by weight for OC and organic HAP.

The emissions of OC from emissions units K001, K002, K003, K004, K005, K006, and K009 shall not exceed 48.3 tons per year, based upon a rolling, 12-month summation of the monthly emissions.

See B.5 below.

The emissions of any individual hazardous air pollutant (HAP) from emissions units K001 through K009 shall not exceed 8.0 tons per year, based upon a rolling, 12-month

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summation of the monthly emissions.

The emissions of combined hazardous air pollutants (HAPs) from emissions units K001 through K009 shall not exceed 20.0 tons per year, based upon a rolling, 12-month summation of the monthly emissions.

See A.2.a below.

## **2. Additional Terms and Conditions**

- 2.a** To ensure enforceability during the first 12 calendar months of operation following the issuance of this permit, the permittee shall not exceed the emission levels specified in the following table:

<u>Month(s)</u>	<u>Maximum Allowable Cumulative Emissions of Any Individual HAP (Tons)</u>	<u>Maximum Allowable Cumulative Emissions of Combined HAPs (Tons)</u>
1	0.7	1.7
1-2	1.3	3.3
1-3	2.0	5.0
1-4	2.7	6.7
1-5	3.3	8.3
1-6	4.0	10.0
1-7	4.7	11.7
1-8	5.3	13.3
1-9	6.0	15.0
1-10	6.7	16.7
1-11	7.3	18.3
1-12	8.0	20.0

After the first 12 calendar months of operation following the issuance of this permit, compliance with the annual emission limitations for any individual HAP and combined HAPs shall be based upon a rolling, 12-month summation of the monthly emissions.

- 2.b** The hourly OC emission limitation regulated per OAC rule 3745-31-05(A)(3) is based on

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the emissions unit's potential to emit. Therefore, no record keeping or reporting is required to demonstrate compliance with this limit.

However, if any proposed change(s), such as with production capacity, the types and/or quantities of materials used or processed, or anything else that increases the potential emissions of any air pollutant, then the permittee shall apply for and obtain either a modification to the permit to install or a new final permit to install prior to the change(s).

- 2.c** The hourly and annual CO, NO<sub>x</sub>, and OC emission limitations from natural gas combustion and the hourly and annual PE emissions limitations regulated per OAC rule 3745-31-05(A)(3) are based on the emissions unit's potential to emit. Therefore, no record keeping or reporting is required to demonstrate compliance with these limits.

## B. Operational Restrictions

1. The permittee shall not employ any photochemically reactive materials, as defined in OAC rule 3745-21-01(C)(5), in this emissions unit. This determination shall be made based on the actual formulation of the materials after any final in-plant reducing or thinning and prior to application of the materials.
2. The OC and organic HAP emissions from this emissions unit shall be vented to the RTO thermal incinerator when the emissions unit is in operation.
3. The average combustion temperature within the RTO thermal incinerator, for any 3-hour block of time, shall not be more than 50 degrees Fahrenheit below the average temperature during the most recent emission test that demonstrated the emissions unit(s) was (were) in compliance.
4. The maximum annual coating usage, cleanup material usage, and concentrated fountain solution usage for emissions units K001, K002, K003, K004, K005, K006, and K009 shall not exceed 2,200,000 pounds per year, 91,080 pounds per year, and 228,253 pounds per year, respectively, based upon a rolling, 12-month summation of the usage figures. The usage limitations result in a 48.3 tons of organic compounds (OC) per year emission limitation for K001 through K006 and K009. The OC content of the coatings and the concentrated fountain solutions employed shall not exceed 45.0% by weight and 15.0% by weight, respectively.

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

<u>Month(s)</u>	<u>Maximum Allowable Cumulative Coating Usage (pounds)</u>	<u>Maximum Allowable Cumulative Cleanup Material Usage (pounds)</u>	<u>Maximum Allowable Cumulative Concentrated Fountain Solution Usage (pounds)</u>
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1	183,333	7,590	19,021
1-2	366,667	15,180	38,042
1-3	550,000	22,770	57,063
1-4	733,333	30,360	76,084
1-5	916,667	37,950	95,105
1-6	1,100,000	45,540	114,127
1-7	1,283,333	53,130	133,148
1-8	1,466,667	60,720	152,169
1-9	1,650,000	68,310	171,190
1-10	1,866,333	75,900	190,211
1-11	2,016,677	83,490	209,232
1-12	2,200,000	91,080	228,253

After the first 12 calendar months of operation following the issuance of this permit, compliance with the annual usage limitations shall be based upon a rolling, 12-month summation of the usage figures.

5. The permittee shall only employ cleanup materials that have a vapor pressure that is less than 10 mm Hg at 20 degrees Celsius (68 degrees Fahrenheit). The permittee shall store the cleanup cloths in closed containers.
6. The dryer oven for this emissions unit shall only employ natural gas.
7. The permittee shall not employ fountain solutions that contain alcohol in this emissions unit.
8. The permittee shall only employ automatic blanket wash cleanup that contains no organic solvent in this emissions unit. Only the manual cleanup material can contain organic solvents.

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

1. The permittee shall maintain the following information for this emissions unit:
  - a. the MSDS sheets for each liquid organic material employed;
  - b. documentation as to whether or not each material is a photochemically reactive material; and
  - c. for materials that are reduced or thinned prior to application, documentation as to whether or not the resulting material is a photochemically reactive material.

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2. The permittee shall maintain the following information for this emissions unit:
  - a. the MSDS sheets for each fountain solution employed; and
  - b. documentation as to whether or not each fountain solution contains any alcohol.
3. The permittee shall maintain documentation of the vapor pressure, in millimeters of mercury at 20 degrees Celsius (68 degrees Fahrenheit) for each cleanup material employed.
4. The permittee shall collect and record the following information monthly for emissions units K001, K002, K003, K004, K005, K006, and K009:
  - a. the company identification for each coating, concentrated fountain solution, and cleanup material employed;
  - b. the amount of each coating, concentrated fountain solution, and cleanup employed, in pounds;
  - c. the total amount of all coatings, all concentrated fountain solutions, and all cleanup materials employed, in pounds;
  - d. the OC content of each coating, concentrated fountain solution, and cleanup material employed, in weight percent;
  - e. the total uncontrolled OC emission rate from all coatings employed, in pounds per month (i.e., [(c)x(the worst-case OC content in weight percent of all the coatings employed in the month)/100] or the sum of [(b)x(d)/100] for each coating employed);
  - f. the total controlled OC emission rate from all coatings employed, in tons per month (i.e., [(0.80)x(e)x(1-destruction efficiency\*)]\*\*, and then divided by 2000);
  - g. the total uncontrolled OC emission rate from all concentrated fountain solutions employed, in pounds per month (i.e., the sum of [(b)x(d)/100] for each concentrated fountain solution employed);
  - h. the total controlled OC emission rate from all concentrated fountain solutions employed, in tons per month (i.e., [(g)x(1- (0.7) x destruction efficiency\*)]\*\*, and then divided by 2000);
  - i. the total controlled OC emission rate from all cleanup materials employed, in tons per month (i.e., the sum of (0.5)x(b)x(d)\*\* for each cleanup material employed, and then divided by 2000);

- j. the total OC emission rate from the emissions units K001, K002, K003, K004, K005, K006, and K009, in tons per month (i.e., [(f)+(h)+(i)]).
- k. beginning after the first 12 calendar months of operation following the issuance of this permit, the rolling, 12-month summations of the coating usage figures, concentrated fountain solution usage figures, cleanup material usage figures, and OC emissions for each month, in pounds or tons; and
- l. during the first 12 calendar months of operation following the issuance of this permit, the permittee shall record the cumulative coating usage, concentrated fountain solution usage, and cleanup material usage for each month, in pounds.

\* The permittee shall use the destruction efficiency from the most recent performance test that demonstrated that the emissions unit(s) was (were) in compliance.

\*\*Per Ohio EPA Division of Air Pollution Control Engineering Section Engineer Guide #56 revised June 15, 1999 and based on a successful demonstration of negative pressure in the dryer oven in accordance with section E.1 of the testing requirements, the following assumptions shall be used in calculating the OC emissions: 20 percent, by weight, of the solvent in the coatings is retained in the web or substrate and the remaining 80 percent, by weight, is vented to the incinerator; 30 percent, by weight, of the fountain solution emissions are fugitive and the remaining 70 percent, by weight, is vented to the incinerator for fountain solutions containing only alcohol substitutes; and 50 percent, by weight, of the manual cleanup material is retained in the cleanup cloths and the remaining 50 percent, by weight, is fugitive emissions if the solvent has a vapor pressure of 10 mm Hg or lower at 20 degrees Celsius (68 degrees Fahrenheit).

- 5. The permittee shall collect and record the following information monthly for emissions units K001 through K009:
  - a. For emissions units K001, K002, K003, K004, K005, K006, and K009:
    - i. the company identification for each coating, concentrated fountain solution, and cleanup material employed;
    - ii. the amount of each coating, concentrated fountain solution, and cleanup employed, in pounds;
    - iii. the individual HAP content of each HAP of each coating, concentrated fountain

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solution, and cleanup material employed, in weight percent;

- iv. the combined HAPs content of each coating, concentrated fountain solution, and cleanup material employed (the sum of all the individual HAP contents in (iii)), in weight percent;
- v. the uncontrolled individual HAP emission rate for each HAP from all coatings employed, in pounds per month (i.e., the sum of  $[(ii) \times (iii) / 100]$  for each HAP for each coating employed);
- vi. the controlled individual HAP emission rate for each HAP from all coatings employed, in tons per month (i.e.,  $[(0.80) \times (v) \times (1 - \text{destruction efficiency}^*)]^{**}$ , and then divided by 2000 for each HAP);
- vii. the uncontrolled combined HAPs emission rate from all coatings employed, in pounds per month (i.e., the sum of  $[(ii) \times (iv) / 100]$  for each coating employed);
- viii. the controlled combined HAPs emission rate for each HAP from all coatings employed, in tons per month (i.e.,  $[(0.80) \times (vii) \times (1 - \text{destruction efficiency}^*)]^{**}$ , and then divided by 2000);
- ix. the uncontrolled individual HAP emission rate for each HAP from all concentrated fountain solutions employed, in pounds per month (i.e., the sum of  $[(ii) \times (iii) / 100]$  for each HAP for each fountain solution employed);
- x. the controlled individual HAP emission rate for each HAP from all concentrated fountain solutions employed, in tons per month (i.e.,  $[(ix) \times [1 - (0.7) \times \text{destruction efficiency}^*]]^{**}$ , and then divided by 2000 for each HAP);
- xi. the uncontrolled combined HAPs emission rate from all concentrated fountain solutions employed, in pounds per month (i.e., the sum of  $[(ii) \times (iv) / 100]$  for each fountain solution employed);
- xii. the controlled combined HAPs emission rate from all concentrated fountain solutions employed, in tons per month (i.e.,  $[(xi) \times [(1 - (0.7) \times \text{destruction efficiency}^*)]^{**}$ , and then divided by 2000);
- xiii. the controlled individual HAP emission rate for each HAP from all cleanup materials employed, in tons per month (i.e., the sum of  $(0.5) \times (ii) \times (iii)^{**}$  for each HAP for each cleanup material employed, and then divided by 2000);
- xiv. the controlled combined HAPs emission rate from all cleanup materials employed,

- in tons per month (i.e., the sum of  $(0.5) \times (ii) \times (iv)^{**}$  for each cleanup material employed, and then divided by 2000);
- xv. the individual HAP emission rate for each HAP from all cleanup materials, all concentrated fountain solutions, and all coatings employed, in tons per month (i.e.,  $[(vi) + (x) + (xiii)]$  for each HAP); and
  - xvi. the combined HAPs emission rate from all cleanup materials, all concentrated fountain solutions, and all coatings employed, in tons per month (i.e.,  $[(viii) + (xii) + (xiv)]$ ).
- b. For emissions units K007 and K008:
- i. the company identification for each non-heatset ink, aqueous coating, concentrated fountain etch solution, fountain solution additive, manual cleanup material, and automatic cleanup material employed;
  - ii. the amount of each non-heatset ink, aqueous coating, concentrated fountain etch solution, fountain solution additive, manual cleanup material, and automatic cleanup material employed, in pounds;
  - iii. the individual HAP content of each HAP of each non-heatset ink, aqueous coating, concentrated fountain etch solution, fountain solution additive, manual cleanup material, and automatic cleanup material employed, in weight percent;
  - iv. the combined HAPs content of each non-heatset ink, aqueous coating, concentrated fountain etch solution, fountain solution additive, manual cleanup material, and automatic cleanup material employed (the sum of all the individual HAP contents in (iii)), in weight percent;
  - v. the individual HAP emission rate for each HAP from all non-heatset inks employed, in tons (i.e., the sum of  $[(ii) \times (iii)/100] \times 0.05^{***}$  for each HAP for each non-heatset ink employed, and then divided by 2000);
  - vi. the combined HAPs emission rate from all non-heatset inks employed, in tons (i.e., the sum of  $[(ii) \times (iv)/100] \times 0.05^{***}$  for each non-heatset ink employed, and then divided by 2000);
  - vii. the individual HAP emission rate for each HAP from all aqueous coatings employed, in tons (i.e., the sum of  $[(ii) \times (iii)/100]$  for each HAP for each aqueous

coating employed, and then divided by 2000);

- viii. the combined HAPs emission rate from all aqueous coatings employed, in tons (i.e., the sum of [(ii) x (iv)/100] for each aqueous coating employed, and then divided by 2000);
- ix. the individual HAP emission rate for each HAP from all concentrated fountain etch solutions employed, in tons (i.e., the sum of [(ii) x (iii)/100] for each HAP for each concentrated fountain etch solution employed, and then divided by 2000);
- x. the combined HAPs emission rate from all concentrated fountain etch solutions employed, in tons (i.e., the sum of [(ii) x (iv)/100] for each concentrated fountain etch solution employed, and then divided by 2000);
- xi. the individual HAP emission rate for each HAP from all fountain solution additives employed, in tons (i.e., the sum of [(ii) x (iii)/100] for each HAP for each fountain solution additive employed, and then divided by 2000);
- xii. the combined HAPs emission rate from all fountain solution additives employed, in tons (i.e., the sum of [(ii) x (iv)/100] for each fountain solution additive employed, and then divided by 2000);
- xiii. the individual HAP emission rate for each HAP from all manual cleanup materials employed, in tons (i.e., the sum of [(ii) x (iii)/100] x 0.5\*\*\*\* for each HAP for each manual cleanup material employed, and then divided by 2000);
- xiv. the combined HAPs emission rate from all manual cleanup materials employed, in tons (i.e., the sum of [(ii) x (iv)/100] x 0.5\*\*\*\* for each manual cleanup material employed, and then divided by 2000);
- xv. the individual HAP emission rate for each HAP from all automatic cleanup materials employed, in tons (i.e., the sum of [(ii) x (iii)/100] for each HAP for each automatic cleanup material employed, and then divided by 2000);
- xvi. the combined HAPs emission rate from all automatic cleanup materials employed, in tons (i.e., the sum of [(ii) x (iv)/100] for each automatic cleanup material employed, and then divided by 2000);
- xvii. the individual HAP emission rate for each HAP from all non-heatset ink, all aqueous coating, all concentrated fountain etch solution, all fountain solution additive, all manual cleanup material, and all automatic cleanup material employed, in tons per month ( i.e., [(v) + (vii) + (ix) + (xi) + (xiii) + (xv)] for each HAP); and

- xviii. the combined HAPs emission rate from all non-heatset ink, all aqueous coating, all concentrated fountain etch solution, all fountain solution additive, all manual cleanup material, and all automatic cleanup material employed, in tons per month (i.e., [(vi) + (viii) + (x) + (xii) + (xiv) + (xvi)]).
- c. For emissions unit K001 through K009:
- i. the total individual HAP emission rate for each HAP, in tons per month (i.e., (4.a.xv) + (4.b.xvii) for each HAP);
  - ii. the total combined HAPs emission rate, in tons per month (i.e., (4.a.xvi) + (4.b.xviii));
  - iii. beginning after the first 12 calendar months of operation following the issuance of this permit, the rolling, 12-month summations of individual HAP emissions for each HAP and of combined HAPs emissions for each month, in tons; and
  - iv. during the first 12 calendar months of operation following the issuance of this permit, the permittee shall record the cumulative emissions of individual HAP for each HAP and the cumulative emissions of combined HAPs for each month, in tons;
  - v. during the first 12 calendar months of operation following the issuance of this permit if the cumulative emissions of combined HAPs for each month are less than or equal to the allowable cumulative emissions of any individual HAP for each month, then cumulative emissions for each individual HAP do not need to be calculated; and
  - vi. beginning after the first 12 calendar months of operation following the issuance of this permit if the rolling, 12-month summation of combined HAPs is 8.0 tons per year or less for each month, then the rolling, 12-month summations of each individual HAP do not need to be calculated unless any subsequent rolling, 12-month summation exceeds 8.0 tons per year.

\* The permittee shall use the destruction efficiency from the most recent performance test that demonstrated that the emissions unit(s) was (were) in compliance.

\*\*Per Ohio EPA Division of Air Pollution Control Engineering Section Engineer Guide #56 revised June 15, 1999 and based on a successful demonstration of negative pressure in

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the dryer ovens, the following assumptions shall be used in calculating the HAP emissions: 20 percent, by weight, of the solvent in the coatings is retained in the web or substrate and the remaining 80 percent, by weight, is vented to the incinerator; 30 percent, by weight, of the fountain solution emissions are fugitive and the remaining 70 percent, by weight, is vented to the incinerator for fountain solutions containing only alcohol substitutes; and 50 percent, by weight, of the manual cleanup material is retained in the cleanup cloths and the remaining 50 percent, by weight, is fugitive emissions if the solvent has a vapor pressure of 10 mm Hg or lower at 20 degrees Celsius (68 degrees Fahrenheit).

\*\*\*Ohio EPA, Division of Air Pollution Control, Engineering Section, Engineering Guide #68 (dated July 7, 1997) states that only 5% of the ink solvent is emitted from non-heatset inks.

\*\*\*\*Ohio EPA, Division of Air Pollution Control, Engineering Section, Engineering Guide #68 (dated July 7, 1997) states 50% of the solvent is retained in the shop towel and 50% is emitted for cleanup solvents which have a composite vapor pressure less than 10 millimeters of mercury at 20 degrees Celsius.

6. The permittee shall operate and maintain a continuous temperature monitor and recorder which measures and records the combustion temperature within the RTO 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.

The permittee shall collect and record the following information for each day:

- a. all 3-hour blocks of time during which the average combustion temperature within the RTO thermal incinerator, when the emissions unit was in operation, was more than 50 degrees Fahrenheit below the average temperature during the most recent emission test that demonstrated the emissions unit was in compliance; and
  - b. a log of the downtime for the capture (collection) system, control device, and monitoring equipment, when the associated emissions unit was in operation.
7. The permit to install for this emissions unit (K004) was evaluated based on the actual materials (typically coatings and cleanup materials) and the design parameters of the emissions unit's exhaust system, as specified by the permittee in the permit to install application. The Ohio EPA's "Review of New Sources of Air Toxic Emissions" policy ("Air Toxic Policy") was applied for each pollutant emitted by this emissions unit using data from the permit to install application and the SCREEN 3.0 model (or other Ohio EPA approved model). The predicted 1-hour maximum ground-level concentration from the use of the SCREEN 3.0 model was compared to the

Maximum Acceptable Ground-Level Concentration (MAGLC). The following summarizes the results of the modeling for the "worst case" pollutant(s):

Pollutant: ethylene glycol n-butyl ether

TLV (mg/m<sup>3</sup>): 97

Maximum Hourly Emission Rate (lbs/hr): 1.66\*

Predicted 1-Hour Maximum Ground-Level  
Concentration (ug/m<sup>3</sup>): 320.0

MAGLC (ug/m<sup>3</sup>): 2309.5

Pollutant: ethylene glycol

TLV (mg/m<sup>3</sup>): 73

Maximum Hourly Emission Rate (lbs/hr): 1.06\*

Predicted 1-Hour Maximum Ground-Level  
Concentration (ug/m<sup>3</sup>): 192.6

MAGLC (ug/m<sup>3</sup>): 1738.1

Pollutant: petroleum naphtha

TLV (mg/m<sup>3</sup>): 525

Maximum Hourly Emission Rate (lbs/hr): 8.27\*\*

Predicted 1-Hour Maximum Ground-Level  
Concentration (ug/m<sup>3</sup>): 1661

MAGLC (ug/m<sup>3</sup>): 12500

\*Maximum emission rate from emissions units K001 through K009.

\*\*Maximum emission rate from emissions units K001 through K006 and K009.

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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 (typically for coatings or cleanup materials), or the use of new materials, that would result in the emission of a compound with a lower Threshold Limit Value (TLV), as indicated in the most recent version of the handbook entitled "American Conference of Governmental Industrial Hygienists (ACGIH)," than the lowest TLV value previously modeled;
- b. changes in the composition of the materials, or use of new materials, that would result in an increase in emissions of any pollutant with a listed TLV that was proposed in the application and modeled; and
- c. physical changes to the emissions unit or its exhaust parameters (e.g., increased/ decreased exhaust flow, changes in stack height, changes in stack diameter, etc.).

If the permittee determines that the "Air Toxic Policy" will be satisfied for the above changes, the Ohio EPA will not consider the change(s) to be a "modification" under OAC rule 3745-31-01(VV)(1)(a)(ii), and a modification of the existing permit to install will not be required. If the change(s) is (are) defined as a modification under other provisions of the modification definition (other than (VV)(1)(a)(ii)), then the permittee shall obtain a final permit to install prior to the change.

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

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

**D. Reporting Requirements**

1. The permittee shall notify the Director (the appropriate Ohio EPA District Office or local air agency) in writing if a "photochemically reactive material" (as defined in OAC 3745-21-01 (C)(5)) is employed in the emissions unit . The notification shall include a copy of such record and shall be sent to the Director (the appropriate Ohio EPA District Office or local air agency) within 45 days after such an occurrence.
2. The permittee shall submit deviation (excursion) reports that identify any time periods when the emissions unit was in operation and the emissions from the emissions unit were not vented to the RTO thermal incinerator. Each report shall be submitted within 30 days after the deviation occurs.
3. The permittee shall submit deviation (excursion) reports which identify all 3-hour blocks of time during which the average combustion temperature within the RTO thermal incinerator does not comply with the temperature limitation specified above.
4. The permittee shall submit deviation (excursion) reports which identify all exceedances of the rolling, 12-month usage limitations for coatings, cleanup materials, and concentrated fountain solutions and the rolling 12-month emission limitations for OC, any individual HAP, and combined HAPs and, for the first 12 calendar months of operation following the issuance of this permit, all exceedances of the maximum allowable cumulative coating usage levels, cleanup material usage levels, concentrated fountain solution levels, emissions of any individual HAP levels, and emissions of combined HAPs levels.
5. The permittee shall notify the Director (the appropriate Ohio EPA District Office or local air agency) in writing if a coating or a concentrated fountain solution which exceeds the OC contents specified in section B.5 of these terms and conditions is employed in this emissions unit. The notification shall include a copy of such record and shall be sent to the Director (the appropriate Ohio EPA District Office or local air agency) within 30 days after such an occurrence.
6. The permittee shall notify the Director (the appropriate Ohio EPA District Office or local air agency) in writing if a fountain solution containing any alcohol is employed in this emissions unit. The notification shall include a copy of such record and shall be sent to the Director (the appropriate Ohio EPA District Office or local air agency) within 45 days after such an occurrence.
7. The permittee shall notify the Director (the appropriate Ohio EPA District Office or local air agency) in writing if a cleanup material that has a vapor pressure of 10 mm Hg or greater is employed in this emissions unit . The notification shall include a copy of such record and shall be sent to the Director (the appropriate Ohio EPA District Office or local air agency) within 45 days

after such an occurrence.

