State of Ohio Environmental Protection Agency

RE: FINAL PERMIT TO INSTALL **CERTIFIED MAIL**
LORAIN COUNTY

Street Address:
122 S. Front Street
Lazarus Gov. Center **TELE:** (614) 644-3020 **FAX:** (614) 644-2329
Mailing Address:
Lazarus Gov. Center
P.O. Box 1049

Application No: 02-17878

DATE: 10/30/2003

Quebecor World - Oberlin Division
Roger Starett
235 Artino Street
Oberlin, OH 44074

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

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

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

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

Sincerely,

Michael W. Ahern

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

CC: USEPA **NEDO**

STATE OF OHIO ENVIRONMENTAL PROTECTION AGENCY

Permit To Install	**Issue Date: 10/30/2003**
Terms and Conditions	**Effective Date: 10/30/2003**

FINAL PERMIT TO INSTALL 02-17878

Application Number:	02-17878
APS Premise Number:	0247100591
Permit Fee:	**$1200**
Name of Facility:	Quebecor World - Oberlin Division
Person to Contact:	Roger Starett
Address:	235 Artino Street Oberlin, OH 44074

Location of proposed air contaminant source(s) [emissions unit(s)]:
235 Artino Street
Oberlin, **Ohio**

Description of proposed emissions unit(s):
Synthetic minor PTI to cover existing equipment.

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

This permit is granted subject to the conditions attached hereto.

Ohio Environmental Protection Agency

Director

Part I - GENERAL TERMS AND CONDITIONS

A. Permit to Install General Terms and Conditions

1. Compliance Requirements

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

2. Reporting Requirements

The permittee shall submit required reports in the following manner:

a. Reports of any required monitoring and/or recordkeeping information shall be submitted to the appropriate Ohio EPA District Office or local air agency.

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

3. Records Retention Requirements

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

4. Inspections and Information Requests

The Director of the Ohio EPA, or an authorized representative of the Director, may, subject to the safety requirements of the permittee and without undue delay, enter upon the premises of this source at any reasonable time for purposes of making inspections, conducting tests, examining records or reports pertaining to any emission of air contaminants, and determining compliance with any applicable State air pollution laws and regulations and the terms and conditions of this permit. The permittee shall furnish to the Director of the Ohio EPA, or an authorized

representative of the Director, upon receipt of a written request and within a reasonable time, any information that may be requested to determine whether cause exists for modifying, reopening or revoking this permit or to determine compliance with this permit. Upon verbal or written request, the permittee shall also furnish to the Director of the Ohio EPA, or an authorized representative of the Director, copies of records required to be kept by this permit.

5. Scheduled Maintenance/Malfunction Reporting

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

6. Permit Transfers

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

7. Air Pollution Nuisance

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

8. Termination of Permit to Install

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

9. Construction of New Sources(s)

The proposed emissions unit(s) shall be constructed in strict accordance with the plans and application submitted for this permit to the Director of the Ohio Environmental Protection Agency. There may be no deviation from the approved plans without the express, written approval of the Agency. Any deviations from the approved plans or the above conditions may lead to such sanctions

and penalties as provided under Ohio law. Approval of these plans does not constitute an assurance that the proposed facilities will operate in compliance with all Ohio laws and regulations. Additional facilities shall be installed upon orders of the Ohio Environmental Protection Agency if the proposed sources cannot meet the requirements of this permit or cannot meet applicable standards.

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

10. Public Disclosure

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

11. Applicability

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

12. Best Available Technology

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

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

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

commencing operation of the emissions unit(s) covered by this permit.

14. Construction Compliance Certification

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

15. Fees

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

B. Permit to Install Summary of Allowable Emissions

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

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

Pollutant	Tons Per Year
VOC	94.1
PE	14.9
NOx	16.94
CO	10.83

Emissions Unit ID: **R003**

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
R003 - Four-Unit Baker Perkins G44 Heatset Web Offset (lithographic) printing press equipped with an ink setting oven and a thermal incinerator (large Katec) The requirements of this permit supersede those requirements identified in Permit to Install number 02-7610 issued on January 5, 1994.	OAC rule 3745-31-05(A)(3) OAC rule 3745-17-07(A)(1)

	Applicable Emissions Limitations/Control Measures	
OAC rule 3745-17-11		NOx emissions from the dryer associated with this emissions unit shall not exceed 0.44 lb/hr and 1.927 TPY. See A.2.f below.
OAC rule 3745-21-07(G)(2)	Volatile organic compound emissions shall not exceed 44.2 lbs/day from the stack associated with this emissions unit.	NOx emissions from the thermal oxidizer associated with this emissions unit (R003) and emissions units R004, R005, R006, and R007 shall not exceed 0.717 lb/hr and 3.14 TPY. See A.2.g below.
OAC rule 3745-21-07(G)(6)	Volatile organic compound emissions shall not exceed 8.06 TPY from the stack associated with this emissions unit.	CO emissions from the thermal oxidizer associated with this emissions unit (R003) and emissions units R004, R005, R006, and R007 shall not exceed 0.60 lb/hr and 2.63 TPY. See A.2.h below.
OAC rule 3745-31-05(D)	Fugitive volatile organic compound emissions shall not exceed 7.44 TPY.	The emission limitation specified by this rule is less stringent than the emission limitation established pursuant to OAC rule 3745-31-05(A)(3).
	Particulate emissions shall not exceed 2.4 TPY.	Particulate emissions shall not exceed 0.551 lb/hr. See A.2.a below.
	Visible particulate emissions from the stack associated with this emissions unit shall not exceed five percent opacity as a six-minute average.	The emission limitation specified by this rule is less stringent than the emission limitation established pursuant to OAC rule 3745-31-05(A)(3). See A.2.b below.
	Emissions of volatile organic compounds vented to the thermal oxidizer shall be reduced by at least ninety-five percent (95%), by weight.	The emission limitation specified by this rule is less stringent than the emission limitation established pursuant to OAC rule 3745-31-05(A)(3).
	The requirements of this rule also include compliance with the requirements of OAC rule 3745-31-05(D) and OAC rule 3745-17-11.	
	See A.2.e below.	

See A.2.c, A.2.d, A.2.e and B.3
below.

2. Additional Terms and Conditions

2.a The uncontrolled mass rate of particulate emissions from this emissions unit is less than 10 pounds per hour according to Engineering Guide #56. Therefore, pursuant to OAC rule 3745-17-11(A)(2)(a)(ii), Figure II of OAC rule 3745-17-11 does not apply. The maximum process weight rate for this emissions unit in accordance with Engineering Guide #56 is 100 pounds per hour based on the maximum quantities of ink, fountain solution, and blanket wash employed hourly. Therefore, in accordance with Table I of OAC rule 3745-17-11, the allowable rate of particulate emissions is 0.551 pound per hour.

2.b OAC rule 3745-21-07(G)(2) limits organic compound (OC) emissions to 8 pounds per hour and 40 pounds per day or requires an 85% reduction in OC emissions. The thermal oxidizer is employed to comply with the requirement to achieve an 85% reduction in OC emissions instead of complying with the OC emission limits of 8 pounds per hour and 40 pounds per day. The emission limitation established pursuant to OAC rule 3745-31-05(A)(3) requires a 95% reduction in OC emission which is more stringent than the emission limitation specified by OAC rule 3745-21-07(G)(2).

2.c The emissions of each single hazardous air pollutant (HAP) from all emissions units at the facility shall not exceed 9.9 tons per year, based upon a rolling, 12-month summation.

2.d The emissions of combined HAPs from all emissions units at the facility shall not exceed 24.9 tons per year, based upon a rolling, 12-month summation.

2.e The following volatile organic compound (VOC) contents shall not be exceeded for this emissions unit:

i. Ink: 47% VOC by weight;

ii. Fountain solution: 15% VOC by weight; and

iii. Adhesive: 2% VOC by weight.

2.f The hourly and annual NOx emission limitations for the dryer associated with this emissions unit are based on an emission factor of 100 lbs NOx/mmscf for uncontrolled

natural gas combustion in small boilers (AP-42, Table 1.4-1, 2/98), the maximum operating value for the natural gas burner in the dryer (4.4 mmBtu/hr), and 8760 maximum potential operating hours. Therefore; monitoring, record keeping, reporting, and testing is not required for NOx emissions from this emissions unit.

2.g The hourly and annual NOx emission limitations for the thermal oxidizer associated with this emissions unit (R003) and emissions units R004, R005, R006, and R007 are based on an emission factor of 100 lbs NOx/mmscf for uncontrolled natural gas combustion in small boilers (AP-42, Table 1.4-1, 2/98), the maximum operating value for the natural gas burner in the thermal oxidizer (7.17 mmBtu/hr), and 8760 maximum potential operating hours. Therefore; monitoring, record keeping, reporting, and testing is not required for NOx emissions from this emissions unit.

2.h The hourly and annual CO emission limitations for the thermal oxidizer associated with this emissions unit (R003) and emissions units R004, R005, R006, and R007 are based on an emission factor of 84 lbs CO/mmscf for uncontrolled natural gas combustion in small boilers (AP-42, Table 1.4-1, 2/98), the maximum operating value for the natural gas burner in the thermal oxidizer (7.17 mmBtu/hr), and 8760 maximum potential operating hours. Therefore; monitoring, record keeping, reporting, and testing is not required for CO emissions from this emissions unit.

B. Operational Restrictions

1. The average combustion temperature within the thermal incinerator, for any 3-hour block of time when the emissions unit is in operation, shall not be more than 50 degrees Fahrenheit below the average temperature during the compliance emission test required in Section E.1 of these terms and conditions or below 1200 degrees Fahrenheit until such testing has been completed.

2. The permittee shall maintain negative pressure in the press dryer when the emissions unit is in operation.

3. Material usage for this emissions unit shall not exceed the following limits:

   a. Ink: 416.1 tons/yr;

   b. Blanket wash: 6.6 tons/yr;

   c. Fountain solution concentrate: 15.3 tons/yr; and

   d. Adhesive: 162.1 tons/yr.

C. Monitoring and/or Recordkeeping Requirements

1. The permittee shall collect and record the following information each month* for this emissions unit for the purpose of determining annual organic compound emissions:

   a. The name and identification number of each ink, fountain solution, blanket wash, and adhesive employed;

b. The amount, in pounds, of each ink, fountain solution, blanket wash, and adhesive employed;

c. The VOC content of each ink, fountain solution, blanket wash, and adhesive employed, in percent by weight, as applied;

d. The number of days the emissions unit is in operation;

e. The total controlled VOC emission rate for all inks, fountain solutions, and blanket washes; in pounds or ton(s), calculated using the destruction efficiency determined from the most recent performance test that demonstrated the emissions unit was in compliance and the formula contained in Section E of these terms and conditions; and

f. The total fugitive VOC emission rate for all fountain solutions, blanket washes, and adhesives; in pounds or ton(s), calculated using the formula contained in Section E of these terms and conditions.

* Since the daily VOC emission limitation for this emissions unit is based on maximum potential material usage, daily record keeping is not required. It is acceptable for the facility to maintain monthly records for the purpose of determining actual annual VOC emissions.

2. The permittee shall operate and maintain a continuous temperature monitor and recorder which measures and records the combustion temperature within the thermal incinerator when the emissions unit is in operation.

3. 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 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.

b. A log of the downtime for the capture (collection) system, control device, and monitoring equipment, when the associated emissions unit was in operation.

4. Monitoring and recordkeeping for the pressure in the press dryer is not required because the press dryer is interlocked with the thermal oxidizer control system and neither can be operated unless they are under negative pressure.

5. The permittee shall collect and record the following information each month for all printing presses at the facility:

   a. The name and identification number of each ink, fountain solution, blanket wash, and adhesive, as applied.

   b. The individual HAP[1] content for each HAP of each ink, fountain solution, blanket wash, and adhesive in weight percent of individual HAP, as applied.

   c. The total combined HAP content of each ink, fountain solution, blanket wash, and adhesive in weight percent of combined HAPs (sum all the individual HAP contents from b), as applied.

   d. The number of pounds of each ink, fountain solution, blanket wash, and adhesive employed.

   e. The total individual HAP emissions for each HAP from all inks, fountain solutions, blanket washes, and adhesives employed, in pounds or tons per month [for each HAP, the sum of (b times d) for each ink, fountain solution, blanket wash, and adhesive].

   f. The total combined HAP emissions from all inks, fountain solutions, blanket washes, and adhesives, in pounds or tons per month [the sum of © times d) for each ink, fountain solution, blanket wash, and adhesive].

   g. The updated rolling, 12-month total of the individual HAP emissions for each HAP from all inks, fountain solutions, blanket washes, and adhesives employed, in pounds or tons.

   h. The updated rolling, 12-month total of the total combined HAP emissions from all inks, fountain solutions, blanket washes, and adhesives employed, in pounds or tons.

   [1] A listing of the HAPs can be found in Section 112(b) of the Clean Air Act or can be obtained by contacting your Ohio EPA field office or local air agency contact. Material Safety Data Sheets typically include a listing of the solvents contained in the coatings or cleanup materials. This information does not have to be kept on an emissions unit-by-emissions unit basis.

6. The permittee shall collect and record the following information each month for this emissions unit for the purpose of determining compliance with material usage and VOC content limitations:

   a. The name and identification number of each ink, fountain solution, blanket wash, and adhesive employed;

b. The amount, in pounds, of each ink, fountain solution, blanket wash, and adhesive employed;

c. The VOC content of each ink, fountain solution, blanket wash, and adhesive employed, in percent by weight, as applied;

d. A record of each liquid organic material employed in this emissions unit indicating whether or not the liquid organic material is photochemically reactive as defined in OAC rule 3745-21-01(C)(5); and

e. The rolling, 12-month summation of material usage of each of the following materials employed in this emissions unit, in tons per year: ink, blanket wash, fountain solution concentrate, and adhesive.

7. The permit to install for this emissions unit (R003) was evaluated based on the actual materials employed 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 potentially 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: 1, 2, 4 trimethyl benzene
TLV (ug/m3): 179,000
Maximum Hourly Emission Rate (g/s): 0.023
Predicted 1-Hour Maximum Ground-Level Concentration (ug/m3): 134.9
MAGLC (ug/m3): 4272

Pollutant: ethylene glycol
TLV (ug/m3): 254,000
Maximum Hourly Emission Rate (g/s): 0.008
Predicted 1-Hour Maximum Ground-Level Concentration (ug/m3): 45.5
MAGLC (ug/m3): 6040

Pollutant: ethylene glycol N-butyl ether
TLV (ug/m3): 97,000
Maximum Hourly Emission Rate (g/s): 0.004
Predicted 1-Hour Maximum Ground-Level Concentration (ug/m3): 22.8

MAGLC (ug/m3): 2301

Pollutant: vinyl acetate
TLV (ug/m3): 35,000
Maximum Hourly Emission Rate (g/s): 0.004
Predicted 1-Hour Maximum Ground-Level Concentration (ug/m3): 23.3
MAGLC (ug/m3): 838

Physical changes to or changes in the method of operation of the emissions unit after its installation 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 be satisfied. If, upon

evalution, 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 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 submit deviation (excursion) reports which identify all 3-hour blocks of time during which the average combustion temperature within the 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. Each report shall be submitted within 30 days after the deviation occurs.

2. The permittee shall submit quarterly summaries which include a log of the downtime for the capture (collection) system (including failure to demonstrate negative pressure within the press dryer), control device, and monitoring equipment, when the associated emissions unit was in operation. These summaries shall be submitted by January 31, April 30, July 31, and October 31 of each year and shall cover the previous calendar quarters.

3. The permittee shall submit deviation (excursion) reports which identify each month during which the rolling, 12-month emissions of any single HAP from all emissions units at the facility exceeded 9.9 tons per year, and the actual rolling, 12-month emissions of each such single HAP for each such month.

4. The permittee shall submit deviation (excursion) reports which identify each month during which the rolling, 12-month emissions of combined HAPs from all emissions units at the facility exceeded 24.9 tons per year, and the actual rolling, 12-month emissions of combined HAPs for each such month.

5. Reporting is not required for material usage because the Operational Restrictions in Section B.3 of these terms and conditions are based on the maximum hourly consumption rate for this emissions unit.