8. The permittee shall also submit annual reports which specify the total OC emissions from emissions units K001, K002, K003, K004, K005, K006, and K009 combined for the previous calendar year. These reports shall be submitted by January 31 of each year.
9. The deviation reports shall be submitted in accordance with the requirements specified in the General Terms and Conditions of this permit.

#### E. Testing Requirements

1. A demonstration of negative pressure differential for the dryer oven shall be conducted within 90 days of start-up of emissions unit K009 to confirm that the assumptions stated in sections C.4 and C.5 of these terms and conditions apply to this emissions unit. Such a demonstration shall be shown by either of the following methods:
  - a. By using a differential pressure gauge so that an inlet of the gauge is within the dryer and the other inlet is open to the ambient air in the pressroom. The differential pressure gauge may be a liquid column gauge or may be a mechanical type gauge. The differential pressure gauge shall be properly leveled and zeroed according to the manufacturer's instructions. If a mechanical type gauge is used, it should be calibrated according to the manufacturer's instructions against a liquid column gauge. (If a liquid column gauge is used, no calibration is necessary). The gauge should measure a pressure differential of at least 0.007 inches of water column whenever the press is operating to ensure that air is entering the dryer through all of the dryer's openings (excluding the exhaust stack). If a pressure gauge is to be permanently installed on the dryer, the location of the pressure tap within the dryer should not be modified without first consulting with the dryer manufacturer/installer. This is important since the manufacturer/installer may have used the pressure differential to set the exhaust rate for the dryer to ensure that the VOC concentration within the dryer remains below 25 percent of the lower explosive limit; or
  - b. By using smoke tubes, plastic flow indicating strips or other flow indicating devices approved by the field office in consultation with the Engineering Section to demonstrate that air flows into the dryer at all openings in the dryer (excluding the exhaust stack). All points measured with such devices should indicate airflow into the dryer.

If the testing fails to demonstrate negative pressure in the dryer oven, the assumptions detailed in sections C.4 and C.5 of these terms and conditions shall not apply, and an overall control efficiency of this emissions unit shall be based on capture efficiency testing as described in section E.2.e below.

2. The permittee shall conduct, or have conducted, emission testing for this emissions unit in

accordance with the following requirements:

- a. The emission testing shall be conducted within 90 days of start-up of emissions unit K009.
  - b. The emission testing shall be conducted to demonstrate compliance with the capture efficiency for OC (verify negative pressure in the dryer oven as described in Section E.1 above) and the control efficiency for OC and organic HAP.
  - c. The test method(s) which must be employed to demonstrate compliance with the control efficiency limitation for OC and organic HAP are specified below. Alternative U.S. EPA approved test methods may be used with prior approval from the Ohio EPA.
  - d. 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. 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.
  - e. If required, 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 USEPA's "Guidelines 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.)
  - f. The test(s) shall be conducted while the emissions unit is operating at or near its maximum capacity, unless otherwise specified or approved by the appropriate Ohio EPA District Office or local air agency.
3. Not later than 30 days prior to the proposed test date(s), the permittee shall submit an "Intent to Test" notification to the appropriate Ohio EPA District Office or local air agency. 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 District Office's or local air agency's refusal to accept the results of the emission test(s).
  4. Personnel from the appropriate Ohio EPA District Office or local air agency shall be permitted to witness the test(s), examine the testing equipment, and acquire data and information necessary to

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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.

5. 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 appropriate Ohio EPA District Office or local air agency within 30 days following completion of the test(s). The permittee may request additional time for the submittal of the written report, where warranted, with prior approval from the appropriate Ohio EPA District Office or local air agency.
6. Compliance with the emission limitations in sections A.1 and B.5 of these terms and conditions shall be determined in accordance with the following methods:

a. Emission Limitations:

OC content of 45.0%, by weight, for coatings

OC content of 15.0%, by weight, for concentrated fountain solutions

Applicable Compliance Method:

Formulation data or USEPA Method 24 (for coatings) or 24A (for flexographic and rotogravure printing inks and related coatings) shall be used to determine the organic compound contents of the coatings and concentrated fountain solutions.

b. Emission Limitation:

2.08 pounds of OC per hour for coatings and fountain solutions

Applicable Compliance Method:

Compliance shall be determined by the following equation:

$$[(\text{maximum coating usage, in pounds per hour}) \times (0.45^*) \times (0.8^{**}) \times (1-0.95^{***}) + (\text{maximum concentrated fountain solution usage, in pounds per hour}) \times (0.15^*) \times (1-(0.7^{**}) \times (0.95^{***}))]$$

\*Maximum allowable OC content for coatings and concentrated fountain solutions.

\*\*Per Ohio EPA Division of Air Pollution Control Engineering Section Engineer Guide #56 revised June 15, 1999, emission factors provided in the answer to question number 21.

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\*\*\*Minimum required control efficiency for the RTO thermal incinerator.

c. Emission Limitation:

0.4 pound of PE per hour

Applicable Compliance Method:

Stack testing may be required in the future in accordance with the test method(s) and procedures in OAC rule 3745-17-03(B)(10).

- d. Emission Limitation:
- 1.8 tons of PE per year
- Applicable Compliance Method:
- Multiply the allowable hourly emission limitation by 8760 hours per year, then divide by 2000 pounds per ton.
- e. Emission Limitations:
- dryer oven - 0.55 pound of CO per hour  
RTO thermal incinerator - 0.72 pound of CO per hour
- Applicable Compliance Method:
- Multiply the CO emission factor of 84 pounds of CO emissions per million cubic feet of natural gas by the maximum hourly natural gas usage. The CO emission factor is from AP-42, 5th edition, Table 1.4-1, dated 2/98.
- f. Emission Limitations:
- dryer oven - 2.4 tons of CO per year  
RTO thermal incinerator - 3.2 tons of CO per year
- Applicable Compliance Method:
- Multiply the allowable hourly emission limitation by 8760 hours per year, then divide by 2000 pounds per ton.
- g. Emission Limitations:
- dryer oven - 0.66 pound of NO<sub>x</sub> per hour  
RTO thermal incinerator - 0.86 pound of NO<sub>x</sub> per hour
- Applicable Compliance Method:
- Multiply the NO<sub>x</sub> emission factor of 100 pounds of NO<sub>x</sub> emissions per million cubic feet of natural gas by the maximum hourly natural gas usage. The NO<sub>x</sub> emission factor is from AP-42, 5th edition, Table 1.4-1, dated 2/98.

h. Emission Limitations:

dryer oven - 2.9 tons of NO<sub>x</sub> per year  
RTO thermal incinerator - 3.8 tons of NO<sub>x</sub> per year

Applicable Compliance Method:

Multiply the allowable hourly emission limitation by 8760 hours per year, then divide by 2000 pounds per ton.

i. Emission Limitations:

dryer oven - 0.07 pound of OC per hour  
RTO thermal incinerator - 0.10 pound of OC per hour

Applicable Compliance Method:

Multiply the OC emission factor of 11 pounds of OC emissions per million cubic feet of natural gas by the maximum yearly natural gas usage, and divide by 2000 lbs/ton. The OC emission factor is from AP-42, 5th edition, Table 1.4-2, dated 3/98.

j. Emission Limitations:

dryer oven - 0.3 ton of OC per year  
RTO thermal incinerator - 0.4 ton of OC per year

Applicable Compliance Method:

Multiply the allowable hourly emission limitation by 8760 hours per year, then divide by 2000 pounds per ton.

k. Emission Limitation:

20% opacity as a 6-minute average

Applicable Compliance Method:

OAC rule 3745-17-03(B)(1)

l. Emission Limitation:

The control efficiency of the RTO thermal incinerator shall be at least 95%, by weight for OC and organic HAP

Applicable Compliance Method:

Compliance with the control efficiency requirement shall be determined in accordance with the test methods and procedures specified in OAC rule 3745-21-10 as required in section E.2 of these terms and conditions.

m. Emission Limitation:

The emissions of OC from emissions units K001, K002, K003, K004, K005, K006, and K009 shall not exceed 48.3 tons per year, based upon a rolling, 12-month summation of the monthly emissions.

Applicable Compliance Method:

Compliance shall be demonstrated based upon the monthly record keeping as required by section C.4 of these terms and conditions. Formulation data or USEPA Method 24 (for coatings) or 24A (for flexographic and rotogravure printing inks and related coatings) shall be used to determine the organic compound contents of the coatings and concentrated fountain solutions.

n. Emission Limitations:

The emissions of any individual hazardous air pollutant (HAP) from emissions unit K001 through K009 shall not exceed 8.0 tons per year, based upon a rolling, 12-month summation of the monthly emissions.

The emissions of combined hazardous air pollutants (HAPs) from emissions units K001 through K009 shall not exceed 20.0 tons per year, based upon a rolling, 12-month summation of the monthly emissions.

Applicable Compliance Method:

Compliance shall be demonstrated based upon the monthly record keeping as required by section C.5 of these terms and conditions. Formulation data shall be used to determine the HAP contents of the non-heatset inks, aqueous coatings, coatings, concentrated fountain

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solutions, concentrated fountain etch solutions, fountain solution additives, and cleanup materials.

**F. Miscellaneous Requirements**

1. The terms and conditions in this Permit to Install 16-02284 shall supersede all the air pollution control requirements for K004 in Permit to Install 16-1815, issued on April 21, 1999.
2. The following terms and conditions of this permit are federally enforceable pursuant to OAC rule 3745-35-07: A.1, A.2.a, B.1, B.2, B.3, B.4, B.5, B.6, B.7, B.8, C.1, C.2, C.3, C.4, C.5, C.6, D.1, D.2, D.3, D.4, D.5, D.6, D.7, D.8, E.1, E.2, E.3, E.4, and E.5.

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

**A. Applicable Emissions Limitations and/or Control Requirements**

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

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/Requirements</u>
K005 - 8-Unit Harris M-600 Heatset Web Offset Printing Press No 209 - Harris Press No 209 (the terms and conditions in this permit supercede the terms and conditions in PTI 16-1815 issued April 21, 1999)Modified.	OAC rule 3745-31-05(A)(3)
	OAC rule 3745-17-07
	OAC rule 3745-17-11

OAC rule 3745-21-07(G)(2)

OAC rule 3745-35-07(B)

Applicable Emissions  
Limitations/Control Measures

2.44 pounds of organic compounds (OC) per hour for coatings and fountain solutions

0.4 pound of particulate emissions (PE) per hour (including combustion emissions)

1.8 tons of PE per year (including combustion emissions)

Natural gas combustion emissions from the RTO thermal incinerator shall not exceed the following:

0.72 pound of CO per hour and 3.2 tons of CO per year;

0.86 pound of NOx per hour and 3.8 tons of NOx per year; and

0.10 pound of OC per hour and 0.4 ton of OC per year.

Natural gas combustion emissions from the dryer oven shall not exceed the following:

0.93 pound of CO per hour and 4.1 tons of CO per year;

1.10 pounds of NOx per hour and 4.8 tons of NOx per year; and

0.12 pound of OC per hour and 0.5 ton of OC per year.

The requirements of this rule also include compliance with the requirements of OAC rule 3745-17-07 and OAC rule 3745-35-07.

Visible particulate emissions from any stack shall not exceed 20% opacity as a 6-minute average, except as provided by the rule.

The particulate emission limitation based on OAC rule 3745-17-11 is less stringent than the particulate emission limitation established in accordance with the best available technology requirements specified in OAC rule 3745-31-05.

Exempt. See B.1 below.

The control (destruction) efficiency of the RTO thermal incinerator shall be at least 95%, by weight for OC and organic HAP.

The emissions of OC from emissions units K001, K002, K003, K004, K005, K006, and K009 shall not exceed 48.3 tons per year, based upon a rolling, 12-month summation of the monthly emissions.

See B.5 below.

The emissions of any individual hazardous air pollutant (HAP) from emissions units K001 through K009 shall not exceed 8.0 tons per year, based upon a rolling, 12-month

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summation of the monthly emissions.

The emissions of combined hazardous air pollutants (HAPs) from emissions units K001 through K009 shall not exceed 20.0 tons per year, based upon a rolling, 12-month summation of the monthly emissions.

See A.2.a below.

## **2. Additional Terms and Conditions**

- 2.a** To ensure enforceability during the first 12 calendar months of operation following the issuance of this permit, the permittee shall not exceed the emission levels specified in the following table:

<u>Month(s)</u>	<u>Maximum Allowable Cumulative Emissions of Any Individual HAP (Tons)</u>	<u>Maximum Allowable Cumulative Emissions of Combined HAPs (Tons)</u>
1	0.7	1.7
1-2	1.3	3.3
1-3	2.0	5.0
1-4	2.7	6.7
1-5	3.3	8.3
1-6	4.0	10.0
1-7	4.7	11.7
1-8	5.3	13.3
1-9	6.0	15.0
1-10	6.7	16.7
1-11	7.3	18.3
1-12	8.0	20.0

After the first 12 calendar months of operation following the issuance of this permit, compliance with the annual emission limitations for any individual HAP and combined HAPs shall be based upon a rolling, 12-month summation of the monthly emissions.

- 2.b** The hourly OC emission limitation regulated per OAC rule 3745-31-05(A)(3) is based on the emissions unit's potential to emit. Therefore, no record keeping or reporting is

required to demonstrate compliance with this limit.

However, if any proposed change(s), such as with production capacity, the types and/or quantities of materials used or processed, or anything else that increases the potential emissions of any air pollutant, then the permittee shall apply for and obtain either a modification to the permit to install or a new final permit to install prior to the change(s).

- 2.c** The hourly and annual CO, NOx, and OC emission limitations from natural gas combustion and the hourly and annual PE emissions limitations regulated per OAC rule 3745-31-05(A)(3) are based on the emissions unit's potential to emit. Therefore, no record keeping or reporting is required to demonstrate compliance with these limits.

**B. Operational Restrictions**

1. The permittee shall not employ any photochemically reactive materials, as defined in OAC rule 3745-21-01(C)(5), in this emissions unit. This determination shall be made based on the actual formulation of the materials after any final in-plant reducing or thinning and prior to application of the materials.
2. The OC and organic HAP emissions from this emissions unit shall be vented to the RTO thermal incinerator when the emissions unit is in operation.
3. The average combustion temperature within the RTO thermal incinerator, for any 3-hour block of time, shall not be more than 50 degrees Fahrenheit below the average temperature during the most recent emission test that demonstrated the emissions unit(s) was (were) in compliance.
4. The maximum annual coating usage, cleanup material usage, and concentrated fountain solution usage for emissions units K001, K002, K003, K004, K005, K006, and K009 shall not exceed 2,200,000 pounds per year, 91,080 pounds per year, and 228,253 pounds per year, respectively, based upon a rolling, 12-month summation of the usage figures. The usage limitations result in a 48.3 tons of organic compounds (OC) per year emission limitation for K001 through K006 and K009. The OC content of the coatings and the concentrated fountain solutions employed shall not exceed 45.0% by weight and 15.0% by weight, respectively.

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

<u>Month(s)</u>	<u>Maximum Allowable Cumulative Coating Usage (pounds)</u>	<u>Maximum Allowable Cumulative Cleanup Material Usage (pounds)</u>	<u>Maximum Allowable Cumulative Concentrated Fountain Solution Usage (pounds)</u>
1	183,333	7,590	19,021

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1-2	366,667	15,180	38,042
1-3	550,000	22,770	57,063
1-4	733,333	30,360	76,084
1-5	916,667	37,950	95,105
1-6	1,100,000	45,540	114,127
1-7	1,283,333	53,130	133,148
1-8	1,466,667	60,720	152,169
1-9	1,650,000	68,310	171,190
1-10	1,866,333	75,900	190,211
1-11	2,016,677	83,490	209,232
1-12	2,200,000	91,080	228,253

After the first 12 calendar months of operation following the issuance of this permit, compliance with the annual usage limitations shall be based upon a rolling, 12-month summation of the usage figures.

5. The permittee shall only employ cleanup materials that have a vapor pressure that is less than 10 mm Hg at 20 degrees Celsius (68 degrees Fahrenheit). The permittee shall store the cleanup cloths in closed containers.
6. The dryer oven for this emissions unit shall only employ natural gas.
7. The permittee shall not employ fountain solutions that contain alcohol in this emissions unit.
8. The permittee shall only employ automatic blanket wash cleanup that contains no organic solvent in this emissions unit. Only the manual cleanup material can contain organic solvents.

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

1. The permittee shall maintain the following information for this emissions unit:
  - a. the MSDS sheets for each liquid organic material employed;
  - b. documentation as to whether or not each material is a photochemically reactive material; and
  - c. for materials that are reduced or thinned prior to application, documentation as to whether or not the resulting material is a photochemically reactive material.
2. The permittee shall maintain the following information for this emissions unit:

- a. the MSDS sheets for each fountain solution employed; and
  - b. documentation as to whether or not each fountain solution contains any alcohol.
3. The permittee shall maintain documentation of the vapor pressure, in millimeters of mercury at 20 degrees Celsius (68 degrees Fahrenheit) for each cleanup material employed.
4. The permittee shall collect and record the following information monthly for emissions units K001, K002, K003, K004, K005, K006, and K009:
- a. the company identification for each coating, concentrated fountain solution, and cleanup material employed;
  - b. the amount of each coating, concentrated fountain solution, and cleanup employed, in pounds;
  - c. the total amount of all coatings, all concentrated fountain solutions, and all cleanup materials employed, in pounds;
  - d. the OC content of each coating, concentrated fountain solution, and cleanup material employed, in weight percent;
  - e. the total uncontrolled OC emission rate from all coatings employed, in pounds per month (i.e., [(c)x(the worst-case OC content in weight percent of all the coatings employed in the month)/100] or the sum of [(b)x(d)/100] for each coating employed);
  - f. the total controlled OC emission rate from all coatings employed, in tons per month (i.e., [(0.80)x(e)x(1-destruction efficiency\*)]\*\*, and then divided by 2000);
  - g. the total uncontrolled OC emission rate from all concentrated fountain solutions employed, in pounds per month (i.e., the sum of [(b)x(d)/100] for each concentrated fountain solution employed);
  - h. the total controlled OC emission rate from all concentrated fountain solutions employed, in tons per month (i.e., [(g)x(1- (0.7) x destruction efficiency\*)]\*\*, and then divided by 2000);
  - i. the total controlled OC emission rate from all cleanup materials employed, in tons per month (i.e., the sum of (0.5)x(b)x(d)\*\* for each cleanup material employed, and then divided by 2000);

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- j. the total OC emission rate from the emissions units K001, K002, K003, K004, K005, K006, and K009, in tons per month (i.e., [(f)+(h)+(i)]).
- k. beginning after the first 12 calendar months of operation following the issuance of this permit, the rolling, 12-month summations of the coating usage figures, concentrated fountain solution usage figures, cleanup material usage figures, and OC emissions for each month, in pounds or tons; and
- l. during the first 12 calendar months of operation following the issuance of this permit, the permittee shall record the cumulative coating usage, concentrated fountain solution usage, and cleanup material usage for each month, in pounds.

\* The permittee shall use the destruction efficiency from the most recent performance test that demonstrated that the emissions unit(s) was (were) in compliance.

\*\*Per Ohio EPA Division of Air Pollution Control Engineering Section Engineer Guide #56 revised June 15, 1999 and based on a successful demonstration of negative pressure in the dryer oven in accordance with section E.1 of the testing requirements, the following assumptions shall be used in calculating the OC emissions: 20 percent, by weight, of the solvent in the coatings is retained in the web or substrate and the remaining 80 percent, by weight, is vented to the incinerator; 30 percent, by weight, of the fountain solution emissions are fugitive and the remaining 70 percent, by weight, is vented to the incinerator for fountain solutions containing only alcohol substitutes; and 50 percent, by weight, of the manual cleanup material is retained in the cleanup cloths and the remaining 50 percent, by weight, is fugitive emissions if the solvent has a vapor pressure of 10 mm Hg or lower at 20 degrees Celsius (68 degrees Fahrenheit).

- 5. The permittee shall collect and record the following information monthly for emissions units K001 through K009:
  - a. For emissions units K001, K002, K003, K004, K005, K006, and K009:
    - i. the company identification for each coating, concentrated fountain solution, and cleanup material employed;
    - ii. the amount of each coating, concentrated fountain solution, and cleanup employed, in pounds;
    - iii. the individual HAP content of each HAP of each coating, concentrated fountain solution, and cleanup material employed, in weight percent;

- iv. the combined HAPs content of each coating, concentrated fountain solution, and cleanup material employed (the sum of all the individual HAP contents in (iii)), in weight percent;
- v. the uncontrolled individual HAP emission rate for each HAP from all coatings employed, in pounds per month (i.e., the sum of  $[(ii) \times (iii) / 100]$  for each HAP for each coating employed);
- vi. the controlled individual HAP emission rate for each HAP from all coatings employed, in tons per month (i.e.,  $[(0.80) \times (v) \times (1 - \text{destruction efficiency}^*)]^{**}$ , and then divided by 2000 for each HAP);
- vii. the uncontrolled combined HAPs emission rate from all coatings employed, in pounds per month (i.e., the sum of  $[(ii) \times (iv) / 100]$  for each coating employed);
- viii. the controlled combined HAPs emission rate for each HAP from all coatings employed, in tons per month (i.e.,  $[(0.80) \times (vii) \times (1 - \text{destruction efficiency}^*)]^{**}$ , and then divided by 2000);
- ix. the uncontrolled individual HAP emission rate for each HAP from all concentrated fountain solutions employed, in pounds per month (i.e., the sum of  $[(ii) \times (iii) / 100]$  for each HAP for each fountain solution employed);
- x. the controlled individual HAP emission rate for each HAP from all concentrated fountain solutions employed, in tons per month (i.e.,  $[(ix) \times [1 - (0.7) \times \text{destruction efficiency}^*]]^{**}$ , and then divided by 2000 for each HAP);
- xi. the uncontrolled combined HAPs emission rate from all concentrated fountain solutions employed, in pounds per month (i.e., the sum of  $[(ii) \times (iv) / 100]$  for each fountain solution employed);
- xii. the controlled combined HAPs emission rate from all concentrated fountain solutions employed, in tons per month (i.e.,  $[(xi) \times [1 - (0.7) \times \text{destruction efficiency}^*]]^{**}$ , and then divided by 2000);
- xiii. the controlled individual HAP emission rate for each HAP from all cleanup materials employed, in tons per month (i.e., the sum of  $(0.5) \times (ii) \times (iii)^{**}$  for each HAP for each cleanup material employed, and then divided by 2000);
- xiv. the controlled combined HAPs emission rate from all cleanup materials employed, in tons per month (i.e., the sum of  $(0.5) \times (ii) \times (iv)^{**}$  for each cleanup material

- employed, and then divided by 2000);
- xv. the individual HAP emission rate for each HAP from all cleanup materials, all concentrated fountain solutions, and all coatings employed, in tons per month (i.e., [(vi)+(x)+(xiii) for each HAP]); and
  - xvi. the combined HAPs emission rate from all cleanup materials, all concentrated fountain solutions, and all coatings employed, in tons per month (i.e., [(viii)+(xii)+(xiv)]).
- b. For emissions units K007 and K008:
- i. the company identification for each non-heatset ink, aqueous coating, concentrated fountain etch solution, fountain solution additive, manual cleanup material, and automatic cleanup material employed;
  - ii. the amount of each non-heatset ink, aqueous coating, concentrated fountain etch solution, fountain solution additive, manual cleanup material, and automatic cleanup material employed, in pounds;
  - iii. the individual HAP content of each HAP of each non-heatset ink, aqueous coating, concentrated fountain etch solution, fountain solution additive, manual cleanup material, and automatic cleanup material employed, in weight percent;
  - iv. the combined HAPs content of each non-heatset ink, aqueous coating, concentrated fountain etch solution, fountain solution additive, manual cleanup material, and automatic cleanup material employed (the sum of all the individual HAP contents in (iii)), in weight percent;
  - v. the individual HAP emission rate for each HAP from all non-heatset inks employed, in tons (i.e., the sum of [(ii) x (iii)/100] x 0.05\*\*\* for each HAP for each non-heatset ink employed, and then divided by 2000);
  - vi. the combined HAPs emission rate from all non-heatset inks employed, in tons (i.e., the sum of [(ii) x (iv)/100] x 0.05\*\*\* for each non-heatset ink employed, and then divided by 2000);
  - vii. the individual HAP emission rate for each HAP from all aqueous coatings employed, in tons (i.e., the sum of [(ii) x (iii)/100] for each HAP for each aqueous coating employed, and then divided by 2000);