E. Testing Requirements

1. The permittee shall conduct, or have conducted, emission testing for the thermal oxidizer for emissions units R003, R004, R005, R006, and R007 in accordance with the following requirements:

   a. The emission testing shall be conducted within 6 months of the effective date of this permit.

   b. The emission testing shall be conducted to demonstrate compliance with the destruction efficiency limitation for VOC emissions.

   c. The emission tests shall be conducted while the emissions unit is operating at normal or representative operating conditions. Prior to testing, the permittee shall propose to the Ohio EPA Northeast District Office an operating scenario for the presses being tested which is representative of actual operating conditions and VOC input rate to the control device.

   d. The destruction 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 and U.S. EPA Methods 25 or 25A of 40 CFR Part 60, Appendix A. Formulation data from the manufacturer, or if required Method 24A, shall be used to determine VOC contents of the inks, fountain solutions,

and blanket washes. 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.

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

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

A comprehensive written report on the results of the emissions test(s) shall be signed by the person or persons responsible for the tests and submitted to the Ohio EPA Northeast District Office within 30 days following completion of the test(s). The permittee may request additional time for submittal of the written report, where warranted, with prior approval from the Ohio EPA Northeast District Office.

2. Compliance with the emission limitations in Section A.1. of these terms and conditions shall be determined in accordance with the following method(s):

a. Emission Limitation:

Volatile organic compound emissions shall not exceed 44.2 lbs/day from the stack associated with this emissions unit.

Applicable Compliance Method:

Compliance shall be demonstrated by the following equation:

$S = (1 - DRE) \times [0.8(P) + A_d(FS) + B_d(BW)]$

Where

S = stack emissions, equation obtained from Engineering Guide #56;

DRE = destruction efficiency of the thermal incinerator, expressed as a decimal or percent which was determined during the most recent performance test which demonstrated compliance with the pound per hour emission limitation from the stack (a 95% destruction efficiency shall be used until testing has been completed);

0.8 = 20% of VOC's in heatset inks retained by substrate, 80% emitted per Engineering Guide #56;

P = (ink usage rate, lbs/month) x (ink VOC content, % by weight) x (1 month/number of days of operation);

A_d = mass fraction of fountain solution VOC routed to dryer and control device = 0.7 for alcohol substitutes;

FS = (fountain solution usage rate, lbs/month) x (fountain solution VOC content, % by wt.) x (1 month/number of days of operation);

B_d = mass fraction of cleanup solvent routed to dryer and control device = 0.4 for automatic blanket wash; and

BW = (blanket wash usage rate, lbs/month) x (blanket wash VOC content, % by wt.) x (1 month/number of days of operation).

b. Emission Limitation:

Volatile organic compound emissions shall not exceed 8.06 TPY from the stack associated with this emissions unit.

Applicable Compliance Method:

The annual stack emission limitation was established by multiplying the pound per hour VOC stack emission limitation by the maximum operating schedule of 8760 hours per year and dividing by 2000 pounds per ton. Therefore, a demonstration of compliance with the hourly stack emission limitation shall also be a demonstration of compliance with the annual stack emission limitation. Actual annual VOC emissions from the stack associated with this emissions unit shall be determined by summing the average daily emissions in Section E.2.a on an annual basis.

c. Emission Limitation:

Fugitive volatile organic compound emissions shall not exceed 7.44 TPY.

Applicable Compliance Method:

Compliance shall be demonstrated by the record keeping specified in Section C.1 of these terms and conditions and the following equation:

$F = [A_f(FS) + B_f(BW) + AD] \times 1 \text{ ton}/2000 \text{ lbs}$

Where

F = annual fugitive emissions from emissions unit R003, equation obtained from Engineering Guide #56 with the addition of adhesive emissions which are all fugitive according to the facility's permit application;

A_f = mass fraction of fountain solution VOC routed to dryer and control device = 0.7 for alcohol substitutes;

FS = (fountain solution usage rate, lbs/yr) x (fountain solution VOC content, % by wt.);

B_f = mass fraction of cleanup solvent emitted as fugitive = 0.6 for automatic blanket wash;

BW = (blanket wash usage rate, lbs/yr) x (blanket wash VOC content, % by wt.); and

AD = (adhesive usage rate, lbs/yr) x (adhesive VOC content, % by wt.).

d. Emission Limitation:

Particulate emissions shall not exceed 2.4 TPY.

Applicable Compliance Method:

The annual particulate emission limitation was established by multiplying the pound per hour particulate emission limitation by the maximum operating schedule of 8760 hours per year and dividing by 2000 pounds per ton. Therefore, a demonstration of compliance with the hourly particulate emission limitation shall also be a demonstration of compliance with the annual particulate emission limitation.

e. Emission Limitation:

Visible particulate emissions from the stack associated with this emissions unit shall not exceed five percent opacity as a six-minute average.

Applicable Compliance Method:

If required, compliance shall be determined through visible emissions observations performed in accordance with 40 CFR Part 60, Appendix A, Method 9, and the procedures specified in OAC rule 3745-17-03(B)(1).

f. Emission Limitation:

Emissions of volatile organic compounds vented to the thermal oxidizer shall be reduced by at least ninety-five percent (95%), by weight.

Applicable Compliance Method:

Compliance shall be determined through stack testing specified in Section E.1 of these terms and conditions.

g. Emission Limitation:

Particulate emissions shall not exceed 0.551 lb/hr.

Applicable Compliance Method:

If required, compliance shall be determined through stack testing in accordance with 40 CFR Part 60, Appendix A, Method 5. Per the Ohio Engineering Guide #56, no particulate testing should be necessary since this emissions unit is controlled by a thermal oxidizer.

h. Emission Limitation:

The emissions of each single hazardous air pollutant (HAP) from all emissions units at the facility shall not exceed 9.9 tons per year, based upon a rolling, 12-month summation.

Applicable Compliance Method:

Compliance shall be based upon the record keeping specified in Section C of these terms and conditions.

i. Emission Limitation:

The emissions of the combined HAPs from all emissions units at the facility shall not exceed 24.9 tons per year, based upon a rolling, 12-month summation.

Applicable Compliance Method:

Compliance shall be based upon the record keeping specified in Section C of these terms and conditions.

3. Formulation data or US EPA Method 24 shall be used to determine the VOC contents of all the

inks, fountain solutions, blanket washes, and adhesives employed in this emissions unit.

F. Miscellaneous Requirements

None

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
R004 - Six-Unit Harris M600 Heatset Web Offset (lithographic) printing press equipped with an ink setting oven and a thermal incinerator (large Katec) The requirements of this permit supersede those requirements identified in Permit to Install number 02-7610 issued on January 5, 1994.	OAC rule 3745-31-05(A)(3)

		See A.2.e below.
OAC rule 3745-17-07(A)(1)	Applicable Emissions Limitations/Control Measures	NOx emissions from the dryer associated with this emissions unit shall not exceed 0.52 lb/hr and 2.256 TPY. See A.2.f below.
OAC rule 3745-17-11	Volatile organic compound emissions shall not exceed 57.6 lbs/day from the stack associated with this emissions unit.	CO emissions from the dryer associated with this emissions unit shall not exceed 0.43 lb/hr and 1.883 TPY. See A.2.g below.
OAC rule 3745-21-07(G)(2)	Volatile organic compound emissions shall not exceed 10.5 TPY from the stack associated with this emissions unit.	NOx emissions from the thermal oxidizer associated with this emissions unit (R004) and emissions units R003, R005, R006, and R007 shall not exceed 0.717 lb/hr and 3.14 TPY. See A.2.h below.
OAC rule 3745-21-07(G)(6)	Fugitive volatile organic compound emissions shall not exceed 12.7 TPY.	CO emissions from the thermal oxidizer associated with this emissions unit (R004) and emissions units R003, R005, R006, and R007 shall not exceed 0.60 lb/hr and 2.63 TPY. See A.2.i below.
OAC rule 3745-31-05(D)	Particulate emissions shall not exceed 2.9 TPY.	The emission limitation specified by this rule is less stringent than the emission limitation established pursuant to OAC rule 3745-31-05(A)(3).
	Visible particulate emissions from the stack associated with this emissions unit shall not exceed five percent opacity as a six-minute average.	Particulate emissions shall not exceed 0.652 lb/hr. See A.2.a below.
	Emissions of volatile organic compounds vented to the thermal oxidizer shall be reduced by at least ninety-five percent (95%), by weight.	The emission limitation specified by this rule is less stringent than the emission limitation established pursuant to OAC rule
	The requirements of this rule also include compliance with the requirements of OAC rule 3745-31-05(D) and OAC rule 3745-17-11.	

3745-31-05(A)(3). See A.2.b below.

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

See A.2.c, A.2.d, A.2.e and B.3 below.

2. Additional Terms and Conditions

2.a The uncontrolled mass rate of particulate emissions from this emissions unit is less than 10 pounds per hour according to Engineering Guide #56. Therefore, pursuant to OAC rule 3745-17-11(A)(2)(a)(ii), Figure II of OAC rule 3745-17-11 does not apply. The maximum process weight rate for this emissions unit in accordance with Engineering Guide #56 is 128.5 pounds per hour based on the maximum quantities of ink, fountain solution, and blanket wash employed hourly. Therefore, in accordance with Table I of OAC rule 3745-17-11, the allowable rate of particulate emissions is 0.652 pound per hour.

2.b OAC rule 3745-21-07(G)(2) limits organic compound (OC) emissions to 8 pounds per hour and 40 pounds per day or requires an 85% reduction in OC emissions. The thermal oxidizer is employed to comply with the requirement to achieve an 85% reduction in OC emissions instead of complying with the OC emission limits of 8 pounds per hour and 40 pounds per day. The emission limitation established pursuant to OAC rule 3745-31-05(A)(3) requires a 95% reduction in OC emission which is more stringent than the emission limitation specified by OAC rule 3745-21-07(G)(2).

2.c The emissions of each single hazardous air pollutant (HAP) from all emissions units at the facility shall not exceed 9.9 tons per year, based upon a rolling, 12-month summation.

2.d The emissions of combined HAPs from all emissions units at the facility shall not exceed 24.9 tons per year, based upon a rolling, 12-month summation.

2.e The following volatile organic compound (VOC) contents shall not be exceeded for this emissions unit:

i. Ink: 47% VOC by weight;

ii. Fountain solution: 15% VOC by weight; and

iii. Adhesive: 2% VOC by weight.

2.f The hourly and annual NOx emission limitations for the dryer associated with this emissions unit are based on an emission factor of 100 lbs NOx/mmscf for uncontrolled natural gas combustion in small boilers (AP-42, Table 1.4-1, 2/98), the maximum operating value for the natural gas burner in the dryer (5.15 mmBtu/hr), and 8760 maximum potential operating hours. Therefore; monitoring, record keeping, reporting, and testing is not required for NOx emissions from this emissions unit.

2.g The hourly and annual CO emission limitations for the dryer associated with this emissions unit are based on an emission factor of 84 lbs CO/mmscf for uncontrolled natural gas combustion in small boilers (AP-42, Table 1.4-1, 2/98), the maximum operating value for the natural gas burner in the dryer (5.15 mmBtu/hr), and 8760 maximum potential operating hours. Therefore; monitoring, record keeping, reporting, and testing is not required for CO emissions from this emissions unit.

2.h The hourly and annual NOx emission limitations for the thermal oxidizer associated with this emissions unit (R004) and emissions units R003, R005, R006, and R007 are based on an emission factor of 100 lbs NOx/mmscf for uncontrolled natural gas combustion in small boilers (AP-42, Table 1.4-1, 2/98), the maximum operating value for the natural gas burner in the thermal oxidizer (7.17 mmBtu/hr), and 8760 maximum potential operating hours. Therefore; monitoring, record keeping, reporting, and testing is not required for NOx emissions from this emissions unit.

2.i The hourly and annual CO emission limitations for the thermal oxidizer associated with this emissions unit (R004) and emissions units R003, R005, R006, and R007 are based on an emission factor of 84 lbs CO/mmscf for uncontrolled natural gas combustion in small boilers (AP-42, Table 1.4-1, 2/98), the maximum operating value for the natural gas burner in the thermal oxidizer (7.17 mmBtu/hr), and 8760 maximum potential operating hours. Therefore; monitoring, record keeping, reporting, and testing is not required for CO emissions from this emissions unit.

B. Operational Restrictions

1. The average combustion temperature within the thermal incinerator, for any 3-hour block of time when the emissions unit is in operation, shall not be more than 50 degrees Fahrenheit below the average temperature during the compliance emission test required in Section E.1 of these terms and conditions or below 1200 degrees Fahrenheit until such testing has been completed.

2. The permittee shall maintain negative pressure in the press dryer when the emissions unit is in operation.

3. Material usage for this emissions unit shall not exceed the following limits:

   a. Ink: 525.6 tons/yr;

   b. Blanket wash: 15.3 tons/yr;

   c. Fountain solution concentrate: 21.9 tons/yr; and

   d. Adhesive: 162.1 tons/yr.

C. Monitoring and/or Recordkeeping Requirements

1. The permittee shall collect and record the following information each month* for this emissions unit for the purpose of determining annual organic compound emissions:

   a. The name and identification number of each ink, fountain solution, blanket wash, and adhesive employed;

   b. The amount, in pounds, of each ink, fountain solution, blanket wash, and adhesive employed;

   c. The VOC content of each ink, fountain solution, blanket wash, and adhesive employed, in percent by weight, as applied;

   d. The number of days the emissions unit is in operation;

   e. The total controlled VOC emission rate for all inks, fountain solutions, and blanket washes; in pounds or ton(s), calculated using the destruction efficiency determined from the most recent performance test that demonstrated the emissions unit was in compliance and the formula contained in Section E of these terms and conditions; and

   f. The total fugitive VOC emission rate for all fountain solutions, blanket washes, and adhesives; in pounds or ton(s), calculated using the formula contained in Section E of these terms and conditions.

   * Since the daily VOC emission limitation for this emissions unit is based on maximum potential material usage, daily record keeping is not required. It is acceptable for the

facility to maintain monthly records for the purpose of determining actual annual VOC emissions.

2. The permittee shall operate and maintain a continuous temperature monitor and recorder which measures and records the combustion temperature within the thermal incinerator when the emissions unit is in operation.

3. 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 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.

   b. A log of the downtime for the capture (collection) system, control device, and monitoring equipment, when the associated emissions unit was in operation.

4. Monitoring and recordkeeping for the pressure in the press dryer is not required because the press dryer is interlocked with the thermal oxidizer control system and neither can be operated unless they are under negative pressure.

5. The permittee shall collect and record the following information each month for all printing presses at the facility:

   a. The name and identification number of each ink, fountain solution, blanket wash, and adhesive, as applied.

   b. The individual HAP[1] content for each HAP of each ink, fountain solution, blanket wash, and adhesive in weight percent of individual HAP, as applied.

   c. The total combined HAP content of each ink, fountain solution, blanket wash, and adhesive in weight percent of combined HAPs (sum all the individual HAP contents from b), as applied.

   d. The number of pounds of each ink, fountain solution, blanket wash, and adhesive employed.

   e. The total individual HAP emissions for each HAP from all inks, fountain solutions, blanket washes, and adhesives employed, in pounds or tons per month [for each HAP, the sum of (b times d) for each ink, fountain solution, blanket wash, and adhesive].

f. The total combined HAP emissions from all inks, fountain solutions, blanket washes, and adhesives, in pounds or tons per month [the sum of © times d) for each ink, fountain solution, blanket wash, and adhesive].

g. The updated rolling, 12-month total of the individual HAP emissions for each HAP from all inks, fountain solutions, blanket washes, and adhesives employed, in pounds or tons.

h. The updated rolling, 12-month total of the total combined HAP emissions from all inks, fountain solutions, blanket washes, and adhesives employed, in pounds or tons.

[1] A listing of the HAPs can be found in Section 112(b) of the Clean Air Act or can be obtained by contacting your Ohio EPA field office or local air agency contact. Material Safety Data Sheets typically include a listing of the solvents contained in the coatings or cleanup materials. This information does not have to be kept on an emissions unit-by-emissions unit basis.