- viii. the combined HAPs emission rate from all aqueous coatings employed, in tons (i.e., the sum of [(ii) x (iv)/100] for each aqueous coating employed, and then divided by 2000);
- ix. the individual HAP emission rate for each HAP from all concentrated fountain etch solutions employed, in tons (i.e., the sum of [(ii) x (iii)/100] for each HAP for each concentrated fountain etch solution employed, and then divided by 2000);
- x. the combined HAPs emission rate from all concentrated fountain etch solutions employed, in tons (i.e., the sum of [(ii) x (iv)/100] for each concentrated fountain etch solution employed, and then divided by 2000);
- xi. the individual HAP emission rate for each HAP from all fountain solution additives employed, in tons (i.e., the sum of [(ii) x (iii)/100] for each HAP for each fountain solution additive employed, and then divided by 2000);
- xii. the combined HAPs emission rate from all fountain solution additives employed, in tons (i.e., the sum of [(ii) x (iv)/100] for each fountain solution additive employed, and then divided by 2000);
- xiii. the individual HAP emission rate for each HAP from all manual cleanup materials employed, in tons (i.e., the sum of [(ii) x (iii)/100] x 0.5\*\*\*\* for each HAP for each manual cleanup material employed, and then divided by 2000);
- xiv. the combined HAPs emission rate from all manual cleanup materials employed, in tons (i.e., the sum of [(ii) x (iv)/100] x 0.5\*\*\*\* for each manual cleanup material employed, and then divided by 2000);
- xv. the individual HAP emission rate for each HAP from all automatic cleanup materials employed, in tons (i.e., the sum of [(ii) x (iii)/100] for each HAP for each automatic cleanup material employed, and then divided by 2000);
- xvi. the combined HAPs emission rate from all automatic cleanup materials employed, in tons (i.e., the sum of [(ii) x (iv)/100] for each automatic cleanup material employed, and then divided by 2000);
- xvii. the individual HAP emission rate for each HAP from all non-heatset ink, all aqueous coating, all concentrated fountain etch solution, all fountain solution additive, all manual cleanup material, and all automatic cleanup material employed, in tons per month ( i.e., [(v) + (vii) + (ix) + (xi) + (xiii) + (xv)] for each HAP); and

- xviii. the combined HAPs emission rate from all non-heatset ink, all aqueous coating, all concentrated fountain etch solution, all fountain solution additive, all manual cleanup material, and all automatic cleanup material employed, in tons per month (i.e., [(vi) + (viii) + (x) + (xii) + (xiv) + (xvi)]).
- c. For emissions unit K001 through K009:
- i. the total individual HAP emission rate for each HAP, in tons per month (i.e., (4.a.xv) + (4.b.xvii) for each HAP);
  - ii. the total combined HAPs emission rate, in tons per month (i.e., (4.a.xvi) + (4.b.xviii));
  - iii. beginning after the first 12 calendar months of operation following the issuance of this permit, the rolling, 12-month summations of individual HAP emissions for each HAP and of combined HAPs emissions for each month, in tons; and
  - iv. during the first 12 calendar months of operation following the issuance of this permit, the permittee shall record the cumulative emissions of individual HAP for each HAP and the cumulative emissions of combined HAPs for each month, in tons;
  - v. during the first 12 calendar months of operation following the issuance of this permit if the cumulative emissions of combined HAPs for each month are less than or equal to the allowable cumulative emissions of any individual HAP for each month, then cumulative emissions for each individual HAP do not need to be calculated; and
  - vi. beginning after the first 12 calendar months of operation following the issuance of this permit if the rolling, 12-month summation of combined HAPs is 8.0 tons per year or less for each month, then the rolling, 12-month summations of each individual HAP do not need to be calculated unless any subsequent rolling, 12-month summation exceeds 8.0 tons per year.

\* The permittee shall use the destruction efficiency from the most recent performance test that demonstrated that the emissions unit(s) was (were) in compliance.

\*\*Per Ohio EPA Division of Air Pollution Control Engineering Section Engineer Guide #56 revised June 15, 1999 and based on a successful demonstration of negative pressure in the dryer ovens, the following assumptions shall be used in calculating the HAP emissions:

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20 percent, by weight, of the solvent in the coatings is retained in the web or substrate and the remaining 80 percent, by weight, is vented to the incinerator; 30 percent, by weight, of the fountain solution emissions are fugitive and the remaining 70 percent, by weight, is vented to the incinerator for fountain solutions containing only alcohol substitutes; and 50 percent, by weight, of the manual cleanup material is retained in the cleanup cloths and the remaining 50 percent, by weight, is fugitive emissions if the solvent has a vapor pressure of 10 mm Hg or lower at 20 degrees Celsius (68 degrees Fahrenheit).

\*\*\*Ohio EPA, Division of Air Pollution Control, Engineering Section, Engineering Guide #68 (dated July 7, 1997) states that only 5% of the ink solvent is emitted from non-heatset inks.

\*\*\*\*Ohio EPA, Division of Air Pollution Control, Engineering Section, Engineering Guide #68 (dated July 7, 1997) states 50% of the solvent is retained in the shop towel and 50% is emitted for cleanup solvents which have a composite vapor pressure less than 10 millimeters of mercury at 20 degrees Celsius.

6. The permittee shall operate and maintain a continuous temperature monitor and recorder which measures and records the combustion temperature within the RTO 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.

The permittee shall collect and record the following information for each day:

- a. all 3-hour blocks of time during which the average combustion temperature within the RTO thermal incinerator, when the emissions unit was in operation, was more than 50 degrees Fahrenheit below the average temperature during the most recent emission test that demonstrated the emissions unit was in compliance; and
  - b. a log of the downtime for the capture (collection) system, control device, and monitoring equipment, when the associated emissions unit was in operation.
7. The permit to install for this emissions unit (K005) was evaluated based on the actual materials (typically coatings and cleanup materials) and the design parameters of the emissions unit's exhaust system, as specified by the permittee in the permit to install application. The Ohio EPA's "Review of New Sources of Air Toxic Emissions" policy ("Air Toxic Policy") was applied for each pollutant emitted by this emissions unit using data from the permit to install application and the SCREEN 3.0 model (or other Ohio EPA approved model). The predicted 1-hour maximum ground-level concentration from the use of the SCREEN 3.0 model was compared to the Maximum Acceptable Ground-Level Concentration (MAGLC). The following summarizes the

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

Pollutant: ethylene glycol n-butyl ether

TLV (mg/m<sup>3</sup>): 97

Maximum Hourly Emission Rate (lbs/hr): 1.66\*

Predicted 1-Hour Maximum Ground-Level  
Concentration (ug/m<sup>3</sup>): 320.0

MAGLC (ug/m<sup>3</sup>): 2309.5

Pollutant: ethylene glycol

TLV (mg/m<sup>3</sup>): 73

Maximum Hourly Emission Rate (lbs/hr): 1.06\*

Predicted 1-Hour Maximum Ground-Level  
Concentration (ug/m<sup>3</sup>): 192.6

MAGLC (ug/m<sup>3</sup>): 1738.1

Pollutant: petroleum naphtha

TLV (mg/m<sup>3</sup>): 525

Maximum Hourly Emission Rate (lbs/hr): 8.27\*\*

Predicted 1-Hour Maximum Ground-Level  
Concentration (ug/m<sup>3</sup>): 1661

MAGLC (ug/m<sup>3</sup>): 12500

\*Maximum emission rate from emissions units K001 through K009.

\*\*Maximum emission rate from emissions units K001 through K006 and K009.

Physical changes to or changes in the method of operation of the emissions unit after its

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

- a. changes in the composition of the materials used (typically for coatings or cleanup materials), or the use of new materials, that would result in the emission of a compound with a lower Threshold Limit Value (TLV), as indicated in the most recent version of the handbook entitled "American Conference of Governmental Industrial Hygienists (ACGIH)," than the lowest TLV value previously modeled;
- b. changes in the composition of the materials, or use of new materials, that would result in an increase in emissions of any pollutant with a listed TLV that was proposed in the application and modeled; and
- c. physical changes to the emissions unit or its exhaust parameters (e.g., increased/ decreased exhaust flow, changes in stack height, changes in stack diameter, etc.).

If the permittee determines that the "Air Toxic Policy" will be satisfied for the above changes, the Ohio EPA will not consider the change(s) to be a "modification" under OAC rule 3745-31-01(VV)(1)(a)(ii), and a modification of the existing permit to install will not be required. If the change(s) is (are) defined as a modification under other provisions of the modification definition (other than (VV)(1)(a)(ii)), then the permittee shall obtain a final permit to install prior to the change.

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

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

**D. Reporting Requirements**

1. The permittee shall notify the Director (the appropriate Ohio EPA District Office or local air agency) in writing if a "photochemically reactive material" (as defined in OAC 3745-21-01 (C)(5)) is employed in the emissions unit . The notification shall include a copy of such record and shall be sent to the Director (the appropriate Ohio EPA District Office or local air agency) within 45 days after such an occurrence.
2. The permittee shall submit deviation (excursion) reports that identify any time periods when the emissions unit was in operation and the emissions from the emissions unit were not vented to the RTO thermal incinerator. Each report shall be submitted within 30 days after the deviation occurs.
3. The permittee shall submit deviation (excursion) reports which identify all 3-hour blocks of time during which the average combustion temperature within the RTO thermal incinerator does not comply with the temperature limitation specified above.
4. The permittee shall submit deviation (excursion) reports which identify all exceedances of the rolling, 12-month usage limitations for coatings, cleanup materials, and concentrated fountain solutions and the rolling 12-month emission limitations for OC, any individual HAP, and combined HAPs and, for the first 12 calendar months of operation following the issuance of this permit, all exceedances of the maximum allowable cumulative coating usage levels, cleanup material usage levels, concentrated fountain solution levels, emissions of any individual HAP levels, and emissions of combined HAPs levels.
5. The permittee shall notify the Director (the appropriate Ohio EPA District Office or local air agency) in writing if a coating or a concentrated fountain solution which exceeds the OC contents specified in section B.5 of these terms and conditions is employed in this emissions unit. The notification shall include a copy of such record and shall be sent to the Director (the appropriate Ohio EPA District Office or local air agency) within 30 days after such an occurrence.
6. The permittee shall notify the Director (the appropriate Ohio EPA District Office or local air agency) in writing if a fountain solution containing any alcohol is employed in this emissions unit. The notification shall include a copy of such record and shall be sent to the Director (the appropriate Ohio EPA District Office or local air agency) within 45 days after such an occurrence.
7. The permittee shall notify the Director (the appropriate Ohio EPA District Office or local air agency) in writing if a cleanup material that has a vapor pressure of 10 mm Hg or greater is employed in this emissions unit . The notification shall include a copy of such record and shall be sent to the Director (the appropriate Ohio EPA District Office or local air agency) within 45 days

after such an occurrence.

8. The permittee shall also submit annual reports which specify the total OC emissions from emissions units K001, K002, K003, K004, K005, K006, and K009 combined for the previous calendar year. These reports shall be submitted by January 31 of each year.
9. The deviation reports shall be submitted in accordance with the requirements specified in the General Terms and Conditions of this permit.

#### E. Testing Requirements

1. A demonstration of negative pressure differential for the dryer oven shall be conducted within 90 days of start-up of emissions unit K009 to confirm that the assumptions stated in sections C.4 and C.5 of these terms and conditions apply to this emissions unit. Such a demonstration shall be shown by either of the following methods:
  - a. By using a differential pressure gauge so that an inlet of the gauge is within the dryer and the other inlet is open to the ambient air in the pressroom. The differential pressure gauge may be a liquid column gauge or may be a mechanical type gauge. The differential pressure gauge shall be properly leveled and zeroed according to the manufacturer's instructions. If a mechanical type gauge is used, it should be calibrated according to the manufacturer's instructions against a liquid column gauge. (If a liquid column gauge is used, no calibration is necessary). The gauge should measure a pressure differential of at least 0.007 inches of water column whenever the press is operating to ensure that air is entering the dryer through all of the dryer's openings (excluding the exhaust stack). If a pressure gauge is to be permanently installed on the dryer, the location of the pressure tap within the dryer should not be modified without first consulting with the dryer manufacturer/installer. This is important since the manufacturer/installer may have used the pressure differential to set the exhaust rate for the dryer to ensure that the VOC concentration within the dryer remains below 25 percent of the lower explosive limit; or
  - b. By using smoke tubes, plastic flow indicating strips or other flow indicating devices approved by the field office in consultation with the Engineering Section to demonstrate that air flows into the dryer at all openings in the dryer (excluding the exhaust stack). All points measured with such devices should indicate airflow into the dryer.

If the testing fails to demonstrate negative pressure in the dryer oven, the assumptions detailed in sections C.4 and C.5 of these terms and conditions shall not apply, and an overall control efficiency of this emissions unit shall be based on capture efficiency testing as described in section E.2.e below.

2. The permittee shall conduct, or have conducted, emission testing for this emissions unit in

accordance with the following requirements:

- a. The emission testing shall be conducted within 90 days of start-up of emissions unit K009.
  - b. The emission testing shall be conducted to demonstrate compliance with the capture efficiency for OC (verify negative pressure in the dryer oven as described in Section E.1 above) and the control efficiency for OC and organic HAP.
  - c. The test method(s) which must be employed to demonstrate compliance with the control efficiency limitation for OC and organic HAP are specified below. Alternative U.S. EPA approved test methods may be used with prior approval from the Ohio EPA.
  - d. 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. 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.
  - e. If required, 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 USEPA's "Guidelines 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.)
  - f. The test(s) shall be conducted while the emissions unit is operating at or near its maximum capacity, unless otherwise specified or approved by the appropriate Ohio EPA District Office or local air agency.
3. Not later than 30 days prior to the proposed test date(s), the permittee shall submit an "Intent to Test" notification to the appropriate Ohio EPA District Office or local air agency. 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 District Office's or local air agency's refusal to accept the results of the emission test(s).
  4. Personnel from the appropriate Ohio EPA District Office or local air agency shall be permitted to witness the test(s), examine the testing equipment, and acquire data and information necessary to

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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.

5. 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 appropriate Ohio EPA District Office or local air agency within 30 days following completion of the test(s). The permittee may request additional time for the submittal of the written report, where warranted, with prior approval from the appropriate Ohio EPA District Office or local air agency.
6. Compliance with the emission limitations in sections A.1 and B.5 of these terms and conditions shall be determined in accordance with the following methods:

a. Emission Limitations:

OC content of 45.0%, by weight, for coatings

OC content of 15.0%, by weight, for concentrated fountain solutions

Applicable Compliance Method:

Formulation data or USEPA Method 24 (for coatings) or 24A (for flexographic and rotogravure printing inks and related coatings) shall be used to determine the organic compound contents of the coatings and concentrated fountain solutions.

b. Emission Limitation:

2.44 pounds of OC per hour for coatings and fountain solutions

Applicable Compliance Method:

Compliance shall be determined by the following equation:

$$[(\text{maximum coating usage, in pounds per hour}) \times (0.45^*) \times (0.8^{**}) \times (1-0.95^{***}) + (\text{maximum concentrated fountain solution usage, in pounds per hour}) \times (0.15^*) \times (1-(0.7^{**}) \times (0.95^{***}))]$$

\*Maximum allowable OC content for coatings and concentrated fountain solutions.

\*\*Per Ohio EPA Division of Air Pollution Control Engineering Section Engineer Guide #56 revised June 15, 1999, emission factors provided in the answer to question number 21.

\*\*\*Minimum required control efficiency for the RTO thermal incinerator.

c. Emission Limitation:

0.4 pound of PE per hour

Applicable Compliance Method:

Stack testing may be required in the future in accordance with the test method(s) and procedures in OAC rule 3745-17-03(B)(10).

- d. Emission Limitation:
- 1.8 tons of PE per year
- Applicable Compliance Method:
- Multiply the allowable hourly emission limitation by 8760 hours per year, then divide by 2000 pounds per ton.
- e. Emission Limitations:
- dryer oven - 0.93 pound of CO per hour  
RTO thermal incinerator - 0.72 pound of CO per hour
- Applicable Compliance Method:
- Multiply the CO emission factor of 84 pounds of CO emissions per million cubic feet of natural gas by the maximum hourly natural gas usage. The CO emission factor is from AP-42, 5th edition, Table 1.4-1, dated 2/98.
- f. Emission Limitations:
- dryer oven - 4.1 tons of CO per year  
RTO thermal incinerator - 3.2 tons of CO per year
- Applicable Compliance Method:
- Multiply the allowable hourly emission limitation by 8760 hours per year, then divide by 2000 pounds per ton.
- g. Emission Limitations:
- dryer oven - 1.10 pounds of NO<sub>x</sub> per hour  
RTO thermal incinerator - 0.86 pound of NO<sub>x</sub> per hour
- Applicable Compliance Method:
- Multiply the NO<sub>x</sub> emission factor of 100 pounds of NO<sub>x</sub> emissions per million cubic feet of natural gas by the maximum hourly natural gas usage. The NO<sub>x</sub> emission factor is from AP-42, 5th edition, Table 1.4-1, dated 2/98.

h. Emission Limitations:

dryer oven - 4.8 tons of NO<sub>x</sub> per year  
RTO thermal incinerator - 3.8 tons of NO<sub>x</sub> per year

Applicable Compliance Method:

Multiply the allowable hourly emission limitation by 8760 hours per year, then divide by 2000 pounds per ton.

i. Emission Limitations:

dryer oven - 0.12 pound of OC per hour  
RTO thermal incinerator - 0.10 pound of OC per hour

Applicable Compliance Method:

Multiply the OC emission factor of 11 pounds of OC emissions per million cubic feet of natural gas by the maximum yearly natural gas usage, and divide by 2000 lbs/ton. The OC emission factor is from AP-42, 5th edition, Table 1.4-2, dated 3/98.

j. Emission Limitations:

dryer oven - 0.5 ton of OC per year  
RTO thermal incinerator - 0.4 ton of OC per year

Applicable Compliance Method:

Multiply the allowable hourly emission limitation by 8760 hours per year, then divide by 2000 pounds per ton.

k. Emission Limitation:

20% opacity as a 6-minute average

Applicable Compliance Method:

OAC rule 3745-17-03(B)(1)

l. Emission Limitation:

The control efficiency of the RTO thermal incinerator shall be at least 95%, by weight for OC and organic HAP

Applicable Compliance Method:

Compliance with the control efficiency requirement shall be determined in accordance with the test methods and procedures specified in OAC rule 3745-21-10 as required in section E.2 of these terms and conditions.

m. Emission Limitation:

The emissions of OC from emissions units K001, K002, K003, K004, K005, K006, and K009 shall not exceed 48.3 tons per year, based upon a rolling, 12-month summation of the monthly emissions.

Applicable Compliance Method:

Compliance shall be demonstrated based upon the monthly record keeping as required by section C.4 of these terms and conditions. Formulation data or USEPA Method 24 (for coatings) or 24A (for flexographic and rotogravure printing inks and related coatings) shall be used to determine the organic compound contents of the coatings and concentrated fountain solutions.

n. Emission Limitations:

The emissions of any individual hazardous air pollutant (HAP) from emissions unit K001 through K009 shall not exceed 8.0 tons per year, based upon a rolling, 12-month summation of the monthly emissions.

The emissions of combined hazardous air pollutants (HAPs) from emissions units K001 through K009 shall not exceed 20.0 tons per year, based upon a rolling, 12-month summation of the monthly emissions.

Applicable Compliance Method:

Compliance shall be demonstrated based upon the monthly record keeping as required by section C.5 of these terms and conditions. Formulation data shall be used to determine the HAP contents of the non-heatset inks, aqueous coatings, coatings, concentrated fountain

solutions, concentrated fountain etch solutions, fountain solution additives, and cleanup materials.

#### **F. Miscellaneous Requirements**

1. The terms and conditions in this Permit to Install 16-02284 shall supersede all the air pollution control requirements for K005 in Permit to Install 16-1815, issued on April 21, 1999.
2. The following terms and conditions of this permit are federally enforceable pursuant to OAC rule 3745-35-07: A.1, A.2.a, B.1, B.2, B.3, B.4, B.5, B.6, B.7, B.8, C.1, C.2, C.3, C.4, C.5, C.6, D.1, D.2, D.3, D.4, D.5, D.6, D.7, D.8, E.1, E.2, E.3, E.4, and E.5.



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PTI A

Modification Issued: 2/26/2004

Emissions Unit ID: K006

Applicable Emissions  
Limitations/Control Measures

0.58 pound of organic compounds (OC) per hour for coatings and fountain solutions

2.4 tons of PE per year (including combustion emissions)

Natural gas combustion emissions from RTO thermal incinerator #2 shall not exceed the following:

0.72 pound of CO per hour and 3.2 tons of CO per year;

0.86 pound of NOx per hour and 3.8 tons of NOx per year; and

0.10 pound of OC per hour and 0.4 ton of OC per year.

Natural gas combustion emissions from the dryer oven shall not exceed the following:

0.40 pound of CO per hour and 1.75 tons of CO per year;

0.47 pound of NOx per hour and 2.1 tons of NOx per year; and

0.05 pound of OC per hour and 0.2 ton of OC per year.

The requirements of this rule also include compliance with the requirements of OAC rule

3745-17-07, OAC rule 3745-17-11, and OAC rule 3745-35-07.

Visible particulate emissions from any stack shall not exceed 20% opacity as a 6-minute average, except as provided by the rule.

0.551 pound of particulate emissions (PE) per hour (including combustion emissions)

Exempt. See B.1 below.

The control (destruction) efficiency of the RTO thermal incinerator shall be at least 95%, by weight for OC and organic HAP.

The emissions of OC from emissions units K001, K002, K003, K004, K005, K006, and K009 shall not exceed 48.3 tons per year, based upon a rolling, 12-month summation of the monthly emissions.

See B.5 below.

The emissions of any individual hazardous air pollutant (HAP) from emissions units K001 through K009 shall not exceed 8.0 tons per year, based upon a rolling, 12-month summation of the monthly emissions.

The emissions of combined hazardous air pollutants (HAPs) from emissions units K001 through K009 shall not exceed 20.0 tons per

year, based upon a rolling, 12-month summation of the monthly emissions.

See A.2.a below.

## 2. Additional Terms and Conditions

- 2.a** To ensure enforceability during the first 12 calendar months of operation following the issuance of this permit, the permittee shall not exceed the emission levels specified in the following table:

<u>Month(s)</u>	<u>Maximum Allowable Cumulative Emissions of Any Individual HAP (Tons)</u>	<u>Maximum Allowable Cumulative Emissions of Combined HAPs (Tons)</u>
1	0.7	1.7
1-2	1.3	3.3
1-3	2.0	5.0
1-4	2.7	6.7
1-5	3.3	8.3
1-6	4.0	10.0
1-7	4.7	11.7
1-8	5.3	13.3
1-9	6.0	15.0
1-10	6.7	16.7
1-11	7.3	18.3
1-12	8.0	20.0

After the first 12 calendar months of operation following the issuance of this permit, compliance with the annual emission limitations for any individual HAP and combined HAPs shall be based upon a rolling, 12-month summation of the monthly emissions.

- 2.b** The hourly OC emission limitation regulated per OAC rule 3745-31-05(A)(3) is based on the emissions unit's potential to emit. Therefore, no record keeping or reporting is required to demonstrate compliance with this limit.

However, if any proposed change(s), such as with production capacity, the types and/or quantities of materials used or processed, or anything else that increases the potential emissions of any air pollutant, then the permittee shall apply for and obtain either a modification to the permit to install or a new final permit to install prior to the change(s).