6. The permittee shall collect and record the following information each month for this emissions unit for the purpose of determining compliance with material usage and VOC content limitations:

a. The name and identification number of each ink, fountain solution, blanket wash, and adhesive employed;

b. The amount, in pounds, of each ink, fountain solution, blanket wash, and adhesive employed;

c. The VOC content of each ink, fountain solution, blanket wash, and adhesive employed, in percent by weight, as applied;

d. A record of each liquid organic material employed in this emissions unit indicating whether or not the liquid organic material is photochemically reactive as defined in OAC rule 3745-21-01(C)(5); and

e. The rolling, 12-month summation of material usage of each of the following materials employed in this emissions unit, in tons per year: ink, blanket wash, fountain solution concentrate, and adhesive.

7. The permit to install for this emissions unit (R004) was evaluated based on the actual materials employed 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 potentially 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: 1, 2, 4 trimethyl benzene
TLV (ug/m3): 179,000
Maximum Hourly Emission Rate (g/s): 0.023
Predicted 1-Hour Maximum Ground-Level Concentration (ug/m3): 134.9
MAGLC (ug/m3): 4272

Pollutant: ethylene glycol
TLV (ug/m3): 254,000
Maximum Hourly Emission Rate (g/s): 0.008
Predicted 1-Hour Maximum Ground-Level Concentration (ug/m3): 45.5
MAGLC (ug/m3): 6040

Pollutant: ethylene glycol N-butyl ether
TLV (ug/m3): 97,000
Maximum Hourly Emission Rate (g/s): 0.004
Predicted 1-Hour Maximum Ground-Level Concentration (ug/m3): 22.8
MAGLC (ug/m3): 2301

Pollutant: vinyl acetate
TLV (ug/m3): 35,000
Maximum Hourly Emission Rate (g/s): 0.004
Predicted 1-Hour Maximum Ground-Level Concentration (ug/m3): 23.3
MAGLC (ug/m3): 838

Physical changes to or changes in the method of operation of the emissions unit after its installation 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 be satisfied. If, upon evalution, 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 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 submit deviation (excursion) reports which identify all 3-hour blocks of time during which the average combustion temperature within the 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. Each report shall be submitted within 30 days after the deviation occurs.

2. The permittee shall submit quarterly summaries which include a log of the downtime for the capture (collection) system (including failure to demonstrate negative pressure within the press dryer), control device, and monitoring equipment, when the associated emissions unit was in operation. These summaries shall be submitted by January 31, April 30, July 31, and October 31 of each year and shall cover the previous calendar quarters.

3. The permittee shall submit deviation (excursion) reports which identify each month during which the rolling, 12-month emissions of any single HAP from all emissions units at the facility exceeded 9.9 tons per year, and the actual rolling, 12-month emissions of each such single HAP for each such month.

4. The permittee shall submit deviation (excursion) reports which identify each month during which the rolling, 12-month emissions of combined HAPs from all emissions units at the facility exceeded 24.9 tons per year, and the actual rolling, 12-month emissions of combined HAPs for each such month.

5. Reporting is not required for material usage because the Operational Restrictions in Section B.3 of these terms and conditions are based on the maximum hourly consumption rate for this emissions unit.

E. Testing Requirements

1. The permittee shall conduct, or have conducted, emission testing for the thermal oxidizer for emissions units R003, R004, R005, R006, and R007 in accordance with the following requirements:

   a. The emission testing shall be conducted within 6 months of the effective date of this permit.

   b. The emission testing shall be conducted to demonstrate compliance with the destruction efficiency limitation for VOC emissions.

c. The emission tests shall be conducted while the emissions unit is operating at normal or representative operating conditions. Prior to testing, the permittee shall propose to the

Ohio EPA Northeast District Office an operating scenario for the presses being tested which is representative of actual operating conditions and VOC input rate to the control device.

d. The destruction 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 and U.S. EPA Methods 25 or 25A of 40 CFR Part 60, Appendix A. Formulation data from the manufacturer, or if required Method 24A, shall be used to determine VOC contents of the inks, fountain solutions, and blanket washes. 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.

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

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

A comprehensive written report on the results of the emissions test(s) shall be signed by the person or persons responsible for the tests and submitted to the Ohio EPA Northeast District Office within 30 days following completion of the test(s). The permittee may request additional time for submittal of the written report, where warranted, with prior approval from the Ohio EPA Northeast District Office.

2. Compliance with the emission limitations in Section A.1. of these terms and conditions shall be determined in accordance with the following method(s):

a. Emission Limitation:

Volatile organic compound emissions shall not exceed 57.6 lbs/day from the stack associated with this emissions unit.

Applicable Compliance Method:

Compliance shall be demonstrated by the following equation:

$S = (1 - DRE) \times [0.8(P) + A_d(FS) + B_d(BW)]$

Where

S = stack emissions, equation obtained from Engineering Guide #56;

DRE = destruction efficiency of the thermal incinerator, expressed as a decimal or percent which was determined during the most recent performance test which demonstrated compliance with the pound per hour emission limitation from the stack (a 95% destruction efficiency shall be used until testing has been completed);

0.8 = 20% of VOC's in heatset inks retained by substrate, 80% emitted per Engineering Guide #56;

P = (ink usage rate, lbs/month) x (ink VOC content, % by weight) x (1 month/number of days of operation);

A_d = mass fraction of fountain solution VOC routed to dryer and control device = 0.7 for alcohol substitutes;

FS = (fountain solution usage rate, lbs/month) x (fountain solution VOC content, % by wt.) x (1 month/number of days of operation);

B_d = mass fraction of cleanup solvent routed to dryer and control device = 0.4 for automatic blanket wash; and

BW = (blanket wash usage rate, lbs/month) x (blanket wash VOC content, % by wt.) x (1 month/number of days of operation).

b. Emission Limitation:

Volatile organic compound emissions shall not exceed 10.5 TPY from the stack associated with this emissions unit.

Applicable Compliance Method:

The annual stack emission limitation was established by multiplying the pound per hour

OC stack emission limitation by the maximum operating schedule of 8760 hours per year and dividing by 2000 pounds per ton. Therefore, a demonstration of compliance with the hourly stack emission limitation shall also be a demonstration of compliance with the annual stack emission limitation. Actual annual VOC emissions from the stack associated with this emissions unit shall be determined by summing the average daily emissions in Section E.2.a on an annual basis.

c. Emission Limitation:

Fugitive volatile organic compound emissions shall not exceed 12.7 TPY.

Applicable Compliance Method:

Compliance shall be demonstrated by the record keeping specified in Section C.1. of these terms and conditions and the following equation:

$F = [A_f(FS) + B_f(BW) + AD] \times 1$ ton/2000 lbs

Where

F = annual fugitive emissions from emissions unit R004, equation obtained from Engineering Guide #56 with the addition of adhesive emissions which are all fugitive according to the facility's permit application;

A_f = mass fraction of fountain solution VOC routed to dryer and control device = 0.7 for alcohol substitutes;

FS = (fountain solution usage rate, lbs/yr) x (fountain solution VOC content, % by wt.);

B_f = mass fraction of cleanup solvent emitted as fugitive = 0.6 for automatic blanket wash;

BW = (blanket wash usage rate, lbs/yr) x (blanket wash VOC content, % by wt.); and

AD = (adhesive usage rate, lbs/yr) x (adhesive VOC content, % by wt.).

d. Emission Limitation:

Particulate emissions shall not exceed 2.9 TPY.

Applicable Compliance Method:

The annual particulate emission limitation was established by multiplying the pound per hour particulate emission limitation by the maximum operating schedule of 8760 hours per year and dividing by 2000 pounds per ton. Therefore, a demonstration of compliance with the hourly particulate emission limitation shall also be a demonstration of compliance with the annual particulate emission limitation.

e. Emission Limitation:

Visible particulate emissions from the stack associated with this emissions unit shall not exceed five percent opacity as a six-minute average.

Applicable Compliance Method:

If required, compliance shall be determined through visible emissions observations performed in accordance with 40 CFR Part 60, Appendix A, Method 9, and the procedures specified in OAC rule 3745-17-03(B)(1).

f. Emission Limitation:

Emissions of volatile organic compounds vented to the thermal oxidizer shall be reduced by at least ninety-five percent (95%), by weight.

Applicable Compliance Method:

Compliance shall be determined through stack testing specified in Section E.1 of these terms and conditions.

g. Emission Limitation:

Particulate emissions shall not exceed 0.652 lb/hr.