- 2.c** The hourly and annual CO, NO<sub>x</sub>, and OC emission limitations from natural gas combustion and the hourly and annual PE emissions limitations regulated per OAC rule 3745-31-05(A)(3) are based on the emissions unit's potential to emit. Therefore, no record keeping or reporting is required to demonstrate compliance with these limits.

**B. Operational Restrictions**

1. The permittee shall not employ any photochemically reactive materials, as defined in OAC rule 3745-21-01(C)(5), in this emissions unit. This determination shall be made based on the actual formulation of the materials after any final in-plant reducing or thinning and prior to application of the materials.
2. The OC and organic HAP emissions from this emissions unit shall be vented to the RTO thermal incinerator when the emissions unit is in operation.
3. The average combustion temperature within the RTO thermal incinerator, for any 3-hour block of time, shall not be more than 50 degrees Fahrenheit below the average temperature during the most recent emission test that demonstrated the emissions unit(s) was (were) in compliance.
4. The maximum annual coating usage, cleanup material usage, and concentrated fountain solution usage for emissions units K001, K002, K003, K004, K005, K006, and K009 shall not exceed 2,200,000 pounds per year, 91,080 pounds per year, and 228,253 pounds per year, respectively, based upon a rolling, 12-month summation of the usage figures. The usage limitations result in a 48.3 tons of organic compounds (OC) per year emission limitation for K001 through K006 and K009. The OC content of the coatings and the concentrated fountain solutions employed shall not exceed 45.0% by weight and 15.0% by weight, respectively.

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

<u>Month(s)</u>	<u>Maximum Allowable Cumulative Coating Usage (pounds)</u>	<u>Maximum Allowable Cumulative Cleanup Material Usage (pounds)</u>	<u>Maximum Allowable Cumulative Concentrated Fountain Solution Usage (pounds)</u>
1	183,333	7,590	19,021
1-2	366,667	15,180	38,042
1-3	550,000	22,770	57,063
1-4	733,333	30,360	76,084
1-5	916,667	37,950	95,105
1-6	1,100,000	45,540	114,127
1-7	1,283,333	53,130	133,148
1-8	1,466,667	60,720	152,169
1-9	1,650,000	68,310	171,190
1-10	1,866,333	75,900	190,211
1-11	2,016,677	83,490	209,232
1-12	2,200,000	91,080	228,253

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After the first 12 calendar months of operation following the issuance of this permit, compliance with the annual usage limitations shall be based upon a rolling, 12-month summation of the usage figures.

5. The permittee shall only employ cleanup materials that have a vapor pressure that is less than 10 mm Hg at 20 degrees Celsius (68 degrees Fahrenheit). The permittee shall store the cleanup cloths in closed containers.
6. The dryer oven for this emissions unit shall only employ natural gas.
7. The permittee shall not employ fountain solutions that contain alcohol in this emissions unit.
8. The permittee shall only employ automatic blanket wash cleanup that contains no organic solvent in this emissions unit. Only the manual cleanup material can contain organic solvents.

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

1. The permittee shall maintain the following information for this emissions unit:
  - a. the MSDS sheets for each liquid organic material employed;
  - b. documentation as to whether or not each material is a photochemically reactive material; and
  - c. for materials that are reduced or thinned prior to application, documentation as to whether or not the resulting material is a photochemically reactive material.
2. The permittee shall maintain the following information for this emissions unit:
  - a. the MSDS sheets for each fountain solution employed; and
  - b. documentation as to whether or not each fountain solution contains any alcohol.
3. The permittee shall maintain documentation of the vapor pressure, in millimeters of mercury at 20 degrees Celsius (68 degrees Fahrenheit) for each cleanup material employed.
4. The permittee shall collect and record the following information monthly for emissions units K001, K002, K003, K004, K005, K006, and K009:
  - a. the company identification for each coating, concentrated fountain solution, and cleanup

- material employed;
- b. the amount of each coating, concentrated fountain solution, and cleanup employed, in pounds;
  - c. the total amount of all coatings, all concentrated fountain solutions, and all cleanup materials employed, in pounds;
  - d. the OC content of each coating, concentrated fountain solution, and cleanup material employed, in weight percent;
  - e. the total uncontrolled OC emission rate from all coatings employed, in pounds per month (i.e., [(c)x(the worst-case OC content in weight percent of all the coatings employed in the month)/100] or the sum of [(b)x(d)/100] for each coating employed);
  - f. the total controlled OC emission rate from all coatings employed, in tons per month (i.e., [(0.80)x(e)x(1-destruction efficiency\*)]\*\*, and then divided by 2000);
  - g. the total uncontrolled OC emission rate from all concentrated fountain solutions employed, in pounds per month (i.e., the sum of [(b)x(d)/100] for each concentrated fountain solution employed);
  - h. the total controlled OC emission rate from all concentrated fountain solutions employed, in tons per month (i.e., [(g)x(1- (0.7) x destruction efficiency\*)]\*\*, and then divided by 2000);
  - i. the total controlled OC emission rate from all cleanup materials employed, in tons per month (i.e., the sum of (0.5)x(b)x(d)\*\* for each cleanup material employed, and then divided by 2000);
  - j. the total OC emission rate from the emissions units K001, K002, K003, K004, K005, K006, and K009, in tons per month (i.e., [(f)+(h)+(i)]).
  - k. beginning after the first 12 calendar months of operation following the issuance of this permit, the rolling, 12-month summations of the coating usage figures, concentrated fountain solution usage figures, cleanup material usage figures, and OC emissions for each month, in pounds or tons; and
  - l. during the first 12 calendar months of operation following the issuance of this permit, the permittee shall record the cumulative coating usage, concentrated fountain solution usage, and cleanup material usage for each month, in pounds.

\* The permittee shall use the destruction efficiency from the most recent performance test that demonstrated that the emissions unit(s) was (were) in compliance.

\*\*Per Ohio EPA Division of Air Pollution Control Engineering Section Engineer Guide #56 revised June 15, 1999 and based on a successful demonstration of negative pressure in the dryer oven in accordance with section E.1 of the testing requirements, the following assumptions shall be used in calculating the OC emissions: 20 percent, by weight, of the solvent in the coatings is retained in the web or substrate and the remaining 80 percent, by weight, is vented to the incinerator; 30 percent, by weight, of the fountain solution emissions are fugitive and the remaining 70 percent, by weight, is vented to the incinerator for fountain solutions containing only alcohol substitutes; and 50 percent, by weight, of the manual cleanup material is retained in the cleanup cloths and the remaining 50 percent, by weight, is fugitive emissions if the solvent has a vapor pressure of 10 mm Hg or lower at 20 degrees Celsius (68 degrees Fahrenheit).

5. The permittee shall collect and record the following information monthly for emissions units K001 through K009:
  - a. For emissions units K001, K002, K003, K004, K005, K006, and K009:
    - i. the company identification for each coating, concentrated fountain solution, and cleanup material employed;
    - ii. the amount of each coating, concentrated fountain solution, and cleanup employed, in pounds;
    - iii. the individual HAP content of each HAP of each coating, concentrated fountain solution, and cleanup material employed, in weight percent;
    - iv. the combined HAPs content of each coating, concentrated fountain solution, and cleanup material employed (the sum of all the individual HAP contents in (iii)), in weight percent;
    - v. the uncontrolled individual HAP emission rate for each HAP from all coatings employed, in pounds per month (i.e., the sum of [(ii)x(iii)/100] for each HAP for each coating employed);
    - vi. the controlled individual HAP emission rate for each HAP from all coatings employed, in tons per month (i.e., [(0.80)x(v)x(1-destruction efficiency\*)]\*\*, and then divided by 2000 for each HAP);

- vii. the uncontrolled combined HAPs emission rate from all coatings employed, in pounds per month (i.e., the sum of  $[(ii)x(iv)/100]$  for each coating employed);
  - viii. the controlled combined HAPs emission rate for each HAP from all coatings employed, in tons per month (i.e.,  $[(0.80)x(vii)x(1-\text{destruction efficiency}^*)]**$ , and then divided by 2000);
  - ix. the uncontrolled individual HAP emission rate for each HAP from all concentrated fountain solutions employed, in pounds per month (i.e., the sum of  $[(ii)x(iii)/100]$  for each HAP for each fountain solution employed);
  - x. the controlled individual HAP emission rate for each HAP from all concentrated fountain solutions employed, in tons per month (i.e.,  $[(ix)x[1-(0.7) \times \text{destruction efficiency}^*]**$ , and then divided by 2000 for each HAP);
  - xi. the uncontrolled combined HAPs emission rate from all concentrated fountain solutions employed, in pounds per month (i.e., the sum of  $[(ii)x(iv)/100]$  for each fountain solution employed);
  - xii. the controlled combined HAPs emission rate from all concentrated fountain solutions employed, in tons per month (i.e.,  $[(xi)x[(1- (0.7) \times \text{destruction efficiency}^*)]**$ , and then divided by 2000);
  - xiii. the controlled individual HAP emission rate for each HAP from all cleanup materials employed, in tons per month (i.e., the sum of  $(0.5)x(ii)x(iii)**$  for each HAP for each cleanup material employed, and then divided by 2000);
  - xiv. the controlled combined HAPs emission rate from all cleanup materials employed, in tons per month (i.e., the sum of  $(0.5)x(ii)x(iv)**$  for each cleanup material employed, and then divided by 2000);
  - xv. the individual HAP emission rate for each HAP from all cleanup materials, all concentrated fountain solutions, and all coatings employed, in tons per month (i.e.,  $[(vi)+(x)+(xiii)$  for each HAP]); and
  - xvi. the combined HAPs emission rate from all cleanup materials, all concentrated fountain solutions, and all coatings employed, in tons per month (i.e.,  $[(viii)+(xii)+(xiv)]$ ).
- b. For emissions units K007 and K008:

- i. the company identification for each non-heatset ink, aqueous coating, concentrated fountain etch solution, fountain solution additive, manual cleanup material, and automatic cleanup material employed;
- ii. the amount of each non-heatset ink, aqueous coating, concentrated fountain etch solution, fountain solution additive, manual cleanup material, and automatic cleanup material employed, in pounds;
- iii. the individual HAP content of each HAP of each non-heatset ink, aqueous coating, concentrated fountain etch solution, fountain solution additive, manual cleanup material, and automatic cleanup material employed, in weight percent;
- iv. the combined HAPs content of each non-heatset ink, aqueous coating, concentrated fountain etch solution, fountain solution additive, manual cleanup material, and automatic cleanup material employed (the sum of all the individual HAP contents in (iii)), in weight percent;
- v. the individual HAP emission rate for each HAP from all non-heatset inks employed, in tons (i.e., the sum of  $[(ii) \times (iii)/100] \times 0.05^{***}$  for each HAP for each non-heatset ink employed, and then divided by 2000);
- vi. the combined HAPs emission rate from all non-heatset inks employed, in tons (i.e., the sum of  $[(ii) \times (iv)/100] \times 0.05^{***}$  for each non-heatset ink employed, and then divided by 2000);
- vii. the individual HAP emission rate for each HAP from all aqueous coatings employed, in tons (i.e., the sum of  $[(ii) \times (iii)/100]$  for each HAP for each aqueous coating employed, and then divided by 2000);
- viii. the combined HAPs emission rate from all aqueous coatings employed, in tons (i.e., the sum of  $[(ii) \times (iv)/100]$  for each aqueous coating employed, and then divided by 2000);
- ix. the individual HAP emission rate for each HAP from all concentrated fountain etch solutions employed, in tons (i.e., the sum of  $[(ii) \times (iii)/100]$  for each HAP for each concentrated fountain etch solution employed, and then divided by 2000);
- x. the combined HAPs emission rate from all concentrated fountain etch solutions employed, in tons (i.e., the sum of  $[(ii) \times (iv)/100]$  for each concentrated fountain etch solution employed, and then divided by 2000);

- xi. the individual HAP emission rate for each HAP from all fountain solution additives employed, in tons (i.e., the sum of [(ii) x (iii)/100] for each HAP for each fountain solution additive employed, and then divided by 2000);
  - xii. the combined HAPs emission rate from all fountain solution additives employed, in tons (i.e., the sum of [(ii) x (iv)/100] for each fountain solution additive employed, and then divided by 2000);
  - xiii. the individual HAP emission rate for each HAP from all manual cleanup materials employed, in tons (i.e., the sum of [(ii) x (iii)/100] x 0.5\*\*\*\* for each HAP for each manual cleanup material employed, and then divided by 2000);
  - xiv. the combined HAPs emission rate from all manual cleanup materials employed, in tons (i.e., the sum of [(ii) x (iv)/100] x 0.5\*\*\*\* for each manual cleanup material employed, and then divided by 2000);
  - xv. the individual HAP emission rate for each HAP from all automatic cleanup materials employed, in tons (i.e., the sum of [(ii) x (iii)/100] for each HAP for each automatic cleanup material employed, and then divided by 2000);
  - xvi. the combined HAPs emission rate from all automatic cleanup materials employed, in tons (i.e., the sum of [(ii) x (iv)/100] for each automatic cleanup material employed, and then divided by 2000);
  - xvii. the individual HAP emission rate for each HAP from all non-heatset ink, all aqueous coating, all concentrated fountain etch solution, all fountain solution additive, all manual cleanup material, and all automatic cleanup material employed, in tons per month ( i.e., [(v) + (vii) + (ix) + (xi) + (xiii) + (xv)] for each HAP); and
  - xviii. the combined HAPs emission rate from all non-heatset ink, all aqueous coating, all concentrated fountain etch solution, all fountain solution additive, all manual cleanup material, and all automatic cleanup material employed, in tons per month ( i.e., [(vi) + (viii) + (x) + (xii) + (xiv) + (xvi)]).
- c. For emissions unit K001 through K009:
- i. the total individual HAP emission rate for each HAP, in tons per month (i.e., (4.a.xv) + (4.b.xvii) for each HAP);
  - ii. the total combined HAPs emission rate, in tons per month (i.e., (4.a.xvi) + (4.b.xviii));

- iii. beginning after the first 12 calendar months of operation following the issuance of this permit, the rolling, 12-month summations of individual HAP emissions for each HAP and of combined HAPs emissions for each month, in tons; and
- iv. during the first 12 calendar months of operation following the issuance of this permit, the permittee shall record the cumulative emissions of individual HAP for each HAP and the cumulative emissions of combined HAPs for each month, in tons;
- v. during the first 12 calendar months of operation following the issuance of this permit if the cumulative emissions of combined HAPs for each month are less than or equal to the allowable cumulative emissions of any individual HAP for each month, then cumulative emissions for each individual HAP do not need to be calculated; and
- vi. beginning after the first 12 calendar months of operation following the issuance of this permit if the rolling, 12-month summation of combined HAPs is 8.0 tons per year or less for each month, then the rolling, 12-month summations of each individual HAP do not need to be calculated unless any subsequent rolling, 12-month summation exceeds 8.0 tons per year.

\* The permittee shall use the destruction efficiency from the most recent performance test that demonstrated that the emissions unit(s) was (were) in compliance.

\*\*Per Ohio EPA Division of Air Pollution Control Engineering Section Engineer Guide #56 revised June 15, 1999 and based on a successful demonstration of negative pressure in the dryer ovens, the following assumptions shall be used in calculating the HAP emissions: 20 percent, by weight, of the solvent in the coatings is retained in the web or substrate and the remaining 80 percent, by weight, is vented to the incinerator; 30 percent, by weight, of the fountain solution emissions are fugitive and the remaining 70 percent, by weight, is vented to the incinerator for fountain solutions containing only alcohol substitutes; and 50 percent, by weight, of the manual cleanup material is retained in the cleanup cloths and the remaining 50 percent, by weight, is fugitive emissions if the solvent has a vapor pressure of 10 mm Hg or lower at 20 degrees Celsius (68 degrees Fahrenheit).

\*\*\*Ohio EPA, Division of Air Pollution Control, Engineering Section, Engineering Guide #68 (dated July 7, 1997) states that only 5% of the ink solvent is emitted from non-heatset inks.

Emissions Unit ID: **K006**

\*\*\*\*Ohio EPA, Division of Air Pollution Control, Engineering Section, Engineering Guide #68 (dated July 7, 1997) states 50% of the solvent is retained in the shop towel and 50% is emitted for cleanup solvents which have a composite vapor pressure less than 10 millimeters of mercury at 20 degrees Celsius.

6. The permittee shall operate and maintain a continuous temperature monitor and recorder which measures and records the combustion temperature within the RTO 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.

The permittee shall collect and record the following information for each day:

- a. all 3-hour blocks of time during which the average combustion temperature within the RTO thermal incinerator, when the emissions unit was in operation, was more than 50 degrees Fahrenheit below the average temperature during the most recent emission test that demonstrated the emissions unit was in compliance; and
  - b. a log of the downtime for the capture (collection) system, control device, and monitoring equipment, when the associated emissions unit was in operation.
7. The permit to install for this emissions unit (K006) was evaluated based on the actual materials (typically coatings and cleanup materials) and the design parameters of the emissions unit's exhaust system, as specified by the permittee in the permit to install application. The Ohio EPA's "Review of New Sources of Air Toxic Emissions" policy ("Air Toxic Policy") was applied for each pollutant emitted by this emissions unit using data from the permit to install application and the SCREEN 3.0 model (or other Ohio EPA approved model). The predicted 1-hour maximum ground-level concentration from the use of the SCREEN 3.0 model was compared to the Maximum Acceptable Ground-Level Concentration (MAGLC). The following summarizes the results of the modeling for the "worst case" pollutant(s):

Pollutant: ethylene glycol n-butyl ether

TLV (mg/m3): 97

Maximum Hourly Emission Rate (lbs/hr): 1.66\*

Predicted 1-Hour Maximum Ground-Level  
 Concentration (ug/m3): 320.0

MAGLC (ug/m3): 2309.5

Pollutant: ethylene glycol

TLV (mg/m<sup>3</sup>): 73

Maximum Hourly Emission Rate (lbs/hr): 1.06\*

Predicted 1-Hour Maximum Ground-Level  
Concentration (ug/m<sup>3</sup>): 192.6

MAGLC (ug/m<sup>3</sup>): 1738.1

Pollutant: petroleum naphtha

TLV (mg/m<sup>3</sup>): 525

Maximum Hourly Emission Rate (lbs/hr): 8.27\*\*

Predicted 1-Hour Maximum Ground-Level  
Concentration (ug/m<sup>3</sup>): 1661

MAGLC (ug/m<sup>3</sup>): 12500

\*Maximum emission rate from emissions units K001 through K009.

\*\*Maximum emission rate from emissions units K001 through K006 and K009.

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

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

- b. changes in the composition of the materials, or use of new materials, that would result in an increase in emissions of any pollutant with a listed TLV that was proposed in the application and modeled; and
- c. physical changes to the emissions unit or its exhaust parameters (e.g., increased/ decreased exhaust flow, changes in stack height, changes in stack diameter, etc.).

If the permittee determines that the "Air Toxic Policy" will be satisfied for the above changes, the Ohio EPA will not consider the change(s) to be a "modification" under OAC rule 3745-31-01(VV)(1)(a)(ii), and a modification of the existing permit to install will not be required. If the change(s) is (are) defined as a modification under other provisions of the modification definition (other than (VV)(1)(a)(ii)), then the permittee shall obtain a final permit to install prior to the change.

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

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

#### **D. Reporting Requirements**

1. The permittee shall notify the Director (the appropriate Ohio EPA District Office or local air agency) in writing if a "photochemically reactive material" (as defined in OAC 3745-21-01 (C)(5)) is employed in the emissions unit. The notification shall include a copy of such record and shall be sent to the Director (the appropriate Ohio EPA District Office or local air agency) within 45 days after such an occurrence.
2. The permittee shall submit deviation (excursion) reports that identify any time periods when the emissions unit was in operation and the emissions from the emissions unit were not vented to the RTO thermal incinerator. Each report shall be submitted within 30 days after the deviation occurs.
3. The permittee shall submit deviation (excursion) reports which identify all 3-hour blocks of time during which the average combustion temperature within the RTO thermal incinerator does not

comply with the temperature limitation specified above.

4. The permittee shall submit deviation (excursion) reports which identify all exceedances of the rolling, 12-month usage limitations for coatings, cleanup materials, and concentrated fountain solutions and the rolling 12-month emission limitations for OC, any individual HAP, and combined HAPs and, for the first 12 calendar months of operation following the issuance of this permit, all exceedances of the maximum allowable cumulative coating usage levels, cleanup material usage levels, concentrated fountain solution levels, emissions of any individual HAP levels, and emissions of combined HAPs levels.
5. The permittee shall notify the Director (the appropriate Ohio EPA District Office or local air agency) in writing if a coating or a concentrated fountain solution which exceeds the OC contents specified in section B.5 of these terms and conditions is employed in this emissions unit. The notification shall include a copy of such record and shall be sent to the Director (the appropriate Ohio EPA District Office or local air agency) within 30 days after such an occurrence.
6. The permittee shall notify the Director (the appropriate Ohio EPA District Office or local air agency) in writing if a fountain solution containing any alcohol is employed in this emissions unit. The notification shall include a copy of such record and shall be sent to the Director (the appropriate Ohio EPA District Office or local air agency) within 45 days after such an occurrence.
7. The permittee shall notify the Director (the appropriate Ohio EPA District Office or local air agency) in writing if a cleanup material that has a vapor pressure of 10 mm Hg or greater is employed in this emissions unit. The notification shall include a copy of such record and shall be sent to the Director (the appropriate Ohio EPA District Office or local air agency) within 45 days after such an occurrence.
8. The permittee shall also submit annual reports which specify the total OC emissions from emissions units K001, K002, K003, K004, K005, K006, and K009 combined for the previous calendar year. These reports shall be submitted by January 31 of each year.
9. The deviation reports shall be submitted in accordance with the requirements specified in the General Terms and Conditions of this permit.

#### **E. Testing Requirements**

1. A demonstration of negative pressure differential for the dryer oven shall be conducted within 90 days of start-up of emissions unit K009 to confirm that the assumptions stated in sections C.4 and C.5 of these terms and conditions apply to this emissions unit. Such a demonstration shall be shown by either of the following methods:

- a. By using a differential pressure gauge so that an inlet of the gauge is within the dryer and the other inlet is open to the ambient air in the pressroom. The differential pressure gauge may be a liquid column gauge or may be a mechanical type gauge. The differential pressure gauge shall be properly leveled and zeroed according to the manufacturer's instructions. If a mechanical type gauge is used, it should be calibrated according to the manufacturer's instructions against a liquid column gauge. (If a liquid column gauge is used, no calibration is necessary). The gauge should measure a pressure differential of at least 0.007 inches of water column whenever the press is operating to ensure that air is entering the dryer through all of the dryer's openings (excluding the exhaust stack). If a pressure gauge is to be permanently installed on the dryer, the location of the pressure tap within the dryer should not be modified without first consulting with the dryer manufacturer/installer. This is important since the manufacturer/installer may have used the pressure differential to set the exhaust rate for the dryer to ensure that the VOC concentration within the dryer remains below 25 percent of the lower explosive limit; or
- b. By using smoke tubes, plastic flow indicating strips or other flow indicating devices approved by the field office in consultation with the Engineering Section to demonstrate that air flows into the dryer at all openings in the dryer (excluding the exhaust stack). All points measured with such devices should indicate airflow into the dryer.

If the testing fails to demonstrate negative pressure in the dryer oven, the assumptions detailed in sections C.4 and C.5 of these terms and conditions shall not apply, and an overall control efficiency of this emissions unit shall be based on capture efficiency testing as described in section E.2.e below.

2. The permittee shall conduct, or have conducted, emission testing for this emissions unit in accordance with the following requirements:
  - a. The emission testing shall be conducted within 90 days of start-up of emissions unit K009.
  - b. The emission testing shall be conducted to demonstrate compliance with the capture efficiency for OC (verify negative pressure in the dryer oven as described in Section E.1 above) and the control efficiency for OC and organic HAP.
  - c. The test method(s) which must be employed to demonstrate compliance with the control efficiency limitation for OC and organic HAP are specified below. Alternative U.S. EPA approved test methods may be used with prior approval from the Ohio EPA.
  - d. 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. The test methods and procedures selected

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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.