Applicable Compliance Method:

If required, compliance shall be determined through stack testing in accordance with 40 CFR Part 60, Appendix A, Method 5. Per the Ohio Engineering Guide #56, no particulate testing should be necessary since this emissions unit is controlled by a thermal oxidizer.

h. Emission Limitation:

The emissions of each single hazardous air pollutant (HAP) from all emissions units at the facility shall not exceed 9.9 tons per year, based upon a rolling, 12-month summation.

Applicable Compliance Method:

Compliance shall be based upon the record keeping specified in Section C of these terms and conditions.

i. Emission Limitation:

The emissions of the combined HAPs from all emissions units at the facility shall not exceed 24.9 tons per year, based upon a rolling, 12-month summation.

Applicable Compliance Method:

Compliance shall be based upon the record keeping specified in Section C of these terms and conditions.

3. Formulation data or US EPA Method 24 shall be used to determine the VOC contents of all the inks, fountain solutions, blanket washes, and adhesives employed in this emissions unit.

F. Miscellaneous Requirements

None

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	
R005 - Six-Unit Harris M110C Heatset Web Offset (lithographic) printing press equipped with an ink setting oven and a thermal incinerator (large Katec) The requirements of this permit supersede those requirements identified in Permit to Install number 02-7610 issued on January 5, 1994.	OAC rule 3745-31-05(A)(3)	
		OAC rule 3745-17-07(A)(1)
		OAC rule 3745-17-11

OAC rule 3745-21-07(G)(2)	Applicable Emissions Limitations/Control Measures Volatile organic compound emissions shall not exceed 28.8 lbs/day from the stack associated with this emissions unit.	NOx emissions from the thermal oxidizer associated with this emissions unit (R005) and emissions units R003, R004, R006, and R007 shall not exceed 0.717 lb/hr and 3.14 TPY. See A.2.f below.
OAC rule 3745-21-07(G)(6)	Volatile organic compound emissions shall not exceed 5.3 TPY from the stack associated with this emissions unit.	CO emissions from the thermal oxidizer associated with this emissions unit (R005) and emissions units R003, R004, R006, and R007 shall not exceed 0.60 lb/hr and 2.63 TPY. See A.2.g below.
OAC rule 3745-31-05(D)	Fugitive volatile organic compound emissions shall not exceed 6.9 TPY. Particulate emissions shall not exceed 2.4 TPY. Visible particulate emissions from the stack associated with this emissions unit shall not exceed five percent opacity as a six-minute average. Emissions of volatile organic compounds vented to the thermal oxidizer shall be reduced by at least ninety-five percent (95%), by weight. The requirements of this rule also include compliance with the requirements of OAC rule 3745-31-05(D) and OAC rule 3745-17-11. See A.2.e below.	The emission limitation specified by this rule is less stringent than the emission limitation established pursuant to OAC rule 3745-31-05(A)(3). Particulate emissions shall not exceed 0.551 lb/hr. See A.2.a below. The emission limitation specified by this rule is less stringent than the emission limitation established pursuant to OAC rule 3745-31-05(A)(3). See A.2.b below. The emission limitation specified by this rule is less stringent than the emission limitation established pursuant to OAC rule 3745-31-05(A)(3). See A.2.c, A.2.d, A.2.e and B.3 below

2. Additional Terms and Conditions

2.a The uncontrolled mass rate of particulate emissions from this emissions unit is less than 10 pounds per hour according to Engineering Guide #56. Therefore, pursuant to OAC rule 3745-17-11(A)(2)(a)(ii), Figure II of OAC rule 3745-17-11 does not apply. The maximum process weight rate for this emissions unit in accordance with Engineering Guide #56 is 64.1 pounds per hour based on the maximum quantities of ink, fountain solution, and blanket wash employed hourly. Therefore, in accordance with Table I of OAC rule 3745-17-11, the allowable rate of particulate emissions is 0.551 pound per hour.

2.b OAC rule 3745-21-07(G)(2) limits organic compound (OC) emissions to 8 pounds per hour and 40 pounds per day or requires an 85% reduction in OC emissions. The thermal oxidizer is employed to comply with the requirement to achieve an 85% reduction in OC emissions instead of complying with the OC emission limits of 8 pounds per hour and 40 pounds per day. The emission limitation established pursuant to OAC rule 3745-31-05(A)(3) requires a 95% reduction in OC emission which is more stringent than the emission limitation specified by OAC rule 3745-21-07(G)(2).

2.c The emissions of each single hazardous air pollutant (HAP) from all emissions units at the facility shall not exceed 9.9 tons per year, based upon a rolling, 12-month summation.

2.d The emissions of combined HAPs from all emissions units at the facility shall not exceed 24.9 tons per year, based upon a rolling, 12-month summation.

2.e The following volatile organic compound (VOC) contents shall not be exceeded for this emissions unit:

i. Ink: 47% VOC by weight;

ii. Fountain solution: 15% VOC by weight; and

iii. Adhesive: 2% VOC by weight.

2.f The hourly and annual NOx emission limitations for the thermal oxidizer associated with this emissions unit (R005) and emissions units R003, R004, R006, and R007 are based on an emission factor of 100 lbs NOx/mmscf for uncontrolled natural gas combustion in small boilers (AP-42, Table 1.4-1, 2/98), the maximum operating value for the natural gas burner in the thermal oxidizer (7.17 mmBtu/hr), and 8760 maximum potential operating hours. Therefore; monitoring, record keeping, reporting, and testing is not required for NOx emissions from this emissions unit.

2.g The hourly and annual CO emission limitations for the thermal oxidizer associated with this emissions unit (R005) and emissions units R003, R004, R006, and R007 are based on an emission factor of 84 lbs CO/mmscf for uncontrolled natural gas combustion in small boilers (AP-42, Table 1.4-1, 2/98), the maximum operating value for the natural gas burner in the thermal oxidizer (7.17 mmBtu/hr), and 8760 maximum potential operating hours. Therefore; monitoring, record keeping, reporting, and testing is not required for CO emissions from this emissions unit.

B. Operational Restrictions

1. The average combustion temperature within the thermal incinerator, for any 3-hour block of time when the emissions unit is in operation, shall not be more than 50 degrees Fahrenheit below the average temperature during the compliance emission test required in Section E.1 of these terms and conditions or below 1200 degrees Fahrenheit until such testing has been completed.

2. The permittee shall maintain negative pressure in the press dryer when the emissions unit is in operation.

3. Material usage for this emissions unit shall not exceed the following limits:

   a. Ink: 262.8 tons/yr;

   b. Blanket wash: 5.7 tons/yr;

   c. Fountain solution concentrate: 12.3 tons/yr; and

   d. Adhesive: 162.1 tons/yr.

C. Monitoring and/or Recordkeeping Requirements

1. The permittee shall collect and record the following information each month* for this emissions unit for the purpose of determining annual organic compound emissions:

   a. The name and identification number of each ink, fountain solution, blanket wash, and adhesive employed;

   b. The amount, in pounds, of each ink, fountain solution, blanket wash, and adhesive employed;

   c. The VOC content of each ink, fountain solution, blanket wash, and adhesive employed, in

percent by weight, as applied;

d. The number of days the emissions unit is in operation;

e. The total controlled VOC emission rate for all inks, fountain solutions, and blanket washes; in pounds or ton(s), calculated using the destruction efficiency determined from

the most recent performance test that demonstrated the emissions unit was in compliance and the formula contained in Section E of these terms and conditions; and

f. The total fugitive VOC emission rate for all fountain solutions, blanket washes, and adhesives; in pounds or ton(s), calculated using the formula contained in Section E of these terms and conditions.

* Since the daily VOC emission limitation for this emissions unit is based on maximum potential material usage, daily record keeping is not required. It is acceptable for the facility to maintain monthly records for the purpose of determining actual annual VOC emissions.

2. The permittee shall operate and maintain a continuous temperature monitor and recorder which measures and records the combustion temperature within the thermal incinerator when the emissions unit is in operation.

3. 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 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.

   b. A log of the downtime for the capture (collection) system, control device, and monitoring equipment, when the associated emissions unit was in operation.

4. Monitoring and recordkeeping for the pressure in the press dryer is not required because the press dryer is interlocked with the thermal oxidizer control system and neither can be operated unless they are under negative pressure.