- e. If required, 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 USEPA's "Guidelines 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.)
  - f. The test(s) shall be conducted while the emissions unit is operating at or near its maximum capacity, unless otherwise specified or approved by the appropriate Ohio EPA District Office or local air agency.
3. Not later than 30 days prior to the proposed test date(s), the permittee shall submit an "Intent to Test" notification to the appropriate Ohio EPA District Office or local air agency. 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 District Office's or local air agency's refusal to accept the results of the emission test(s).
  4. Personnel from the appropriate Ohio EPA District Office or local air agency 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.
  5. 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 appropriate Ohio EPA District Office or local air agency within 30 days following completion of the test(s). The permittee may request additional time for the submittal of the written report, where warranted, with prior approval from the appropriate Ohio EPA District Office or local air agency.
  6. Compliance with the emission limitations in sections A.1 and B.5 of these terms and conditions shall be determined in accordance with the following methods:
    - a. Emission Limitations:
      - OC content of 45.0%, by weight, for coatings
      - OC content of 15.0%, by weight, for concentrated fountain solutions

Applicable Compliance Method:

Formulation data or USEPA Method 24 (for coatings) or 24A (for flexographic and rotogravure printing inks and related coatings) shall be used to determine the organic compound contents of the coatings and concentrated fountain solutions.

b. Emission Limitation:

0.58 pound of OC per hour for coatings and fountain solutions

Applicable Compliance Method:

Compliance shall be determined by the following equation:

$$[(\text{maximum coating usage, in pounds per hour}) \times (0.45^*) \times (0.8^{**}) \times (1-0.95^{***}) + (\text{maximum concentrated fountain solution usage, in pounds per hour}) \times (0.15^*) \times (1-(0.7^{**}) \times (0.95^{***}))]$$

\*Maximum allowable OC content for coatings and concentrated fountain solutions.

\*\*Per Ohio EPA Division of Air Pollution Control Engineering Section Engineer Guide #56 revised June 15, 1999, emission factors provided in the answer to question number 21.

\*\*\*Minimum required control efficiency for the RTO thermal incinerator.

c. Emission Limitation:

0.551 pound of PE per hour

Applicable Compliance Method:

Stack testing may be required in the future in accordance with the test method(s) and procedures in OAC rule 3745-17-03(B)(10).

d. Emission Limitation:

2.4 tons of PE per year

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Applicable Compliance Method:

Multiply the allowable hourly emission limitation by 8760 hours per year, then divide by 2000 pounds per ton.

e. Emission Limitations:

dryer oven - 0.40 pound of CO per hour  
RTO thermal incinerator - 0.72 pound of CO per hour

Applicable Compliance Method:

Multiply the CO emission factor of 84 pounds of CO emissions per million cubic feet of natural gas by the maximum hourly natural gas usage. The CO emission factor is from AP-42, 5th edition, Table 1.4-1, dated 2/98.

f. Emission Limitations:

dryer oven - 1.75 tons of CO per year  
RTO thermal incinerator - 3.2 tons of CO per year

Applicable Compliance Method:

Multiply the allowable hourly emission limitation by 8760 hours per year, then divide by 2000 pounds per ton.

g. Emission Limitations:

dryer oven - 0.47 pound of NO<sub>x</sub> per hour  
RTO thermal incinerator - 0.86 pound of NO<sub>x</sub> per hour

Applicable Compliance Method:

Multiply the NO<sub>x</sub> emission factor of 100 pounds of NO<sub>x</sub> emissions per million cubic feet of natural gas by the maximum hourly natural gas usage. The NO<sub>x</sub> emission factor is from AP-42, 5th edition, Table 1.4-1, dated 2/98.

h. Emission Limitations:

dryer oven - 2.1 tons of NO<sub>x</sub> per year  
RTO thermal incinerator - 3.8 tons of NO<sub>x</sub> per year

Applicable Compliance Method:

Multiply the allowable hourly emission limitation by 8760 hours per year, then divide by

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2000 pounds per ton.

i. Emission Limitations:

dryer oven - 0.05 pound of OC per hour  
RTO thermal incinerator - 0.10 pound of OC per hour

Applicable Compliance Method:

Multiply the OC emission factor of 11 pounds of OC emissions per million cubic feet of natural gas by the maximum yearly natural gas usage, and divide by 2000 lbs/ton. The OC emission factor is from AP-42, 5th edition, Table 1.4-2, dated 3/98.

j. Emission Limitations:

dryer oven - 0.2 ton of OC per year  
RTO thermal incinerator - 0.4 ton of OC per year

Applicable Compliance Method:

Multiply the allowable hourly emission limitation by 8760 hours per year, then divide by 2000 pounds per ton.

k. Emission Limitation:

20% opacity as a 6-minute average

Applicable Compliance Method:

OAC rule 3745-17-03(B)(1)

l. Emission Limitation:

The control efficiency of the RTO thermal incinerator shall be at least 95%, by weight for OC and organic HAP

Applicable Compliance Method:

Compliance with the control efficiency requirement shall be determined in accordance with the test methods and procedures specified in OAC rule 3745-21-10 as required in section E.2 of these terms and conditions.

m. Emission Limitation:

The emissions of OC from emissions units K001, K002, K003, K004, K005, K006, and K009 shall not exceed 48.3 tons per year, based upon a rolling, 12-month summation of the monthly emissions.

Applicable Compliance Method:

Compliance shall be demonstrated based upon the monthly record keeping as required by section C.4 of these terms and conditions. Formulation data or USEPA Method 24 (for coatings) or 24A (for flexographic and rotogravure printing inks and related coatings) shall be used to determine the organic compound contents of the coatings and concentrated fountain solutions.

n. Emission Limitations:

The emissions of any individual hazardous air pollutant (HAP) from emissions unit K001 through K009 shall not exceed 8.0 tons per year, based upon a rolling, 12-month summation of the monthly emissions.

The emissions of combined hazardous air pollutants (HAPs) from emissions units K001 through K009 shall not exceed 20.0 tons per year, based upon a rolling, 12-month summation of the monthly emissions.

Applicable Compliance Method:

Compliance shall be demonstrated based upon the monthly record keeping as required by section C.5 of these terms and conditions. Formulation data shall be used to determine the HAP contents of the non-heatset inks, aqueous coatings, coatings, concentrated fountain solutions, concentrated fountain etch solutions, fountain solution additives, and cleanup materials.

**F. Miscellaneous Requirements**

1. The terms and conditions in this Permit to Install 16-02284 shall supersede all the air pollution control requirements for K006 in Permit to Install 16-1838, issued on April 21, 1999.
2. The following terms and conditions of this permit are federally enforceable pursuant to OAC rule 3745-35-07: A.1, A.2.a, B.1, B.2, B.3, B.4, B.5, B.6, B.7, B.8, C.1, C.2, C.3, C.4, C.5, C.6, D.1, D.2, D.3, D.4, D.5, D.6, D.7, D.8, E.1, E.2, E.3, E.4, and E.5.

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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.

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/Requirements</u>	<u>Applicable Emissions Limitations/Control Measures</u>
K007 - Non-Heatset Sheetfed Printing Press No 212 - Sheetfed Press No 212 (the terms and conditions in this permit supercede the terms and conditions in PTI 16-02021 issued April 5, 2000)Modified.	OAC rule 3745-31-05(A)(3)	4.13 pounds of organic compounds (OC) per hour for non-heatset inks, aqueous coatings, concentrated fountain solutions, and fountain solution additives  The requirements of this rule also include compliance with the requirements of OAC rule 3745-35-07.
	OAC rule 3745-21-07(G)(2)	Exempt. See B.1 below.
	OAC rule 3745-35-07(B)	The emissions of OC from emissions units K007 and K008 shall not exceed 39.2 tons per year, based upon a rolling, 12-month summation of the monthly emissions.  See B.3 below.  The emissions of any individual hazardous air pollutant (HAP) from emissions units K001 through K009 shall not exceed 8.0 tons per year, based upon a rolling, 12-month

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summation of the monthly emissions.

The emissions of combined hazardous air pollutants (HAPs) from emissions units K001 through K009 shall not exceed 20.0 tons per year, based upon a rolling, 12-month summation of the monthly emissions.

See A.2.a below.

**2. Additional Terms and Conditions**

**2.a** To ensure enforceability during the first 12 calendar months of operation following the issuance of this permit, the permittee shall not exceed the emission levels specified in the following table:

<u>Month(s)</u>	<u>Maximum Allowable Cumulative Emissions of Any Individual HAP (Tons)</u>	<u>Maximum Allowable Cumulative Emissions of Combined HAPs (Tons)</u>
1	0.7	1.7
1-2	1.3	3.3
1-3	2.0	5.0
1-4	2.7	6.7
1-5	3.3	8.3
1-6	4.0	10.0
1-7	4.7	11.7
1-8	5.3	13.3
1-9	6.0	15.0
1-10	6.7	16.7
1-11	7.3	18.3
1-12	8.0	20.0

After the first 12 calendar months of operation following the issuance of this permit, compliance with the annual emission limitations for any individual HAP and combined HAPs shall be based upon a rolling, 12-month summation of the monthly emissions.

**2.b** The hourly OC emission limitation regulated per OAC rule 3745-31-05(A)(3) is based on

the emissions unit's potential to emit. Therefore, no record keeping or reporting is required to demonstrate compliance with this limit.

However, if any proposed change(s), such as with production capacity, the types and/or quantities of materials used or processed, or anything else that increases the potential emissions of any air pollutant, then the permittee shall apply for and obtain either a modification to the permit to install or a new final permit to install prior to the change(s).

## B. Operational Restrictions

1. The permittee shall not employ any photochemically reactive materials, as defined in OAC rule 3745-21-01(C)(5), in this emissions unit. This determination shall be made based on the actual formulation of the materials after any final in-plant reducing or thinning and prior to application of the materials.
2. The permittee shall only employ cleanup materials that have a vapor pressure less than 10 mm Hg at 20 degrees Celsius (68 degrees Fahrenheit). The permittee shall store the cleanup cloths in closed containers.
3. The maximum annual non-heatset ink usage, aqueous coating usage, automatic cleanup material usage, manual cleanup material usage, concentrated fountain etch solution usage, and fountain solution additive usage for the combined emissions units K007 and K008 shall not exceed 150,000 pounds per year, 325,000 pounds per year, 36,900 pounds per year, 8,160 pounds per year, 15,400 pounds per year and 13,825 pounds per year, respectively, based upon a rolling, 12-month summation of the usage figures. The usage limitations result in a 39.2 tons of organic compounds (OC) per year emission limitation for K007 and K008. The OC content of the non-heatset inks, the aqueous coatings, and the concentrated fountain etch solutions employed shall not exceed 25.0% by weight, 5.0% by weight, and 18.0% by weight, respectively. Fountain solution additives shall not have a limitation on the OC content.

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

Month(s)	Maximum Allowable	Maximum Allowable	
	Cumulative Non-Heatset Ink Usage (pounds)	Cumulative Aqueous Fountain Etch Coating Usage (pounds)	Concentrated Usage (pounds)
1	12,500	27,083	1,283
1-2	25,000	54,167	2,567
1-3	37,500	81,250	3,850
1-4	50,000	108,333	5,133
1-5	62,500	135,417	6,417
1-6	75,000	162,500	7,700
1-7	87,500	189,583	8,983
1-8	100,000	216,667	10,267
1-9	112,500	243,750	11,550
1-10	125,000	270,833	12,833
1-11	137,500	297,917	14,117
1-12	150,000	325,000	15,400

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<u>Month(s)</u>	<u>Maximum Allowable Cumulative Fountain Solution Additive Usage (pounds)</u>	<u>Maximum Allowable Cumulative Automatic Cleanup Material Usage (pounds)</u>	<u>Maximum Allowable Cumulative Manual Cleanup Material Usage (pounds)</u>
1	1,152	3,300	680
1-2	2,304	6,600	1,360
1-3	3,456	9,900	2,040
1-4	4,608	13,200	2,720
1-5	5,760	16,500	3,400
1-6	6,913	19,800	4,080
1-7	8,065	23,100	4,760
1-8	9,217	26,400	5,440
1-9	10,369	29,700	6,120
1-10	11,521	33,000	6,800
1-11	12,673	36,300	7,480
1-12	13,825	39,600	8,160

After the first 12 calendar months of operation following the issuance of this permit, compliance with the annual usage limitations shall be based upon a rolling, 12-month summation of the usage figures.

### C. Monitoring and/or Recordkeeping Requirements

1. The permittee shall maintain the following information for this emissions unit:
  - a. the MSDS sheets for each liquid organic material employed; and
  - b. documentation as to whether or not each material is a photochemically reactive material; and
  - c. for materials that are reduced or thinned prior to application, documentation as to whether or not the resulting material is a photochemically reactive material.
2. The permittee shall collect and record the following information for each month for emissions units K007 and K008:
  - a. the company identification for each non-heatset ink, aqueous coating, concentrated fountain etch solution, fountain solution additive, manual cleanup material, and automatic cleanup material employed;

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- b. the amount of each non-heatset ink, aqueous coating, concentrated fountain etch solution, fountain solution additive, manual cleanup material, and automatic cleanup material employed, in pounds;
- c. the total amount of all non-heatset inks, all aqueous coatings, all concentrated fountain etch solutions, all fountain solution additives, all manual cleanup materials, and all automatic cleanup materials employed, in pounds;
- d. the organic compound content of each non-heatset ink, aqueous coating, concentrated fountain etch solution, fountain solution additive, manual cleanup material, and automatic cleanup material employed, in weight percent;
- e. the organic compound emission rate from all non-heatset inks employed, in tons (i.e., the sum of  $[(b) \times (d)/100] \times 0.05^*$  for each non-heatset ink employed, and then divided by 2000);
- f. the organic compound emission rate from all aqueous coatings employed, in tons (i.e., the sum of  $[(b) \times (d)/100]$  for each aqueous coating, and then divided by 2000);
- g. the organic compound emission rate from all concentrated fountain etch solutions employed, in tons (i.e., the sum of  $[(b) \times (d)/100]$  for each concentrated fountain etch solution, and then divided by 2000);
- h. the organic compound emission rate from all fountain solution additives employed, in tons (i.e., the sum of  $[(b) \times (d)/100]$  for each fountain solution additive, and then divided by 2000);
- i. the organic compound emission rate from all manual cleanup materials employed, in tons (i.e., the sum of  $[(b) \times (d)/100] \times 0.5^{**}$  for each manual cleanup material, and then divided by 2000);
- j. the organic compound emission rate from all automatic cleanup materials employed, in tons (i.e., the sum of  $[(b) \times (d)/100]$  for each automatic cleanup materials, and then divided by 2000); and
- k. the total organic compound emission rate for this emissions unit, in tons per month ( i.e.,  $[(e) + (f) + (g) + (h) + (i) + (j)]$ ).
- l. beginning after the first 12 calendar months of operation following the issuance of this permit, the rolling, 12-month summations of the non-heatset ink usage figures, aqueous

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coating usage figures, concentrated fountain etch solution usage figures, fountain solution additive usage figures, manual cleanup material usage figures, automatic cleanup material usage figures, and OC emissions for each month, in pounds or tons; and

- m. during the first 12 calendar months of operation following the issuance of this permit, the permittee shall record the cumulative non-heatset ink usage, aqueous coating usage, concentrated fountain etch solution usage, fountain solution additive usage, manual cleanup material usage, and automatic cleanup material usage for each month, in pounds.

\*Ohio EPA, Division of Air Pollution Control, Engineering Section, Engineering Guide #68 (dated July 7, 1997) states that only 5% of the ink solvent is emitted from non-heatset inks.

\*\*Ohio EPA, Division of Air Pollution Control, Engineering Section, Engineering Guide #68 (dated July 7, 1997) states 50% of the solvent is retained in the shop towel and 50% is emitted for cleanup solvents which have a composite vapor pressure less than 10 millimeters of mercury at 20 degrees Celsius.

3. The permittee shall collect and record the following information monthly for emissions units K001 through K009:
- a. For emissions units K001, K002, K003, K004, K005, K006, and K009:
- i. the company identification for each coating, concentrated fountain solution, and cleanup material employed;
  - ii. the amount of each coating, concentrated fountain solution, and cleanup employed, in pounds;
  - iii. the individual HAP content of each HAP of each coating, concentrated fountain solution, and cleanup material employed, in weight percent;
  - iv. the combined HAPs content of each coating, concentrated fountain solution, and cleanup material employed (the sum of all the individual HAP contents in (iii)), in weight percent;
  - v. the uncontrolled individual HAP emission rate for each HAP from all coatings employed, in pounds per month (i.e., the sum of [(ii)x(iii)/100] for each HAP for each coating employed);
  - vi. the controlled individual HAP emission rate for each HAP from all coatings employed, in tons per month (i.e., [(0.80)x(v)x(1-destruction efficiency\*)]\*\*, and

- then divided by 2000 for each HAP);
- vii. the uncontrolled combined HAPs emission rate from all coatings employed, in pounds per month (i.e., the sum of  $[(ii) \times (iv) / 100]$  for each coating employed);
  - viii. the controlled combined HAPs emission rate for each HAP from all coatings employed, in tons per month (i.e.,  $[(0.80) \times (vii) \times (1 - \text{destruction efficiency}^*)]^{**}$ , and then divided by 2000);
  - ix. the uncontrolled individual HAP emission rate for each HAP from all concentrated fountain solutions employed, in pounds per month (i.e., the sum of  $[(ii) \times (iii) / 100]$  for each HAP for each fountain solution employed);
  - x. the controlled individual HAP emission rate for each HAP from all concentrated fountain solutions employed, in tons per month (i.e.,  $[(ix) \times [1 - (0.7) \times \text{destruction efficiency}^*]]^{**}$ , and then divided by 2000 for each HAP);
  - xi. the uncontrolled combined HAPs emission rate from all concentrated fountain solutions employed, in pounds per month (i.e., the sum of  $[(ii) \times (iv) / 100]$  for each fountain solution employed);
  - xii. the controlled combined HAPs emission rate from all concentrated fountain solutions employed, in tons per month (i.e.,  $[(xi) \times [(1 - (0.7) \times \text{destruction efficiency}^*)]^{**}$ , and then divided by 2000);
  - xiii. the controlled individual HAP emission rate for each HAP from all cleanup materials employed, in tons per month (i.e., the sum of  $(0.5) \times (ii) \times (iii)^{**}$  for each HAP for each cleanup material employed, and then divided by 2000);
  - xiv. the controlled combined HAPs emission rate from all cleanup materials employed, in tons per month (i.e., the sum of  $(0.5) \times (ii) \times (iv)^{**}$  for each cleanup material employed, and then divided by 2000);
  - xv. the individual HAP emission rate for each HAP from all cleanup materials, all concentrated fountain solutions, and all coatings employed, in tons per month (i.e.,  $[(vi) + (x) + (xiii)]$  for each HAP); and
  - xvi. the combined HAPs emission rate from all cleanup materials, all concentrated fountain solutions, and all coatings employed, in tons per month (i.e.,  $[(viii) + (xii) + (xiv)]$ ).

- b. For emissions units K007 and K008:
- i. the company identification for each non-heatset ink, aqueous coating, concentrated fountain etch solution, fountain solution additive, manual cleanup material, and automatic cleanup material employed;
  - ii. the amount of each non-heatset ink, aqueous coating, concentrated fountain etch solution, fountain solution additive, manual cleanup material, and automatic cleanup material employed, in pounds;
  - iii. the individual HAP content of each HAP of each non-heatset ink, aqueous coating, concentrated fountain etch solution, fountain solution additive, manual cleanup material, and automatic cleanup material employed, in weight percent;
  - iv. the combined HAPs content of each non-heatset ink, aqueous coating, concentrated fountain etch solution, fountain solution additive, manual cleanup material, and automatic cleanup material employed (the sum of all the individual HAP contents in (iii)), in weight percent;
  - v. the individual HAP emission rate for each HAP from all non-heatset inks employed, in tons (i.e., the sum of  $[(ii) \times (iii)/100] \times 0.05^{***}$  for each HAP for each non-heatset ink employed, and then divided by 2000);
  - vi. the combined HAPs emission rate from all non-heatset inks employed, in tons (i.e., the sum of  $[(ii) \times (iv)/100] \times 0.05^{***}$  for each non-heatset ink employed, and then divided by 2000);
  - vii. the individual HAP emission rate for each HAP from all aqueous coatings employed, in tons (i.e., the sum of  $[(ii) \times (iii)/100]$  for each HAP for each aqueous coating employed, and then divided by 2000);
  - viii. the combined HAPs emission rate from all aqueous coatings employed, in tons (i.e., the sum of  $[(ii) \times (iv)/100]$  for each aqueous coating employed, and then divided by 2000);
  - ix. the individual HAP emission rate for each HAP from all concentrated fountain etch solutions employed, in tons (i.e., the sum of  $[(ii) \times (iii)/100]$  for each HAP for each concentrated fountain etch solution employed, and then divided by 2000);
  - x. the combined HAPs emission rate from all concentrated fountain etch solutions employed, in tons (i.e., the sum of  $[(ii) \times (iv)/100]$  for each concentrated fountain

- etch solution employed, and then divided by 2000);
- xi. the individual HAP emission rate for each HAP from all fountain solution additives employed, in tons (i.e., the sum of [(ii) x (iii)/100] for each HAP for each fountain solution additive employed, and then divided by 2000);
  - xii. the combined HAPs emission rate from all fountain solution additives employed, in tons (i.e., the sum of [(ii) x (iv)/100] for each fountain solution additive employed, and then divided by 2000);
  - xiii. the individual HAP emission rate for each HAP from all manual cleanup materials employed, in tons (i.e., the sum of [(ii) x (iii)/100] x 0.5\*\*\*\* for each HAP for each manual cleanup material employed, and then divided by 2000);
  - xiv. the combined HAPs emission rate from all manual cleanup materials employed, in tons (i.e., the sum of [(ii) x (iv)/100] x 0.5\*\*\*\* for each manual cleanup material employed, and then divided by 2000);
  - xv. the individual HAP emission rate for each HAP from all automatic cleanup materials employed, in tons (i.e., the sum of [(ii) x (iii)/100] for each HAP for each automatic cleanup material employed, and then divided by 2000);
  - xvi. the combined HAPs emission rate from all automatic cleanup materials employed, in tons (i.e., the sum of [(ii) x (iv)/100] for each automatic cleanup material employed, and then divided by 2000);
  - xvii. the individual HAP emission rate for each HAP from all non-heatset ink, all aqueous coating, all concentrated fountain etch solution, all fountain solution additive, all manual cleanup material, and all automatic cleanup material employed, in tons per month ( i.e., [(v) + (vii) + (ix) + (xi) + (xiii) + (xv)] for each HAP); and
  - xviii. the combined HAPs emission rate from all non-heatset ink, all aqueous coating, all concentrated fountain etch solution, all fountain solution additive, all manual cleanup material, and all automatic cleanup material employed, in tons per month ( i.e., [(vi) + (viii) + (x) + (xii) + (xiv) + (xvi)]).
- c. For emissions unit K001 through K009:
- i. the total individual HAP emission rate for each HAP, in tons per month (i.e., (4.a.xv) + (4.b.xvii) for each HAP);

- ii. the total combined HAPs emission rate, in tons per month (i.e., (4.a.xvi) + (4.b.xviii));
- iii. beginning after the first 12 calendar months of operation following the issuance of this permit, the rolling, 12-month summations of individual HAP emissions for each HAP and of combined HAPs emissions for each month, in tons; and
- iv. during the first 12 calendar months of operation following the issuance of this permit, the permittee shall record the cumulative emissions of individual HAP for each HAP and the cumulative emissions of combined HAPs for each month, in tons;
- v. during the first 12 calendar months of operation following the issuance of this permit if the cumulative emissions of combined HAPs for each month are less than or equal to the allowable cumulative emissions of any individual HAP for each month, then cumulative emissions for each individual HAP do not need to be calculated; and
- vi. beginning after the first 12 calendar months of operation following the issuance of this permit if the rolling, 12-month summation of combined HAPs is 8.0 tons per year or less for each month, then the rolling, 12-month summations of each individual HAP do not need to be calculated unless any subsequent rolling, 12-month summation exceeds 8.0 tons per year.

\* The permittee shall use the destruction efficiency from the most recent performance test that demonstrated that the emissions unit(s) was (were) in compliance.

\*\*Per Ohio EPA Division of Air Pollution Control Engineering Section Engineer Guide #56 revised June 15, 1999 and based on a successful demonstration of negative pressure in the dryer ovens, the following assumptions shall be used in calculating the HAP emissions: 20 percent, by weight, of the solvent in the coatings is retained in the web or substrate and the remaining 80 percent, by weight, is vented to the incinerator; 30 percent, by weight, of the fountain solution emissions are fugitive and the remaining 70 percent, by weight, is vented to the incinerator for fountain solutions containing only alcohol substitutes; and 50 percent, by weight, of the manual cleanup material is retained in the cleanup cloths and the remaining 50 percent, by weight, is fugitive emissions if the solvent has a vapor pressure of 10 mm Hg or lower at 20 degrees Celsius (68 degrees Fahrenheit).

\*\*\*Ohio EPA, Division of Air Pollution Control, Engineering Section, Engineering Guide #68 (dated July 7, 1997) states that only 5% of the ink solvent is emitted from non-heatset inks.

\*\*\*\*Ohio EPA, Division of Air Pollution Control, Engineering Section, Engineering Guide #68 (dated July 7, 1997) states 50% of the solvent is retained in the shop towel and 50% is emitted for cleanup solvents which have a composite vapor pressure less than 10 millimeters of mercury at 20 degrees Celsius.

- The permit to install for this emissions unit (K007) was evaluated based on the actual materials (typically coatings and cleanup materials) and the design parameters of the emissions unit's exhaust system, as specified by the permittee in the permit to install application. The Ohio EPA's "Review of New Sources of Air Toxic Emissions" policy ("Air Toxic Policy") was applied for each pollutant emitted by this emissions unit using data from the permit to install application and the SCREEN 3.0 model (or other Ohio EPA approved model). The predicted 1-hour maximum ground-level concentration from the use of the SCREEN 3.0 model was compared to the Maximum Acceptable Ground-Level Concentration (MAGLC). The following summarizes the results of the modeling for the "worst case" pollutant(s):

Pollutant: ethylene glycol n-butyl ether

TLV (mg/m<sup>3</sup>): 97

Maximum Hourly Emission Rate (lbs/hr): 1.66\*

Predicted 1-Hour Maximum Ground-Level  
Concentration (ug/m<sup>3</sup>): 320.0

MAGLC (ug/m<sup>3</sup>): 2309.5

Pollutant: ethylene glycol

TLV (mg/m<sup>3</sup>): 73

Maximum Hourly Emission Rate (lbs/hr): 1.06\*

Predicted 1-Hour Maximum Ground-Level  
Concentration (ug/m<sup>3</sup>): 192.6

MAGLC (ug/m<sup>3</sup>): 1738.1

Pollutant: isobutyl alcohol

TLV (mg/m<sup>3</sup>): 152

Maximum Hourly Emission Rate (lbs/hr): 0.5\*\*

Predicted 1-Hour Maximum Ground-Level  
Concentration (ug/m3): 95.8

MAGLC (ug/m3): 3619

\*Maximum emission rate from emissions units K001 through K009.

\*\*Maximum emission rate from emissions units K007 and K008.

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

- a. changes in the composition of the materials used (typically for coatings or cleanup materials), or the use of new materials, that would result in the emission of a compound with a lower Threshold Limit Value (TLV), as indicated in the most recent version of the handbook entitled "American Conference of Governmental Industrial Hygienists (ACGIH)," than the lowest TLV value previously modeled;
- b. changes in the composition of the materials, or use of new materials, that would result in an increase in emissions of any pollutant with a listed TLV that was proposed in the application and modeled; and
- c. physical changes to the emissions unit or its exhaust parameters (e.g., increased/ decreased exhaust flow, changes in stack height, changes in stack diameter, etc.).

If the permittee determines that the "Air Toxic Policy" will be satisfied for the above changes, the Ohio EPA will not consider the change(s) to be a "modification" under OAC rule 3745-31-01(VV)(1)(a)(ii), and a modification of the existing permit to install will not be required. If the change(s) is (are) defined as a modification under other provisions of the modification definition (other than (VV)(1)(a)(ii)), then the permittee shall obtain a final permit to install prior to the change.

The permittee shall collect, record, and retain the following information when it conducts

evaluations to determine that the changed emissions unit will still satisfy the "Air Toxic Policy:"

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

#### **D. Reporting Requirements**

1. The permittee shall notify the Director (the appropriate Ohio EPA District Office or local air agency) in writing if a "photochemically reactive material" (as defined in OAC 3745-21-01 (C)(5)) is employed in the emissions unit . The notification shall include a copy of such record and shall be sent to the Director (the appropriate Ohio EPA District Office or local air agency) within 45 days after such an occurrence.
2. The permittee shall submit deviation (excursion) reports which identify all exceedances of the rolling, 12-month usage limitations for non-heatset inks, aqueous coatings, concentrated fountain etch solutions, fountain solution additives, manual cleanup materials, and automatic cleanup materials and the rolling 12-month emission limitations for OC, any individual HAP, and combined HAPs and, for the first 12 calendar months of operation following the issuance of this permit, all exceedances of the maximum allowable cumulative non-heatset ink usage levels, aqueous coating usage levels, concentrated fountain etch solution usage levels, fountain solution additive usage levels, manual cleanup material usage levels, automatic cleanup material usage levels, emissions of any individual HAP levels, and emissions of combined HAPs levels.
3. The permittee shall notify the Director (the appropriate Ohio EPA District Office or local air agency) in writing if a non-heatset ink, an aqueous coating, or a concentrated fountain etch solution which exceeds the OC contents specified in section B.3 of these terms and conditions is

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employed in this emissions unit. The notification shall include a copy of such record and shall be sent to the Director (the appropriate Ohio EPA District Office or local air agency) within 30 days after such an occurrence.

4. The permittee shall notify the Director (the appropriate Ohio EPA District Office or local air agency) in writing if a cleanup material that has a vapor pressure of 10 mm Hg or greater is employed in this emissions unit. The notification shall include a copy of such record and shall be sent to the Director (the appropriate Ohio EPA District Office or local air agency) within 45 days after such an occurrence.
5. The permittee shall also submit annual reports which specify the total OC emissions from emissions units K007 and K008 combined for the previous calendar year. These reports shall be submitted by January 31 of each year.
6. The deviation reports shall be submitted in accordance with the requirements specified in the General Terms and Conditions of this permit.

#### **E. Testing Requirements**

1. Compliance with the emission limitations in sections A.1 and B.3 of these terms and conditions shall be determined in accordance with the following methods:

- a. Emission Limitations:

OC content of 25.0%, by weight, for non-heatset inks  
 OC content of 5.0%, by weight for aqueous coatings  
 OC content of 18.0%, by weight, for concentrated fountain etch solutions  
 No OC content limitation for fountain solution additives

Applicable Compliance Method:

Formulation data or USEPA Method 24 (for coatings) or 24A (for flexographic and rotogravure printing inks and related coatings) shall be used to determine the organic compound contents of the non-heatset inks, aqueous coatings, and concentrated fountain solutions.

- b. Emission Limitation:

4.13 pounds of OC per hour for non-heatset inks, aqueous coatings, concentrated fountain etch solutions, and fountain solution additives

Applicable Compliance Method:

Compliance shall be determined by the following equation:

[(maximum non-heat ink usage, in pounds per hour) x (0.25\*) x (0.05\*\*) + (maximum aqueous coating usage, in pounds per hour) x (0.05\*) + (maximum concentrated fountain etch solution usage, in pounds per hour) x (0.18\*) + (maximum concentrated fountain solution additive usage, in pounds per hour)]

\*Maximum allowable OC content for non-heatset inks, aqueous coatings, and concentrated fountain etch solutions.

\*\*Per Ohio EPA Division of Air Pollution Control Engineering Section Engineer Guide #68 dated July 7, 1997, emission factors provided in the answer to question number 3.

c. Emission Limitation:

The emissions of OC from emissions units K007 and K008 shall not exceed 39.2 tons per year, based upon a rolling, 12-month summation of the monthly emissions.

Applicable Compliance Method:

Compliance shall be demonstrated based upon the monthly record keeping as required by section C.2 of these terms and conditions. Formulation data or USEPA Method 24 (for coatings) or 24A (for flexographic and rotogravure printing inks and related coatings) shall be used to determine the organic compound contents of non-heatset inks, aqueous coatings, concentrated fountain etch solutions, fountain solution additives, manual cleanup materials, and automatic cleanup materials.

d. Emission Limitations:

The emissions of any individual hazardous air pollutant (HAP) from emissions unit K001 through K009 shall not exceed 8.0 tons per year, based upon a rolling, 12-month summation of the monthly emissions.

The emissions of combined hazardous air pollutants (HAPs) from emissions units K001 through K009 shall not exceed 20.0 tons per year, based upon a rolling, 12-month summation of the monthly emissions.

Applicable Compliance Method:

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Compliance shall be demonstrated based upon the monthly record keeping as required by section C.3 of these terms and conditions. Formulation data shall be used to determine the HAP contents of the non-heatset inks, aqueous coatings, coatings, concentrated fountain solutions, concentrated fountain etch solutions, fountain solution additives, and cleanup materials.

**F. Miscellaneous Requirements**

1. The terms and conditions in this Permit to Install 16-02284 shall supersede all the air pollution control requirements for K007 in Permit to Install 16-02021, issued on April 5, 2000.
2. The following terms and conditions of this permit are federally enforceable pursuant to OAC rule 3745-35-07: A.1, A.2.a, B.1, B.2, B.3, C.1, C.2, C.3, D.1, D.2, D.3, D.4, and D.5.

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

**A. Applicable Emissions Limitations and/or Control Requirements**

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

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/Requirements</u>	<u>Applicable Emissions Limitations/Control Measures</u>
K008 - Non-Heatset Sheetfed Printing Press No 214 - Sheetfed Press No 214 (the terms and conditions in this permit supercede the terms and conditions in PTI 16-02021 issued April 5, 2000)Modified.	OAC rule 3745-31-05(A)(3)	4.46 pounds of organic compounds (OC) per hour for non-heatset inks, aqueous coatings, concentrated fountain solutions, and fountain solution additives  The requirements of this rule also include compliance with the requirements of OAC rule 3745-35-07.
	OAC rule 3745-21-07(G)(2)	Exempt. See B.1 below.
	OAC rule 3745-35-07(B)	The emissions of OC from emissions units K007 and K008 shall not exceed 39.2 tons per year, based upon a rolling, 12-month summation of the monthly emissions.  See B.3 below.
		The emissions of any individual hazardous air pollutant (HAP) from emissions units K001 through K009 shall not exceed 8.0 tons per year, based upon a rolling, 12-month

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summation of the monthly emissions.

The emissions of combined hazardous air pollutants (HAPs) from emissions units K001 through K009 shall not exceed 20.0 tons per year, based upon a rolling, 12-month summation of the monthly emissions.

See A.2.a below.

**2. Additional Terms and Conditions**

**2.a** To ensure enforceability during the first 12 calendar months of operation following the issuance of this permit, the permittee shall not exceed the emission levels specified in the following table:

<u>Month(s)</u>	<u>Maximum Allowable Cumulative Emissions of Any Individual HAP (Tons)</u>	<u>Maximum Allowable Cumulative Emissions of Combined HAPs (Tons)</u>
1	0.7	1.7
1-2	1.3	3.3
1-3	2.0	5.0
1-4	2.7	6.7
1-5	3.3	8.3
1-6	4.0	10.0
1-7	4.7	11.7
1-8	5.3	13.3
1-9	6.0	15.0
1-10	6.7	16.7
1-11	7.3	18.3
1-12	8.0	20.0

After the first 12 calendar months of operation following the issuance of this permit, compliance with the annual emission limitations for any individual HAP and combined HAPs shall be based upon a rolling, 12-month summation of the monthly emissions.

**2.b** The hourly OC emission limitation regulated per OAC rule 3745-31-05(A)(3) is based on

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the emissions unit's potential to emit. Therefore, no record keeping or reporting is required to demonstrate compliance with this limit.

However, if any proposed change(s), such as with production capacity, the types and/or quantities of materials used or processed, or anything else that increases the potential emissions of any air pollutant, then the permittee shall apply for and obtain either a modification to the permit to install or a new final permit to install prior to the change(s).

**B. Operational Restrictions**

1. The permittee shall not employ any photochemically reactive materials, as defined in OAC rule 3745-21-01(C)(5), in this emissions unit. This determination shall be made based on the actual formulation of the materials after any final in-plant reducing or thinning and prior to application of the materials.
2. The permittee shall only employ cleanup materials that have a vapor pressure less than 10 mm Hg at 20 degrees Celsius (68 degrees Fahrenheit). The permittee shall store the cleanup cloths in closed containers.
3. The maximum annual non-heatset ink usage, aqueous coating usage, automatic cleanup material usage, manual cleanup material usage, concentrated fountain etch solution usage, and fountain solution additive usage for the combined emissions units K007 and K008 shall not exceed 150,000 pounds per year, 325,000 pounds per year, 36,900 pounds per year, 8,160 pounds per year, 15,400 pounds per year and 13,825 pounds per year, respectively, based upon a rolling, 12-month summation of the usage figures. The usage limitations result in a 39.2 tons of organic compounds (OC) per year emission limitation for K007 and K008. The OC content of the non-heatset inks, the aqueous coatings, and the concentrated fountain etch solutions employed shall not exceed 25.0% by weight, 5.0% by weight, and 18.0% by weight, respectively. Fountain solution additives shall not have a limitation on the OC content.

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

<u>Month(s)</u>	Maximum Allowable	Maximum Allowable	
	Cumulative Non-Heatset <u>Ink Usage (pounds)</u>	Cumulative Aqueous <u>Coating Usage (pounds)</u>	Cumulative Concentrated Fountain Etch Solution <u>Usage (pounds)</u>
1	12,500	27,083	1,283
1-2	25,000	54,167	2,567
1-3	37,500	81,250	3,850
1-4	50,000	108,333	5,133
1-5	62,500	135,417	6,417
1-6	75,000	162,500	7,700
1-7	87,500	189,583	8,983
1-8	100,000	216,667	10,267
1-9	112,500	243,750	11,550
1-10	125,000	270,833	12,833
1-11	137,500	297,917	14,117

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1-12

150,000

325,000

15,400

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<u>Month(s)</u>	<u>Maximum Allowable Cumulative Fountain Solution Additive Usage (pounds)</u>	<u>Maximum Allowable Cumulative Automatic Cleanup Material Usage (pounds)</u>	<u>Maximum Allowable Cumulative Manual Cleanup Material Usage (pounds)</u>
1	1,152	3,300	680
1-2	2,304	6,600	1,360
1-3	3,456	9,900	2,040
1-4	4,608	13,200	2,720
1-5	5,760	16,500	3,400
1-6	6,913	19,800	4,080
1-7	8,065	23,100	4,760
1-8	9,217	26,400	5,440
1-9	10,369	29,700	6,120
1-10	11,521	33,000	6,800
1-11	12,673	36,300	7,480
1-12	13,825	39,600	8,160

After the first 12 calendar months of operation following the issuance of this permit, compliance with the annual usage limitations shall be based upon a rolling, 12-month summation of the usage figures.

### C. Monitoring and/or Recordkeeping Requirements

1. The permittee shall maintain the following information for this emissions unit:
  - a. the MSDS sheets for each liquid organic material employed; and
  - b. documentation as to whether or not each material is a photochemically reactive material; and
  - c. for materials that are reduced or thinned prior to application, documentation as to whether or not the resulting material is a photochemically reactive material.
2. The permittee shall collect and record the following information for each month for emissions units K007 and K008:
  - a. the company identification for each non-heatset ink, aqueous coating, concentrated fountain etch solution, fountain solution additive, manual cleanup material, and automatic cleanup material employed;

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- b. the amount of each non-heatset ink, aqueous coating, concentrated fountain etch solution, fountain solution additive, manual cleanup material, and automatic cleanup material employed, in pounds;
- c. the total amount of all non-heatset inks, all aqueous coatings, all concentrated fountain etch solutions, all fountain solution additives, all manual cleanup materials, and all automatic cleanup materials employed, in pounds;
- d. the organic compound content of each non-heatset ink, aqueous coating, concentrated fountain etch solution, fountain solution additive, manual cleanup material, and automatic cleanup material employed, in weight percent;
- e. the organic compound emission rate from all non-heatset inks employed, in tons (i.e., the sum of  $[(b) \times (d)/100] \times 0.05^*$  for each non-heatset ink employed, and then divided by 2000);
- f. the organic compound emission rate from all aqueous coatings employed, in tons (i.e., the sum of  $[(b) \times (d)/100]$  for each aqueous coating, and then divided by 2000);
- g. the organic compound emission rate from all concentrated fountain etch solutions employed, in tons (i.e., the sum of  $[(b) \times (d)/100]$  for each concentrated fountain etch solution, and then divided by 2000);
- h. the organic compound emission rate from all fountain solution additives employed, in tons (i.e., the sum of  $[(b) \times (d)/100]$  for each fountain solution additive, and then divided by 2000);
- i. the organic compound emission rate from all manual cleanup materials employed, in tons (i.e., the sum of  $[(b) \times (d)/100] \times 0.5^{**}$  for each manual cleanup material, and then divided by 2000);
- j. the organic compound emission rate from all automatic cleanup materials employed, in tons (i.e., the sum of  $[(b) \times (d)/100]$  for each automatic cleanup materials, and then divided by 2000); and
- k. the total organic compound emission rate for this emissions unit, in tons per month ( i.e.,  $[(e) + (f) + (g) + (h) + (i) + (j)]$ ).
- l. beginning after the first 12 calendar months of operation following the issuance of this permit, the rolling, 12-month summations of the non-heatset ink usage figures, aqueous coating usage figures, concentrated fountain etch solution usage figures, fountain solution additive usage figures, manual cleanup material usage figures, automatic cleanup material

usage figures, and OC emissions for each month, in pounds or tons; and

- m. during the first 12 calendar months of operation following the issuance of this permit, the permittee shall record the cumulative non-heatset ink usage, aqueous coating usage, concentrated fountain etch solution usage, fountain solution additive usage, manual cleanup material usage, and automatic cleanup material usage for each month, in pounds.

\*Ohio EPA, Division of Air Pollution Control, Engineering Section, Engineering Guide #68 (dated July 7, 1997) states that only 5% of the ink solvent is emitted from non-heatset inks.

\*\*Ohio EPA, Division of Air Pollution Control, Engineering Section, Engineering Guide #68 (dated July 7, 1997) states 50% of the solvent is retained in the shop towel and 50% is emitted for cleanup solvents which have a composite vapor pressure less than 10 millimeters of mercury at 20 degrees Celsius.

3. The permittee shall collect and record the following information monthly for emissions units K001 through K009:
  - a. For emissions units K001, K002, K003, K004, K005, K006, and K009:
    - i. the company identification for each coating, concentrated fountain solution, and cleanup material employed;
    - ii. the amount of each coating, concentrated fountain solution, and cleanup employed, in pounds;
    - iii. the individual HAP content of each HAP of each coating, concentrated fountain solution, and cleanup material employed, in weight percent;
    - iv. the combined HAPs content of each coating, concentrated fountain solution, and cleanup material employed (the sum of all the individual HAP contents in (iii)), in weight percent;
    - v. the uncontrolled individual HAP emission rate for each HAP from all coatings employed, in pounds per month (i.e., the sum of [(ii)x(iii)/100] for each HAP for each coating employed);
    - vi. the controlled individual HAP emission rate for each HAP from all coatings employed, in tons per month (i.e., [(0.80)x(v)x(1-destruction efficiency\*)]\*\*, and

then divided by 2000 for each HAP);

- vii. the uncontrolled combined HAPs emission rate from all coatings employed, in pounds per month (i.e., the sum of  $[(ii) \times (iv) / 100]$  for each coating employed);
- viii. the controlled combined HAPs emission rate for each HAP from all coatings employed, in tons per month (i.e.,  $[(0.80) \times (vii) \times (1 - \text{destruction efficiency}^*)]^{**}$ , and then divided by 2000);
- ix. the uncontrolled individual HAP emission rate for each HAP from all concentrated fountain solutions employed, in pounds per month (i.e., the sum of  $[(ii) \times (iii) / 100]$  for each HAP for each fountain solution employed);
- x. the controlled individual HAP emission rate for each HAP from all concentrated fountain solutions employed, in tons per month (i.e.,  $[(ix) \times [1 - (0.7) \times \text{destruction efficiency}^*]]^{**}$ , and then divided by 2000 for each HAP);
- xi. the uncontrolled combined HAPs emission rate from all concentrated fountain solutions employed, in pounds per month (i.e., the sum of  $[(ii) \times (iv) / 100]$  for each fountain solution employed);
- xii. the controlled combined HAPs emission rate from all concentrated fountain solutions employed, in tons per month (i.e.,  $[(xi) \times [(1 - (0.7) \times \text{destruction efficiency}^*)]^{**}$ , and then divided by 2000);
- xiii. the controlled individual HAP emission rate for each HAP from all cleanup materials employed, in tons per month (i.e., the sum of  $(0.5) \times (ii) \times (iii)^{**}$  for each HAP for each cleanup material employed, and then divided by 2000);
- xiv. the controlled combined HAPs emission rate from all cleanup materials employed, in tons per month (i.e., the sum of  $(0.5) \times (ii) \times (iv)^{**}$  for each cleanup material employed, and then divided by 2000);
- xv. the individual HAP emission rate for each HAP from all cleanup materials, all concentrated fountain solutions, and all coatings employed, in tons per month (i.e.,  $[(vi) + (x) + (xiii)]$  for each HAP); and
- xvi. the combined HAPs emission rate from all cleanup materials, all concentrated fountain solutions, and all coatings employed, in tons per month (i.e.,  $[(viii) + (xii) + (xiv)]$ ).