5. The permittee shall collect and record the following information each month for all printing presses at the facility:

   a. The name and identification number of each ink, fountain solution, blanket wash, and adhesive, as applied.

   b. The individual HAP[1] content for each HAP of each ink, fountain solution, blanket wash, and adhesive in weight percent of individual HAP, as applied.

   c. The total combined HAP content of each ink, fountain solution, blanket wash, and

adhesive in weight percent of combined HAPs (sum all the individual HAP contents from b), as applied.

d. The number of pounds of each ink, fountain solution, blanket wash, and adhesive employed.

e. The total individual HAP emissions for each HAP from all inks, fountain solutions, blanket washes, and adhesives employed, in pounds or tons per month [for each HAP, the sum of (b times d) for each ink, fountain solution, blanket wash, and adhesive].

f. The total combined HAP emissions from all inks, fountain solutions, blanket washes, and adhesives, in pounds or tons per month [the sum of © times d) for each ink, fountain solution, blanket wash, and adhesive].

g. The updated rolling, 12-month total of the individual HAP emissions for each HAP from all inks, fountain solutions, blanket washes, and adhesives employed, in pounds or tons.

h. The updated rolling, 12-month total of the total combined HAP emissions from all inks, fountain solutions, blanket washes, and adhesives employed, in pounds or tons.

[1] A listing of the HAPs can be found in Section 112(b) of the Clean Air Act or can be obtained by contacting your Ohio EPA field office or local air agency contact. Material Safety Data Sheets typically include a listing of the solvents contained in the coatings or cleanup materials. This information does not have to be kept on an emissions unit-by-emissions unit basis.

6. The permittee shall collect and record the following information each month for this emissions unit for the purpose of determining compliance with material usage and VOC content limitations:

a. The name and identification number of each ink, fountain solution, blanket wash, and adhesive employed;

b. The amount, in pounds, of each ink, fountain solution, blanket wash, and adhesive employed;

c. The VOC content of each ink, fountain solution, blanket wash, and adhesive employed, in percent by weight, as applied;

d. A record of each liquid organic material employed in this emissions unit indicating whether or not the liquid organic material is photochemically reactive as defined in OAC rule 3745-21-01(C)(5); and

e. The rolling, 12-month summation of material usage of each of the following materials employed in this emissions unit, in tons per year: ink, blanket wash, fountain solution concentrate, and adhesive.

7. The permit to install for this emissions unit (R005) was evaluated based on the actual materials employed 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 potentially 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: 1, 2, 4 trimethyl benzene
TLV (ug/m3): 179,000
Maximum Hourly Emission Rate (g/s): 0.023
Predicted 1-Hour Maximum Ground-Level Concentration (ug/m3): 134.9
MAGLC (ug/m3): 4272

Pollutant: ethylene glycol
TLV (ug/m3): 254,000
Maximum Hourly Emission Rate (g/s): 0.008
Predicted 1-Hour Maximum Ground-Level Concentration (ug/m3): 45.5
MAGLC (ug/m3): 6040

Pollutant: ethylene glycol N-butyl ether
TLV (ug/m3): 97,000
Maximum Hourly Emission Rate (g/s): 0.004
Predicted 1-Hour Maximum Ground-Level Concentration (ug/m3): 22.8
MAGLC (ug/m3): 2301

Pollutant: vinyl acetate
TLV (ug/m3): 35,000
Maximum Hourly Emission Rate (g/s): 0.004
Predicted 1-Hour Maximum Ground-Level Concentration (ug/m3): 23.3
MAGLC (ug/m3): 838

Physical changes to or changes in the method of operation of the emissions unit after its installation 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 be satisfied. If, upon evalution, 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 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 submit deviation (excursion) reports which identify all 3-hour blocks of time during which the average combustion temperature within the 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. Each report shall be submitted within 30 days after the deviation occurs.

2. The permittee shall submit quarterly summaries which include a log of the downtime for the capture (collection) system (including failure to demonstrate negative pressure within the press dryer), control device, and monitoring equipment, when the associated emissions unit was in operation. These summaries shall be submitted by January 31, April 30, July 31, and October 31 of each year and shall cover the previous calendar quarters.

3. The permittee shall submit deviation (excursion) reports which identify each month during which the rolling, 12-month emissions of any single HAP from all emissions units at the facility exceeded 9.9 tons per year, and the actual rolling, 12-month emissions of each such single HAP for each such month.

4. The permittee shall submit deviation (excursion) reports which identify each month during which the rolling, 12-month emissions of combined HAPs from all emissions units at the facility exceeded 24.9 tons per year, and the actual rolling, 12-month emissions of combined HAPs for each such month.

5. Reporting is not required for material usage because the Operational Restrictions in Section B.3 of these terms and conditions are based on the maximum hourly consumption rate for this emissions unit.

E. Testing Requirements

1. The permittee shall conduct, or have conducted, emission testing for the thermal oxidizer for emissions units R003, R004, R005, R006, and R007 in accordance with the following requirements:

   a. The emission testing shall be conducted within 6 months of the effective date of this permit.

   b. The emission testing shall be conducted to demonstrate compliance with the destruction efficiency limitation for VOC emissions.

   c. The emission tests shall be conducted while the emissions unit is operating at normal or representative operating conditions. Prior to testing, the permittee shall propose to the Ohio EPA Northeast District Office an operating scenario for the presses being tested which is representative of actual operating conditions and VOC input rate to the control device.

   d. The destruction 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 and U.S. EPA Methods 25 or 25A of 40 CFR Part 60, Appendix A. Formulation data from the manufacturer, or if required Method 24A, shall be used to determine OC contents of the inks, fountain solutions, and blanket washes. 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.

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

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

A comprehensive written report on the results of the emissions test(s) shall be signed by the person or persons responsible for the tests and submitted to the Ohio EPA Northeast District Office within 30 days following completion of the test(s). The permittee may request additional time for submittal of the written report, where warranted, with prior approval from the Ohio EPA Northeast District Office.

2. Compliance with the emission limitations in Section A.1. of these terms and conditions shall be determined in accordance with the following method(s):

a. Emission Limitation:

Volatile organic compound emissions shall not exceed 28.8 lbs/day from the stack associated with this emissions unit.

Applicable Compliance Method:

Compliance shall be demonstrated by the following equation:

$S = (1 - DRE) \times [0.8(P) + A_d(FS) + B_d(BW)]$

Where

S = stack emissions, equation obtained from Engineering Guide #56;

DRE = destruction efficiency of the thermal incinerator, expressed as a decimal or percent which was determined during the most recent performance test which demonstrated compliance with the pound per hour emission limitation from the stack (a 95% destruction efficiency shall be used until testing has been completed);

0.8 = 20% of VOC's in heatset inks retained by substrate, 80% emitted per Engineering Guide #56;

P = (ink usage rate, lbs/month) x (ink VOC content, % by weight) x (1 month/number of days of operation);

A_d = mass fraction of fountain solution VOC routed to dryer and control device = 0.7 for alcohol substitutes;

FS = (fountain solution usage rate, lbs/month) x (fountain solution VOC content, % by wt.) x (1 month/number of days of operation);

B_d = mass fraction of cleanup solvent routed to dryer and control device = 0.4 for automatic blanket wash; and

BW = (blanket wash usage rate, lbs/month) x (blanket wash VOC content, % by wt.) x (1 month/number of days of operation).

b. Emission Limitation:

Volatile organic compound emissions shall not exceed 5.3 TPY from the stack associated with this emissions unit.

Applicable Compliance Method:

The annual stack emission limitation was established by multiplying the pound per hour OC stack emission limitation by the maximum operating schedule of 8760 hours per year and dividing by 2000 pounds per ton. Therefore, a demonstration of compliance with the hourly stack emission limitation shall also be a demonstration of compliance with the annual stack emission limitation. Actual annual VOC emissions from the stack associated with this emissions unit shall be determined by summing the average daily emissions in Section E.2.a on an annual basis.

c. Emission Limitation:

Fugitive volatile organic compound emissions shall not exceed 6.9 TPY.