- b. For emissions units K007 and K008:

- i. the company identification for each non-heatset ink, aqueous coating, concentrated fountain etch solution, fountain solution additive, manual cleanup material, and automatic cleanup material employed;
- ii. the amount of each non-heatset ink, aqueous coating, concentrated fountain etch solution, fountain solution additive, manual cleanup material, and automatic cleanup material employed, in pounds;
- iii. the individual HAP content of each HAP of each non-heatset ink, aqueous coating, concentrated fountain etch solution, fountain solution additive, manual cleanup material, and automatic cleanup material employed, in weight percent;
- iv. the combined HAPs content of each non-heatset ink, aqueous coating, concentrated fountain etch solution, fountain solution additive, manual cleanup material, and automatic cleanup material employed (the sum of all the individual HAP contents in (iii)), in weight percent;
- v. the individual HAP emission rate for each HAP from all non-heatset inks employed, in tons (i.e., the sum of  $[(ii) \times (iii)/100] \times 0.05^{***}$  for each HAP for each non-heatset ink employed, and then divided by 2000);
- vi. the combined HAPs emission rate from all non-heatset inks employed, in tons (i.e., the sum of  $[(ii) \times (iv)/100] \times 0.05^{***}$  for each non-heatset ink employed, and then divided by 2000);
- vii. the individual HAP emission rate for each HAP from all aqueous coatings employed, in tons (i.e., the sum of  $[(ii) \times (iii)/100]$  for each HAP for each aqueous coating employed, and then divided by 2000);
- viii. the combined HAPs emission rate from all aqueous coatings employed, in tons (i.e., the sum of  $[(ii) \times (iv)/100]$  for each aqueous coating employed, and then divided by 2000);
- ix. the individual HAP emission rate for each HAP from all concentrated fountain etch solutions employed, in tons (i.e., the sum of  $[(ii) \times (iii)/100]$  for each HAP for each concentrated fountain etch solution employed, and then divided by 2000);
- x. the combined HAPs emission rate from all concentrated fountain etch solutions employed, in tons (i.e., the sum of  $[(ii) \times (iv)/100]$  for each concentrated fountain

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etch solution employed, and then divided by 2000);

- xi. the individual HAP emission rate for each HAP from all fountain solution additives employed, in tons (i.e., the sum of [(ii) x (iii)/100] for each HAP for each fountain solution additive employed, and then divided by 2000);
  - xii. the combined HAPs emission rate from all fountain solution additives employed, in tons (i.e., the sum of [(ii) x (iv)/100] for each fountain solution additive employed, and then divided by 2000);
  - xiii. the individual HAP emission rate for each HAP from all manual cleanup materials employed, in tons (i.e., the sum of [(ii) x (iii)/100] x 0.5\*\*\*\* for each HAP for each manual cleanup material employed, and then divided by 2000);
  - xiv. the combined HAPs emission rate from all manual cleanup materials employed, in tons (i.e., the sum of [(ii) x (iv)/100] x 0.5\*\*\*\* for each manual cleanup material employed, and then divided by 2000);
  - xv. the individual HAP emission rate for each HAP from all automatic cleanup materials employed, in tons (i.e., the sum of [(ii) x (iii)/100] for each HAP for each automatic cleanup material employed, and then divided by 2000);
  - xvi. the combined HAPs emission rate from all automatic cleanup materials employed, in tons (i.e., the sum of [(ii) x (iv)/100] for each automatic cleanup material employed, and then divided by 2000);
  - xvii. the individual HAP emission rate for each HAP from all non-heatset ink, all aqueous coating, all concentrated fountain etch solution, all fountain solution additive, all manual cleanup material, and all automatic cleanup material employed, in tons per month ( i.e., [(v) + (vii) + (ix) + (xi) + (xiii) + (xv)] for each HAP); and
  - xviii. the combined HAPs emission rate from all non-heatset ink, all aqueous coating, all concentrated fountain etch solution, all fountain solution additive, all manual cleanup material, and all automatic cleanup material employed, in tons per month ( i.e., [(vi) + (viii) + (x) + (xii) + (xiv) + (xvi)]).
- c. For emissions unit K001 through K009:
- i. the total individual HAP emission rate for each HAP, in tons per month (i.e., (4.a.xv) + (4.b.xvii) for each HAP);
  - ii. the total combined HAPs emission rate, in tons per month (i.e., (4.a.xvi) +

(4.b.xviii));

- iii. beginning after the first 12 calendar months of operation following the issuance of this permit, the rolling, 12-month summations of individual HAP emissions for each HAP and of combined HAPs emissions for each month, in tons; and
- iv. during the first 12 calendar months of operation following the issuance of this permit, the permittee shall record the cumulative emissions of individual HAP for each HAP and the cumulative emissions of combined HAPs for each month, in tons;
- v. during the first 12 calendar months of operation following the issuance of this permit if the cumulative emissions of combined HAPs for each month are less than or equal to the allowable cumulative emissions of any individual HAP for each month, then cumulative emissions for each individual HAP do not need to be calculated; and
- vi. beginning after the first 12 calendar months of operation following the issuance of this permit if the rolling, 12-month summation of combined HAPs is 8.0 tons per year or less for each month, then the rolling, 12-month summations of each individual HAP do not need to be calculated unless any subsequent rolling, 12-month summation exceeds 8.0 tons per year.

\* The permittee shall use the destruction efficiency from the most recent performance test that demonstrated that the emissions unit(s) was (were) in compliance.

\*\*Per Ohio EPA Division of Air Pollution Control Engineering Section Engineer Guide #56 revised June 15, 1999 and based on a successful demonstration of negative pressure in the dryer ovens, the following assumptions shall be used in calculating the HAP emissions: 20 percent, by weight, of the solvent in the coatings is retained in the web or substrate and the remaining 80 percent, by weight, is vented to the incinerator; 30 percent, by weight, of the fountain solution emissions are fugitive and the remaining 70 percent, by weight, is vented to the incinerator for fountain solutions containing only alcohol substitutes; and 50 percent, by weight, of the manual cleanup material is retained in the cleanup cloths and the remaining 50 percent, by weight, is fugitive emissions if the solvent has a vapor pressure of 10 mm Hg or lower at 20 degrees Celsius (68 degrees Fahrenheit).

\*\*\*Ohio EPA, Division of Air Pollution Control, Engineering Section, Engineering Guide #68 (dated July 7, 1997) states that only 5% of the ink solvent is emitted from non-heatset inks.

\*\*\*\*Ohio EPA, Division of Air Pollution Control, Engineering Section, Engineering Guide #68 (dated July 7, 1997) states 50% of the solvent is retained in the shop towel and 50% is emitted for cleanup solvents which have a composite vapor pressure less than 10 millimeters of mercury at 20 degrees Celsius.

- The permit to install for this emissions unit (K008) was evaluated based on the actual materials (typically coatings and cleanup materials) and the design parameters of the emissions unit's exhaust system, as specified by the permittee in the permit to install application. The Ohio EPA's "Review of New Sources of Air Toxic Emissions" policy ("Air Toxic Policy") was applied for each pollutant emitted by this emissions unit using data from the permit to install application and the SCREEN 3.0 model (or other Ohio EPA approved model). The predicted 1-hour maximum ground-level concentration from the use of the SCREEN 3.0 model was compared to the Maximum Acceptable Ground-Level Concentration (MAGLC). The following summarizes the results of the modeling for the "worst case" pollutant(s):

Pollutant: ethylene glycol n-butyl ether

TLV (mg/m<sup>3</sup>): 97

Maximum Hourly Emission Rate (lbs/hr): 1.66\*

Predicted 1-Hour Maximum Ground-Level  
Concentration (ug/m<sup>3</sup>): 320.0

MAGLC (ug/m<sup>3</sup>): 2309.5

Pollutant: ethylene glycol

TLV (mg/m<sup>3</sup>): 73

Maximum Hourly Emission Rate (lbs/hr): 1.06\*

Predicted 1-Hour Maximum Ground-Level  
Concentration (ug/m<sup>3</sup>): 192.6

MAGLC (ug/m<sup>3</sup>): 1738.1

Pollutant: isobutyl alcohol

TLV (mg/m<sup>3</sup>): 152

Maximum Hourly Emission Rate (lbs/hr): 0.5\*\*

Predicted 1-Hour Maximum Ground-Level  
Concentration (ug/m3): 95.8

MAGLC (ug/m3): 3619

\*Maximum emission rate from emissions units K001 through K009.

\*\*Maximum emission rate from emissions units K007 and K008.

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

- a. changes in the composition of the materials used (typically for coatings or cleanup materials), or the use of new materials, that would result in the emission of a compound with a lower Threshold Limit Value (TLV), as indicated in the most recent version of the handbook entitled "American Conference of Governmental Industrial Hygienists (ACGIH)," than the lowest TLV value previously modeled;
- b. changes in the composition of the materials, or use of new materials, that would result in an increase in emissions of any pollutant with a listed TLV that was proposed in the application and modeled; and
- c. physical changes to the emissions unit or its exhaust parameters (e.g., increased/ decreased exhaust flow, changes in stack height, changes in stack diameter, etc.).

If the permittee determines that the "Air Toxic Policy" will be satisfied for the above changes, the Ohio EPA will not consider the change(s) to be a "modification" under OAC rule 3745-31-01(VV)(1)(a)(ii), and a modification of the existing permit to install will not be required. If the change(s) is (are) defined as a modification under other provisions of the modification definition (other than (VV)(1)(a)(ii)), then the permittee shall obtain a final permit to install prior to the change.

The permittee shall collect, record, and retain the following information when it conducts

Emissions Unit ID: **K008**

evaluations to determine that the changed emissions unit will still satisfy the "Air Toxic Policy:"

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

#### **D. Reporting Requirements**

1. The permittee shall notify the Director (the appropriate Ohio EPA District Office or local air agency) in writing if a "photochemically reactive material" (as defined in OAC 3745-21-01 (C)(5)) is employed in the emissions unit . The notification shall include a copy of such record and shall be sent to the Director (the appropriate Ohio EPA District Office or local air agency) within 45 days after such an occurrence.
2. The permittee shall submit deviation (excursion) reports which identify all exceedances of the rolling, 12-month usage limitations for non-heatset inks, aqueous coatings, concentrated fountain etch solutions, fountain solution additives, manual cleanup materials, and automatic cleanup materials and the rolling 12-month emission limitations for OC, any individual HAP, and combined HAPs and, for the first 12 calendar months of operation following the issuance of this permit, all exceedances of the maximum allowable cumulative non-heatset ink usage levels, aqueous coating usage levels, concentrated fountain etch solution usage levels, fountain solution additive usage levels, manual cleanup material usage levels, automatic cleanup material usage levels, emissions of any individual HAP levels, and emissions of combined HAPs levels.
3. The permittee shall notify the Director (the appropriate Ohio EPA District Office or local air agency) in writing if a non-heatset ink, an aqueous coating, or a concentrated fountain etch solution which exceeds the OC contents specified in section B.3 of these terms and conditions is

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employed in this emissions unit. The notification shall include a copy of such record and shall be sent to the Director (the appropriate Ohio EPA District Office or local air agency) within 30 days after such an occurrence.

4. The permittee shall notify the Director (the appropriate Ohio EPA District Office or local air agency) in writing if a cleanup material that has a vapor pressure of 10 mm Hg or greater is employed in this emissions unit. The notification shall include a copy of such record and shall be sent to the Director (the appropriate Ohio EPA District Office or local air agency) within 45 days after such an occurrence.
5. The permittee shall also submit annual reports which specify the total OC emissions from emissions units K007 and K008 combined for the previous calendar year. These reports shall be submitted by January 31 of each year.
6. The deviation reports shall be submitted in accordance with the requirements specified in the General Terms and Conditions of this permit.

**E. Testing Requirements**

1. Compliance with the emission limitations in sections A.1 and B.3 of these terms and conditions shall be determined in accordance with the following methods:

- a. Emission Limitations:

OC content of 25.0%, by weight, for non-heatset inks

OC content of 5.0%, by weight for aqueous coatings

OC content of 18.0%, by weight, for concentrated fountain etch solutions

No OC content limitation for fountain solution additives

Applicable Compliance Method:

Formulation data or USEPA Method 24 (for coatings) or 24A (for flexographic and rotogravure printing inks and related coatings) shall be used to determine the organic compound contents of the non-heatset inks, aqueous coatings, and concentrated fountain etch solutions.

- b. Emission Limitation:

4.46 pounds of OC per hour for non-heatset inks, aqueous coatings, concentrated fountain etch solutions, and fountain solution additives

Applicable Compliance Method:

Compliance shall be determined by the following equation:

$$[(\text{maximum non-heat ink usage, in pounds per hour}) \times (0.25^*) \times (0.05^{**}) + (\text{maximum aqueous coating usage, in pounds per hour}) \times (0.05^*) + (\text{maximum concentrated fountain etch solution usage, in pounds per hour}) \times (0.18^*) + (\text{maximum concentrated fountain solution additive usage, in pounds per hour})]$$

\*Maximum allowable OC content for non-heatset inks, aqueous coatings, and concentrated fountain etch solutions.

\*\*Per Ohio EPA Division of Air Pollution Control Engineering Section Engineer Guide #68 dated July 7, 1997, emission factors provided in the answer to question number 3.

c. Emission Limitation:

The emissions of OC from emissions units K007 and K008 shall not exceed 39.2 tons per year, based upon a rolling, 12-month summation of the monthly emissions.

Applicable Compliance Method:

Compliance shall be demonstrated based upon the monthly record keeping as required by section C.2 of these terms and conditions. Formulation data or USEPA Method 24 (for coatings) or 24A (for flexographic and rotogravure printing inks and related coatings) shall be used to determine the organic compound contents of non-heatset inks, aqueous coatings, concentrated fountain etch solutions, fountain solution additives, manual cleanup materials, and automatic cleanup materials.

d. Emission Limitations:

The emissions of any individual hazardous air pollutant (HAP) from emissions unit K001 through K009 shall not exceed 8.0 tons per year, based upon a rolling, 12-month summation of the monthly emissions.

The emissions of combined hazardous air pollutants (HAPs) from emissions units K001 through K009 shall not exceed 20.0 tons per year, based upon a rolling, 12-month summation of the monthly emissions.

Applicable Compliance Method:

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Compliance shall be demonstrated based upon the monthly record keeping as required by section C.3 of these terms and conditions. Formulation data shall be used to determine the HAP contents of the non-heatset inks, aqueous coatings, coatings, concentrated fountain solutions, concentrated fountain etch solutions, fountain solution additives, and cleanup materials.

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**PTI A**

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**F. Miscellaneous Requirements**

1. The terms and conditions in this Permit to Install 16-02284 shall supersede all the air pollution control requirements for K008 in Permit to Install 16-02021, issued on April 5, 2000.
2. The following terms and conditions of this permit are federally enforceable pursuant to OAC rule 3745-35-07: A.1, A.2.a, B.1, B.2, B.3, C.1, C.2, C.3, D.1, D.2, D.3, D.4, and D.5.

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

**A. Applicable Emissions Limitations and/or Control Requirements**

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

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/Requirements</u>
K009 - 8-Unit Harris M-1000BE Heatset Web Offset Printing Press No 210 - Harris Press No 210 - Modified.	OAC rule 3745-31-05(A)(3)
	OAC rule 3745-17-07
	OAC rule 3745-17-11
	OAC rule 3745-21-07(G)(2)
	OAC rule 3745-35-07(B)

See A.2.a below.

Applicable Emissions Limitations/Control Measures

3.05 pounds of organic compounds (OC) per hour for coatings and fountain solutions

3.2 tons of PE per year (including combustion emissions)

Natural gas combustion emissions from the RTO thermal incinerator shall not exceed the following:

0.72 pound of CO per hour and 3.2 tons of CO per year;

0.86 pound of NOx per hour and 3.8 tons of NOx per year; and

0.10 pound of OC per hour and 0.4 ton of OC per year.

Natural gas combustion emissions from the dryer oven shall not exceed the following:

1.04 pounds of CO per hour and 4.6 tons of CO per year;

1.23 pounds of NOx per hour and 5.4 tons of NOx per year; and

0.14 pound of OC per hour and 0.6 ton of OC per year.

The requirements of this rule also include compliance with the requirements of OAC rule 3745-17-07, OAC rule 3745-17-11, and OAC rule 3745-35-07.

Visible particulate emissions from any stack shall not exceed 20% opacity as a 6-minute average, except as provided by the rule.

0.74 pound of particulate emissions (PE) per hour (including combustion emissions)

Exempt. See B.1 below.

The control (destruction) efficiency of the RTO thermal incinerator shall be at least 95%, by weight for OC and organic HAP.

The emissions of OC from emissions units K001, K002, K003, K004, K005, K006, and K009 shall not exceed 48.3 tons per year, based upon a rolling, 12-month summation of the monthly emissions.

See B.5 below.

The emissions of any individual hazardous air pollutant (HAP) from emissions units K001 through K009 shall not exceed 8.0 tons per year, based upon a rolling, 12-month summation of the monthly emissions.

The emissions of combined hazardous air pollutants (HAPs) from emissions units K001 through K009 shall not exceed 20.0 tons per year, based upon a rolling, 12-month summation of the monthly emissions.

## 2. Additional Terms and Conditions

- 2.a** To ensure enforceability during the first 12 calendar months of operation following the issuance of this permit, the permittee shall not exceed the emission levels specified in the following table:

<u>Month(s)</u>	<u>Maximum Allowable Cumulative Emissions of Any Individual HAP (Tons)</u>	<u>Maximum Allowable Cumulative Emissions of Combined HAPs (Tons)</u>
1	0.7	1.7
1-2	1.3	3.3
1-3	2.0	5.0
1-4	2.7	6.7
1-5	3.3	8.3
1-6	4.0	10.0
1-7	4.7	11.7
1-8	5.3	13.3
1-9	6.0	15.0
1-10	6.7	16.7
1-11	7.3	18.3
1-12	8.0	20.0

After the first 12 calendar months of operation following the issuance of this permit, compliance with the annual emission limitations for any individual HAP and combined HAPs shall be based upon a rolling, 12-month summation of the monthly emissions.

- 2.b** The hourly OC emission limitation regulated per OAC rule 3745-31-05(A)(3) is based on the emissions unit's potential to emit. Therefore, no record keeping or reporting is required to demonstrate compliance with this limit.

However, if any proposed change(s), such as with production capacity, the types and/or quantities of materials used or processed, or anything else that increases the potential emissions of any air pollutant, then the permittee shall apply for and obtain either a modification to the permit to install or a new final permit to install prior to the change(s).

- 2.c** The hourly and annual CO, NO<sub>x</sub>, and OC emission limitations from natural gas combustion and the hourly and annual PE emissions limitations regulated per OAC rule 3745-31-05(A)(3) are based on the emissions unit's potential to emit. Therefore, no record keeping or reporting is required to demonstrate compliance with these limits.

**B. Operational Restrictions**

1. The permittee shall not employ any photochemically reactive materials, as defined in OAC rule 3745-21-01(C)(5), in this emissions unit. This determination shall be made based on the actual formulation of the materials after any final in-plant reducing or thinning and prior to application of the materials.
2. The OC and organic HAP emissions from this emissions unit shall be vented to the RTO thermal incinerator when the emissions unit is in operation.
3. The average combustion temperature within the RTO thermal incinerator, for any 3-hour block of time, shall not be more than 50 degrees Fahrenheit below the average temperature during the most recent emission test that demonstrated the emissions unit(s) was (were) in compliance.
4. The maximum annual coating usage, cleanup material usage, and concentrated fountain solution usage for emissions units K001, K002, K003, K004, K005, K006, and K009 shall not exceed 2,200,000 pounds per year, 91,080 pounds per year, and 228,253 pounds per year, respectively, based upon a rolling, 12-month summation of the usage figures. The usage limitations result in a 48.3 tons of organic compounds (OC) per year emission limitation for K001 through K006 and K009. The OC content of the coatings and the concentrated fountain solutions employed shall not exceed 45.0% by weight and 15.0% by weight, respectively.

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

<u>Month(s)</u>	<u>Maximum Allowable Cumulative Coating Usage (pounds)</u>	<u>Maximum Allowable Cumulative Cleanup Material Usage (pounds)</u>	<u>Maximum Allowable Cumulative Concentrated Fountain Solution Usage (pounds)</u>
1	183,333	7,590	19,021
1-2	366,667	15,180	38,042
1-3	550,000	22,770	57,063
1-4	733,333	30,360	76,084
1-5	916,667	37,950	95,105
1-6	1,100,000	45,540	114,127
1-7	1,283,333	53,130	133,148
1-8	1,466,667	60,720	152,169
1-9	1,650,000	68,310	171,190
1-10	1,866,333	75,900	190,211
1-11	2,016,677	83,490	209,232

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1-12	2,200,000	91,080	228,253

After the first 12 calendar months of operation following the issuance of this permit, compliance with the annual usage limitations shall be based upon a rolling, 12-month summation of the usage figures.

5. The permittee shall only employ cleanup materials that have a vapor pressure that is less than 10 mm Hg at 20 degrees Celsius (68 degrees Fahrenheit). The permittee shall store the cleanup cloths in closed containers.
6. The dryer oven for this emissions unit shall only employ natural gas.
7. The permittee shall not employ fountain solutions that contain alcohol in this emissions unit.
8. The permittee shall only employ automatic blanket wash cleanup that contains no organic solvent in this emissions unit. Only the manual cleanup material can contain organic solvents.

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

1. The permittee shall maintain the following information for this emissions unit:
  - a. the MSDS sheets for each liquid organic material employed;
  - b. documentation as to whether or not each material is a photochemically reactive material; and
  - c. for materials that are reduced or thinned prior to application, documentation as to whether or not the resulting material is a photochemically reactive material.
2. The permittee shall maintain the following information for this emissions unit:
  - a. the MSDS sheets for each fountain solution employed; and
  - b. documentation as to whether or not each fountain solution contains any alcohol.
3. The permittee shall maintain documentation of the vapor pressure, in millimeters of mercury at 20 degrees Celsius (68 degrees Fahrenheit) for each cleanup material employed.
4. The permittee shall collect and record the following information monthly for emissions units K001, K002, K003, K004, K005, K006, and K009:
  - a. the company identification for each coating, concentrated fountain solution, and cleanup

- material employed;
- b. the amount of each coating, concentrated fountain solution, and cleanup employed, in pounds;
  - c. the total amount of all coatings, all concentrated fountain solutions, and all cleanup materials employed, in pounds;
  - d. the OC content of each coating, concentrated fountain solution, and cleanup material employed, in weight percent;
  - e. the total uncontrolled OC emission rate from all coatings employed, in pounds per month (i.e., [(c)x(the worst-case OC content in weight percent of all the coatings employed in the month)/100] or the sum of [(b)x(d)/100] for each coating employed);
  - f. the total controlled OC emission rate from all coatings employed, in tons per month (i.e., [(0.80)x(e)x(1-destruction efficiency\*)]\*\*, and then divided by 2000);
  - g. the total uncontrolled OC emission rate from all concentrated fountain solutions employed, in pounds per month (i.e., the sum of [(b)x(d)/100] for each concentrated fountain solution employed);
  - h. the total controlled OC emission rate from all concentrated fountain solutions employed, in tons per month (i.e., [(g)x(1- (0.7) x destruction efficiency\*)]\*\*, and then divided by 2000);
  - i. the total controlled OC emission rate from all cleanup materials employed, in tons per month (i.e., the sum of (0.5)x(b)x(d)\*\* for each cleanup material employed, and then divided by 2000);
  - j. the total OC emission rate from the emissions units K001, K002, K003, K004, K005, K006, and K009, in tons per month (i.e., [(f)+(h)+(i)]).
  - k. beginning after the first 12 calendar months of operation following the issuance of this permit, the rolling, 12-month summations of the coating usage figures, concentrated fountain solution usage figures, cleanup material usage figures, and OC emissions for each month, in pounds or tons; and
  - l. during the first 12 calendar months of operation following the issuance of this permit, the permittee shall record the cumulative coating usage, concentrated fountain solution usage,

and cleanup material usage for each month, in pounds.

\* The permittee shall use the destruction efficiency from the most recent performance test that demonstrated that the emissions unit(s) was (were) in compliance.

\*\*Per Ohio EPA Division of Air Pollution Control Engineering Section Engineer Guide #56 revised June 15, 1999 and based on a successful demonstration of negative pressure in the dryer oven in accordance with section E.1 of the testing requirements, the following assumptions shall be used in calculating the OC emissions: 20 percent, by weight, of the solvent in the coatings is retained in the web or substrate and the remaining 80 percent, by weight, is vented to the incinerator; 30 percent, by weight, of the fountain solution emissions are fugitive and the remaining 70 percent, by weight, is vented to the incinerator for fountain solutions containing only alcohol substitutes; and 50 percent, by weight, of the manual cleanup material is retained in the cleanup cloths and the remaining 50 percent, by weight, is fugitive emissions if the solvent has a vapor pressure of 10 mm Hg or lower at 20 degrees Celsius (68 degrees Fahrenheit).

5. The permittee shall collect and record the following information monthly for emissions units K001 through K009:
  - a. For emissions units K001, K002, K003, K004, K005, K006, and K009:
    - i. the company identification for each coating, concentrated fountain solution, and cleanup material employed;
    - ii. the amount of each coating, concentrated fountain solution, and cleanup employed, in pounds;
    - iii. the individual HAP content of each HAP of each coating, concentrated fountain solution, and cleanup material employed, in weight percent;
    - iv. the combined HAPs content of each coating, concentrated fountain solution, and cleanup material employed (the sum of all the individual HAP contents in (iii)), in weight percent;
    - v. the uncontrolled individual HAP emission rate for each HAP from all coatings employed, in pounds per month (i.e., the sum of [(ii)x(iii)/100] for each HAP for each coating employed);
    - vi. the controlled individual HAP emission rate for each HAP from all coatings employed, in tons per month (i.e., [(0.80)x(v)x(1-destruction efficiency\*)]\*\*, and then divided by 2000 for each HAP);

- vii. the uncontrolled combined HAPs emission rate from all coatings employed, in pounds per month (i.e., the sum of  $[(ii) \times (iv) / 100]$  for each coating employed);
- viii. the controlled combined HAPs emission rate for each HAP from all coatings employed, in tons per month (i.e.,  $[(0.80) \times (vii) \times (1 - \text{destruction efficiency}^*)]^{**}$ , and then divided by 2000);
- ix. the uncontrolled individual HAP emission rate for each HAP from all concentrated fountain solutions employed, in pounds per month (i.e., the sum of  $[(ii) \times (iii) / 100]$  for each HAP for each fountain solution employed);
- x. the controlled individual HAP emission rate for each HAP from all concentrated fountain solutions employed, in tons per month (i.e.,  $[(ix) \times [1 - (0.7) \times \text{destruction efficiency}^*]]^{**}$ , and then divided by 2000 for each HAP);
- xi. the uncontrolled combined HAPs emission rate from all concentrated fountain solutions employed, in pounds per month (i.e., the sum of  $[(ii) \times (iv) / 100]$  for each fountain solution employed);
- xii. the controlled combined HAPs emission rate from all concentrated fountain solutions employed, in tons per month (i.e.,  $[(xi) \times [(1 - (0.7) \times \text{destruction efficiency}^*)]^{**}$ , and then divided by 2000);
- xiii. the controlled individual HAP emission rate for each HAP from all cleanup materials employed, in tons per month (i.e., the sum of  $(0.5) \times (ii) \times (iii)^{**}$  for each HAP for each cleanup material employed, and then divided by 2000);
- xiv. the controlled combined HAPs emission rate from all cleanup materials employed, in tons per month (i.e., the sum of  $(0.5) \times (ii) \times (iv)^{**}$  for each cleanup material employed, and then divided by 2000);
- xv. the individual HAP emission rate for each HAP from all cleanup materials, all concentrated fountain solutions, and all coatings employed, in tons per month (i.e.,  $[(vi) + (x) + (xiii)]$  for each HAP); and
- xvi. the combined HAPs emission rate from all cleanup materials, all concentrated fountain solutions, and all coatings employed, in tons per month (i.e.,  $[(viii) + (xii) + (xiv)]$ ).

- b. For emissions units K007 and K008:
- i. the company identification for each non-heatset ink, aqueous coating, concentrated fountain etch solution, fountain solution additive, manual cleanup material, and automatic cleanup material employed;
  - ii. the amount of each non-heatset ink, aqueous coating, concentrated fountain etch solution, fountain solution additive, manual cleanup material, and automatic cleanup material employed, in pounds;
  - iii. the individual HAP content of each HAP of each non-heatset ink, aqueous coating, concentrated fountain etch solution, fountain solution additive, manual cleanup material, and automatic cleanup material employed, in weight percent;
  - iv. the combined HAPs content of each non-heatset ink, aqueous coating, concentrated fountain etch solution, fountain solution additive, manual cleanup material, and automatic cleanup material employed (the sum of all the individual HAP contents in (iii)), in weight percent;
  - v. the individual HAP emission rate for each HAP from all non-heatset inks employed, in tons (i.e., the sum of  $[(ii) \times (iii)/100] \times 0.05^{***}$  for each HAP for each non-heatset ink employed, and then divided by 2000);
  - vi. the combined HAPs emission rate from all non-heatset inks employed, in tons (i.e., the sum of  $[(ii) \times (iv)/100] \times 0.05^{***}$  for each non-heatset ink employed, and then divided by 2000);
  - vii. the individual HAP emission rate for each HAP from all aqueous coatings employed, in tons (i.e., the sum of  $[(ii) \times (iii)/100]$  for each HAP for each aqueous coating employed, and then divided by 2000);
  - viii. the combined HAPs emission rate from all aqueous coatings employed, in tons (i.e., the sum of  $[(ii) \times (iv)/100]$  for each aqueous coating employed, and then divided by 2000);
  - ix. the individual HAP emission rate for each HAP from all concentrated fountain etch solutions employed, in tons (i.e., the sum of  $[(ii) \times (iii)/100]$  for each HAP for each concentrated fountain etch solution employed, and then divided by 2000);
  - x. the combined HAPs emission rate from all concentrated fountain etch solutions employed, in tons (i.e., the sum of  $[(ii) \times (iv)/100]$  for each concentrated fountain etch solution employed, and then divided by 2000);

- xi. the individual HAP emission rate for each HAP from all fountain solution additives employed, in tons (i.e., the sum of [(ii) x (iii)/100] for each HAP for each fountain solution additive employed, and then divided by 2000);
  - xii. the combined HAPs emission rate from all fountain solution additives employed, in tons (i.e., the sum of [(ii) x (iv)/100] for each fountain solution additive employed, and then divided by 2000);
  - xiii. the individual HAP emission rate for each HAP from all manual cleanup materials employed, in tons (i.e., the sum of [(ii) x (iii)/100] x 0.5\*\*\*\* for each HAP for each manual cleanup material employed, and then divided by 2000);
  - xiv. the combined HAPs emission rate from all manual cleanup materials employed, in tons (i.e., the sum of [(ii) x (iv)/100] x 0.5\*\*\*\* for each manual cleanup material employed, and then divided by 2000);
  - xv. the individual HAP emission rate for each HAP from all automatic cleanup materials employed, in tons (i.e., the sum of [(ii) x (iii)/100] for each HAP for each automatic cleanup material employed, and then divided by 2000);
  - xvi. the combined HAPs emission rate from all automatic cleanup materials employed, in tons (i.e., the sum of [(ii) x (iv)/100] for each automatic cleanup material employed, and then divided by 2000);
  - xvii. the individual HAP emission rate for each HAP from all non-heatset ink, all aqueous coating, all concentrated fountain etch solution, all fountain solution additive, all manual cleanup material, and all automatic cleanup material employed, in tons per month ( i.e., [(v) + (vii) + (ix) + (xi) + (xiii) + (xv)] for each HAP); and
  - xviii. the combined HAPs emission rate from all non-heatset ink, all aqueous coating, all concentrated fountain etch solution, all fountain solution additive, all manual cleanup material, and all automatic cleanup material employed, in tons per month ( i.e., [(vi) + (viii) + (x) + (xii) + (xiv) + (xvi)]).
- c. For emissions unit K001 through K009:
- i. the total individual HAP emission rate for each HAP, in tons per month (i.e., (4.a.xv) + (4.b.xvii) for each HAP);

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- ii. the total combined HAPs emission rate, in tons per month (i.e., (4.a.xvi) + (4.b.xviii));
- iii. beginning after the first 12 calendar months of operation following the issuance of this permit, the rolling, 12-month summations of individual HAP emissions for each HAP and of combined HAPs emissions for each month, in tons; and
- iv. during the first 12 calendar months of operation following the issuance of this permit, the permittee shall record the cumulative emissions of individual HAP for each HAP and the cumulative emissions of combined HAPs for each month, in tons;
- v. during the first 12 calendar months of operation following the issuance of this permit if the cumulative emissions of combined HAPs for each month are less than or equal to the allowable cumulative emissions of any individual HAP for each month, then cumulative emissions for each individual HAP do not need to be calculated; and
- vi. beginning after the first 12 calendar months of operation following the issuance of this permit if the rolling, 12-month summation of combined HAPs is 8.0 tons per year or less for each month, then the rolling, 12-month summations of each individual HAP do not need to be calculated unless any subsequent rolling, 12-month summation exceeds 8.0 tons per year.

\* The permittee shall use the destruction efficiency from the most recent performance test that demonstrated that the emissions unit(s) was (were) in compliance.

\*\*Per Ohio EPA Division of Air Pollution Control Engineering Section Engineer Guide #56 revised June 15, 1999 and based on a successful demonstration of negative pressure in the dryer ovens, the following assumptions shall be used in calculating the HAP emissions: 20 percent, by weight, of the solvent in the coatings is retained in the web or substrate and the remaining 80 percent, by weight, is vented to the incinerator; 30 percent, by weight, of the fountain solution emissions are fugitive and the remaining 70 percent, by weight, is vented to the incinerator for fountain solutions containing only alcohol substitutes; and 50 percent, by weight, of the manual cleanup material is retained in the cleanup cloths and the remaining 50 percent, by weight, is fugitive emissions if the solvent has a vapor pressure of 10 mm Hg or lower at 20 degrees Celsius (68 degrees Fahrenheit).

\*\*\*Ohio EPA, Division of Air Pollution Control, Engineering Section, Engineering Guide #68 (dated July 7, 1997) states that only 5% of the ink solvent is emitted from non-heatset inks.

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\*\*\*\*Ohio EPA, Division of Air Pollution Control, Engineering Section, Engineering Guide #68 (dated July 7, 1997) states 50% of the solvent is retained in the shop towel and 50% is emitted for cleanup solvents which have a composite vapor pressure less than 10 millimeters of mercury at 20 degrees Celsius.

6. The permittee shall operate and maintain a continuous temperature monitor and recorder which measures and records the combustion temperature within the RTO 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.

The permittee shall collect and record the following information for each day:

- a. all 3-hour blocks of time during which the average combustion temperature within the RTO thermal incinerator, when the emissions unit was in operation, was more than 50 degrees Fahrenheit below the average temperature during the most recent emission test that demonstrated the emissions unit was in compliance; and
  - b. a log of the downtime for the capture (collection) system, control device, and monitoring equipment, when the associated emissions unit was in operation.
7. The permit to install for this emissions unit (K009) was evaluated based on the actual materials (typically coatings and cleanup materials) and the design parameters of the emissions unit's exhaust system, as specified by the permittee in the permit to install application. The Ohio EPA's "Review of New Sources of Air Toxic Emissions" policy ("Air Toxic Policy") was applied for each pollutant emitted by this emissions unit using data from the permit to install application and the SCREEN 3.0 model (or other Ohio EPA approved model). The predicted 1-hour maximum ground-level concentration from the use of the SCREEN 3.0 model was compared to the Maximum Acceptable Ground-Level Concentration (MAGLC). The following summarizes the results of the modeling for the "worst case" pollutant(s):

Pollutant: ethylene glycol n-butyl ether

TLV (mg/m3): 97

Maximum Hourly Emission Rate (lbs/hr): 1.66\*

Predicted 1-Hour Maximum Ground-Level  
 Concentration (ug/m3): 320.0

MAGLC (ug/m3): 2309.5

Pollutant: ethylene glycol

TLV (mg/m<sup>3</sup>): 73

Maximum Hourly Emission Rate (lbs/hr): 1.06\*

Predicted 1-Hour Maximum Ground-Level  
Concentration (ug/m<sup>3</sup>): 192.6

MAGLC (ug/m<sup>3</sup>): 1738.1

Pollutant: petroleum naphtha

TLV (mg/m<sup>3</sup>): 525

Maximum Hourly Emission Rate (lbs/hr): 8.27\*\*

Predicted 1-Hour Maximum Ground-Level  
Concentration (ug/m<sup>3</sup>): 1661

MAGLC (ug/m<sup>3</sup>): 12500

\*Maximum emission rate from emissions units K001 through K009.

\*\*Maximum emission rate from emissions units K001 through K006 and K009.

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

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

- b. changes in the composition of the materials, or use of new materials, that would result in an increase in emissions of any pollutant with a listed TLV that was proposed in the application and modeled; and
- c. physical changes to the emissions unit or its exhaust parameters (e.g., increased/ decreased exhaust flow, changes in stack height, changes in stack diameter, etc.).

If the permittee determines that the "Air Toxic Policy" will be satisfied for the above changes, the Ohio EPA will not consider the change(s) to be a "modification" under OAC rule 3745-31-01(VV)(1)(a)(ii), and a modification of the existing permit to install will not be required. If the change(s) is (are) defined as a modification under other provisions of the modification definition (other than (VV)(1)(a)(ii)), then the permittee shall obtain a final permit to install prior to the change.

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

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

#### **D. Reporting Requirements**

1. The permittee shall notify the Director (the appropriate Ohio EPA District Office or local air agency) in writing if a "photochemically reactive material" (as defined in OAC 3745-21-01 (C)(5)) is employed in the emissions unit. The notification shall include a copy of such record and shall be sent to the Director (the appropriate Ohio EPA District Office or local air agency) within 45 days after such an occurrence.
2. The permittee shall submit deviation (excursion) reports that identify any time periods when the emissions unit was in operation and the emissions from the emissions unit were not vented to the RTO thermal incinerator. Each report shall be submitted within 30 days after the deviation occurs.
3. The permittee shall submit deviation (excursion) reports which identify all 3-hour blocks of time during which the average combustion temperature within the RTO thermal incinerator does not

comply with the temperature limitation specified above.

4. The permittee shall submit deviation (excursion) reports which identify all exceedances of the rolling, 12-month usage limitations for coatings, cleanup materials, and concentrated fountain solutions and the rolling 12-month emission limitations for OC, any individual HAP, and combined HAPs and, for the first 12 calendar months of operation following the issuance of this permit, all exceedances of the maximum allowable cumulative coating usage levels, cleanup material usage levels, concentrated fountain solution levels, emissions of any individual HAP levels, and emissions of combined HAPs levels.
5. The permittee shall notify the Director (the appropriate Ohio EPA District Office or local air agency) in writing if a coating or a concentrated fountain solution which exceeds the OC contents specified in section B.5 of these terms and conditions is employed in this emissions unit. The notification shall include a copy of such record and shall be sent to the Director (the appropriate Ohio EPA District Office or local air agency) within 30 days after such an occurrence.
6. The permittee shall notify the Director (the appropriate Ohio EPA District Office or local air agency) in writing if a fountain solution containing any alcohol is employed in this emissions unit. The notification shall include a copy of such record and shall be sent to the Director (the appropriate Ohio EPA District Office or local air agency) within 45 days after such an occurrence.
7. The permittee shall notify the Director (the appropriate Ohio EPA District Office or local air agency) in writing if a cleanup material that has a vapor pressure of 10 mm Hg or greater is employed in this emissions unit. The notification shall include a copy of such record and shall be sent to the Director (the appropriate Ohio EPA District Office or local air agency) within 45 days after such an occurrence.
8. The permittee shall also submit annual reports which specify the total OC emissions from emissions units K001, K002, K003, K004, K005, K006, and K009 combined for the previous calendar year. These reports shall be submitted by January 31 of each year.
9. The deviation reports shall be submitted in accordance with the requirements specified in the General Terms and Conditions of this permit.

#### **E. Testing Requirements**

1. A demonstration of negative pressure differential for the dryer oven shall be conducted within 90 days of start-up of emissions unit K009 to confirm that the assumptions stated in sections C.4 and C.5 of these terms and conditions apply to this emissions unit. Such a demonstration shall be shown by either of the following methods:
  - a. By using a differential pressure gauge so that an inlet of the gauge is within the dryer and

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the other inlet is open to the ambient air in the pressroom. The differential pressure gauge may be a liquid column gauge or may be a mechanical type gauge. The differential pressure gauge shall be properly leveled and zeroed according to the manufacturer's instructions. If a mechanical type gauge is used, it should be calibrated according to the manufacturer's instructions against a liquid column gauge. (If a liquid column gauge is used, no calibration is necessary). The gauge should measure a pressure differential of at least 0.007 inches of water column whenever the press is operating to ensure that air is entering the dryer through all of the dryer's openings (excluding the exhaust stack). If a pressure gauge is to be permanently installed on the dryer, the location of the pressure tap within the dryer should not be modified without first consulting with the dryer manufacturer/installer. This is important since the manufacturer/installer may have used the pressure differential to set the exhaust rate for the dryer to ensure that the VOC concentration within the dryer remains below 25 percent of the lower explosive limit; or

- b. By using smoke tubes, plastic flow indicating strips or other flow indicating devices approved by the field office in consultation with the Engineering Section to demonstrate that air flows into the dryer at all openings in the dryer (excluding the exhaust stack). All points measured with such devices should indicate airflow into the dryer.

If the testing fails to demonstrate negative pressure in the dryer oven, the assumptions detailed in sections C.4 and C.5 of these terms and conditions shall not apply, and an overall control efficiency of this emissions unit shall be based on capture efficiency testing as described in section E.2.e below.

2. The permittee shall conduct, or have conducted, emission testing for this emissions unit in accordance with the following requirements:
  - a. The emission testing shall be conducted within 90 days of start-up of emissions unit K009.
  - b. The emission testing shall be conducted to demonstrate compliance with the capture efficiency for OC (verify negative pressure in the dryer oven as described in Section E.1 above) and the control efficiency for OC and organic HAP.
  - c. The test method(s) which must be employed to demonstrate compliance with the control efficiency limitation for OC and organic HAP are specified below. Alternative U.S. EPA approved test methods may be used with prior approval from the Ohio EPA.
  - d. 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. 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.

- e. If required, 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 USEPA's "Guidelines 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.)
  - f. The test(s) shall be conducted while the emissions unit is operating at or near its maximum capacity, unless otherwise specified or approved by the appropriate Ohio EPA District Office or local air agency.
3. Not later than 30 days prior to the proposed test date(s), the permittee shall submit an "Intent to Test" notification to the appropriate Ohio EPA District Office or local air agency. 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 District Office's or local air agency's refusal to accept the results of the emission test(s).
  4. Personnel from the appropriate Ohio EPA District Office or local air agency 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.
  5. 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 appropriate Ohio EPA District Office or local air agency within 30 days following completion of the test(s). The permittee may request additional time for the submittal of the written report, where warranted, with prior approval from the appropriate Ohio EPA District Office or local air agency.
  6. Compliance with the emission limitations in sections A.1 and B.5 of these terms and conditions shall be determined in accordance with the following methods:
    - a. Emission Limitations:
      - OC content of 45.0%, by weight, for coatings
      - OC content of 15.0%, by weight, for concentrated fountain solutions

Applicable Compliance Method:

Formulation data or USEPA Method 24 (for coatings) or 24A (for flexographic and rotogravure printing inks and related coatings) shall be used to determine the organic compound contents of the coatings and concentrated fountain solutions.

b. Emission Limitation:

3.05 pounds of OC per hour for coatings and fountain solutions

Applicable Compliance Method:

Compliance shall be determined by the following equation:

$$[(\text{maximum coating usage, in pounds per hour}) \times (0.45^*) \times (0.8^{**}) \times (1-0.95^{***}) + (\text{maximum concentrated fountain solution usage, in pounds per hour}) \times (0.15^*) \times (1-(0.7^{**}) \times (0.95^{***}))]$$

\*Maximum allowable OC content for coatings and concentrated fountain solutions.

\*\*Per Ohio EPA Division of Air Pollution Control Engineering Section Engineer Guide #56 revised June 15, 1999, emission factors provided in the answer to question number 21.

\*\*\*Minimum required control efficiency for the RTO thermal incinerator.

c. Emission Limitation:

0.74 pound of PE per hour

Applicable Compliance Method:

Stack testing may be required in the future in accordance with the test method(s) and procedures in OAC rule 3745-17-03(B)(10).

d. Emission Limitation:

3.2 tons of PE per year

Applicable Compliance Method:

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Multiply the allowable hourly emission limitation by 8760 hours per year, then divide by 2000 pounds per ton.

e. Emission Limitations:

dryer oven - 1.04 pounds of CO per hour  
RTO thermal incinerator - 0.72 pound of CO per hour

Applicable Compliance Method:

Multiply the CO emission factor of 84 pounds of CO emissions per million cubic feet of natural gas by the maximum hourly natural gas usage. The CO emission factor is from AP-42, 5th edition, Table 1.4-1, dated 2/98.

f. Emission Limitations:

dryer oven - 4.6 tons of CO per year  
RTO thermal incinerator - 3.2 tons of CO per year

Applicable Compliance Method:

Multiply the allowable hourly emission limitation by 8760 hours per year, then divide by 2000 pounds per ton.

g. Emission Limitations:

dryer oven - 1.23 pounds of NO<sub>x</sub> per hour  
RTO thermal incinerator - 0.86 pound of NO<sub>x</sub> per hour

Applicable Compliance Method:

Multiply the NO<sub>x</sub> emission factor of 100 pounds of NO<sub>x</sub> emissions per million cubic feet of natural gas by the maximum hourly natural gas usage. The NO<sub>x</sub> emission factor is from AP-42, 5th edition, Table 1.4-1, dated 2/98.

h. Emission Limitations:

dryer oven - 5.4 tons of NO<sub>x</sub> per year  
RTO thermal incinerator - 3.8 tons of NO<sub>x</sub> per year

Applicable Compliance Method:

Multiply the allowable hourly emission limitation by 8760 hours per year, then divide by

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2000 pounds per ton.

i. Emission Limitations:

dryer oven - 0.14 pound of OC per hour  
RTO thermal incinerator - 0.10 pound of OC per hour

Applicable Compliance Method:

Multiply the OC emission factor of 11 pounds of OC emissions per million cubic feet of natural gas by the maximum yearly natural gas usage, and divide by 2000 lbs/ton. The OC emission factor is from AP-42, 5th edition, Table 1.4-2, dated 3/98.

j. Emission Limitations:

dryer oven - 0.6 ton of OC per year  
RTO thermal incinerator - 0.4 ton of OC per year

Applicable Compliance Method:

Multiply the allowable hourly emission limitation by 8760 hours per year, then divide by 2000 pounds per ton.

k. Emission Limitation:

20% opacity as a 6-minute average

Applicable Compliance Method:

OAC rule 3745-17-03(B)(1)

l. Emission Limitation:

The control efficiency of the RTO thermal incinerator shall be at least 95%, by weight for OC and organic HAP

Applicable Compliance Method:

Compliance with the control efficiency requirement shall be determined in accordance with the test methods and procedures specified in OAC rule 3745-21-10 as required in section E.2 of these terms and conditions.

m. Emission Limitation:

The emissions of OC from emissions units K001, K002, K003, K004, K005, K006, and K009 shall not exceed 48.3 tons per year, based upon a rolling, 12-month summation of the monthly emissions.

Applicable Compliance Method:

Compliance shall be demonstrated based upon the monthly record keeping as required by section C.4 of these terms and conditions. Formulation data or USEPA Method 24 (for coatings) or 24A (for flexographic and rotogravure printing inks and related coatings) shall be used to determine the organic compound contents of the coatings and concentrated fountain solutions.

n. Emission Limitations:

The emissions of any individual hazardous air pollutant (HAP) from emissions unit K001 through K009 shall not exceed 8.0 tons per year, based upon a rolling, 12-month summation of the monthly emissions.

The emissions of combined hazardous air pollutants (HAPs) from emissions units K001 through K009 shall not exceed 20.0 tons per year, based upon a rolling, 12-month summation of the monthly emissions.

Applicable Compliance Method:

Compliance shall be demonstrated based upon the monthly record keeping as required by section C.5 of these terms and conditions. Formulation data shall be used to determine the HAP contents of the non-heatset inks, aqueous coatings, coatings, concentrated fountain solutions, concentrated fountain etch solutions, fountain solution additives, and cleanup materials.

**F. Miscellaneous Requirements**

1. The following terms and conditions of this permit are federally enforceable pursuant to OAC rule 3745-35-07: A.1, A.2.a, B.1, B.2, B.3, B.4, B.5, B.6, B.7, B.8, C.1, C.2, C.3, C.4, C.5, C.6, D.1, D.2, D.3, D.4, D.5, D.6, D.7, D.8, E.1, E.2, E.3, E.4, and E.5.