Applicable Compliance Method:

Compliance shall be demonstrated by the record keeping specified in Section C.1 of these terms and conditions and the following equation:

$F = [A_f(FS) + B_f(BW) + AD] \times 1 \text{ ton}/2000 \text{ lbs}$

Where

F = annual fugitive emissions from emissions unit R005, equation obtained from

Engineering Guide #56 with the addition of adhesive emissions which are all fugitive according to the facility's permit application;

A_f = mass fraction of fountain solution VOC routed to dryer and control device = 0.7 for alcohol substitutes;

FS = (fountain solution usage rate, lbs/yr) x (fountain solution VOC content, % by wt.);

B_f = mass fraction of cleanup solvent emitted as fugitive = 0.6 for automatic blanket wash;

BW = (blanket wash usage rate, lbs/yr) x (blanket wash VOC content, % by wt.); and

AD = (adhesive usage rate, lbs/yr) x (adhesive VOC content, % by wt.).

d. Emission Limitation:

Particulate emissions shall not exceed 2.4 TPY.

Applicable Compliance Method:

The annual particulate emission limitation was established by multiplying the pound per hour particulate emission limitation by the maximum operating schedule of 8760 hours per year and dividing by 2000 pounds per ton. Therefore, a demonstration of compliance with the hourly particulate emission limitation shall also be a demonstration of compliance with the annual particulate emission limitation.

e. Emission Limitation:

Visible particulate emissions from the stack associated with this emissions unit shall not exceed five percent opacity as a six-minute average.

Applicable Compliance Method:

If required, compliance shall be determined through visible emissions observations performed in accordance with 40 CFR Part 60, Appendix A, Method 9, and the procedures specified in OAC rule 3745-17-03(B)(1).

f. Emission Limitation:

Emissions of volatile organic compounds vented to the thermal oxidizer shall be reduced

by at least ninety-five percent (95%), by weight.

Applicable Compliance Method:

Compliance shall be determined through stack testing specified in Section E.1 of these terms and conditions.

g. Emission Limitation:

Particulate emissions shall not exceed 0.551 lb/hr.

Applicable Compliance Method:

If required, compliance shall be determined through stack testing in accordance with 40 CFR Part 60, Appendix A, Method 5. Per the Ohio Engineering Guide #56, no particulate testing should be necessary since this emissions unit is controlled by a thermal oxidizer.

h. Emission Limitation:

The emissions of each single hazardous air pollutant (HAP) from all emissions units at the facility shall not exceed 9.9 tons per year, based upon a rolling, 12-month summation.

Applicable Compliance Method:

Compliance shall be based upon the record keeping specified in Section C of these terms and conditions.

i. Emission Limitation:

The emissions of the combined HAPs from all emissions units at the facility shall not exceed 24.9 tons per year, based upon a rolling, 12-month summation.

Applicable Compliance Method:

Compliance shall be based upon the record keeping specified in Section Cof these terms and conditions.

3. Formulation data or US EPA Method 24 shall be used to determine the VOC contents of all the inks, fountain solutions, blanket washes, and adhesives employed in this emissions unit.

F. Miscellaneous Requirements

None

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	
R006 - Six-Unit MAN Roland Polyman Heatset Web Offset (lithographic) printing press equipped with an ink setting oven and a thermal incinerator (large Katec) The requirements of this permit supersede those requirements identified in Permit to Install number 02-11995 issued on August 5, 1998.	OAC rule 3745-31-05(A)(3)	
		OAC rule 3745-17-07(A)(1)

	Applicable Emissions Limitations/Control Measures	
		See A.2.e below.
OAC rule 3745-17-11	Volatile organic compound emissions shall not exceed 44.2 lbs/day from the stack associated with this emissions unit.	NOx emissions from the dryer associated with this emissions unit shall not exceed 0.44 lb/hr and 1.927 TPY. See A.2.f below.
OAC rule 3745-21-07(G)(2)	Volatile organic compound emissions shall not exceed 8.06 TPY from the stack associated with this emissions unit.	NOx emissions from the thermal oxidizer associated with this emissions unit (R006) and emissions units R003, R004, R005, and R007 shall not exceed 0.717 lb/hr and 3.14 TPY. See A.2.g below.
OAC rule 3745-21-07(G)(6)	Fugitive volatile organic compound emissions shall not exceed 7.44 TPY.	CO emissions from the thermal oxidizer associated with this emissions unit (R006) and emissions units R003, R004, R005, and R007 shall not exceed 0.60 lb/hr and 2.63 TPY. See A.2.h below.
OAC rule 3745-31-05(D)	Particulate emissions shall not exceed 2.4 TPY.	The emission limitation specified by this rule is less stringent than the emission limitation established pursuant to OAC rule 3745-31-05(A)(3).
	Visible particulate emissions from the stack associated with this emissions unit shall not exceed five percent opacity as a six-minute average.	Particulate emissions shall not exceed 0.551 lb/hr. See A.2.a below.
	Emissions of volatile organic compounds vented to the thermal oxidizer shall be reduced by at least ninety-five percent (95%), by weight.	The emission limitation specified by this rule is less stringent than the emission limitation established pursuant to OAC rule 3745-31-05(A)(3). See A.2.b below.
	The requirements of this rule also include compliance with the requirements of OAC rule 3745-31-05(D) and OAC rule 3745-17-11.	The emission limitation specified by this rule is less stringent than the emission limitation established

pursuant to OAC rule
3745-31-05(A)(3).

See A.2.c, A.2.d, A.2.e and B.3
below.

2. Additional Terms and Conditions

2.a The uncontrolled mass rate of particulate emissions from this emissions unit is less than 10 pounds per hour according to Engineering Guide #56. Therefore, pursuant to OAC rule 3745-17-11(A)(2)(a)(ii), Figure II of OAC rule 3745-17-11 does not apply. The maximum process weight rate for this emissions unit in accordance with Engineering Guide #56 is 100 pounds per hour based on the maximum quantities of ink, fountain solution, and b
lanket wash employed hourly. Therefore, in accordance with Table I of OAC rule 3745-17-11, the allowable rate of particulate emissions is 0.551 pound per hour.

2.b OAC rule 3745-21-07(G)(2) limits organic compound (OC) emissions to 8 pounds per hour and 40 pounds per day or requires an 85% reduction in OC emissions. The thermal oxidizer is employed to comply with the requirement to achieve an 85% reduction in OC emissions instead of complying with the OC emission limits of 8 pounds per hour and 40 pounds per day. The emission limitation established pursuant to OAC rule 3745-31-05(A)(3) requires a 95% reduction in OC emission which is more stringent than the emission limitation specified by OAC rule 3745-21-07(G)(2).

2.c The emissions of each single hazardous air pollutant (HAP) from all emissions units at the facility shall not exceed 9.9 tons per year, based upon a rolling, 12-month summation.

2.d The emissions of combined HAPs from all emissions units at the facility shall not exceed 24.9 tons per year, based upon a rolling, 12-month summation.

2.e The following volatile organic compound (VOC) contents shall not be exceeded for this emissions unit:

i. Ink: 47% VOC by weight;

ii. Fountain solution: 15% VOC by weight; and

iii. Adhesive: 2% VOC by weight.

2.f The hourly and annual NOx emission limitations for the dryer associated with this emissions unit are based on an emission factor of 100 lbs NOx/mmscf for uncontrolled natural gas combustion in small boilers (AP-42, Table 1.4-1, 2/98), the maximum operating value for the natural gas burner in the dryer (4.4 mmBtu/hr), and 8760 maximum potential operating hours. Therefore; monitoring, record keeping, reporting, and testing is not required for NOx emissions from this emissions unit.

2.g The hourly and annual NOx emission limitations for the thermal oxidizer associated with this emissions unit (R006) and emissions units R003, R004, R005, and R007 are based on an emission factor of 100 lbs NOx/mmscf for uncontrolled natural gas combustion in small boilers (AP-42, Table 1.4-1, 2/98), the maximum operating value for the natural gas burner in the thermal oxidizer (7.17 mmBtu/hr), and 8760 maximum potential operating hours. Therefore; monitoring, record keeping, reporting, and testing is not required for NOx emissions from this emissions unit.

2.h The hourly and annual CO emission limitations for the thermal oxidizer associated with this emissions unit (R006) and emissions units R003, R004, R005, and R007 are based on an emission factor of 84 lbs CO/mmscf for uncontrolled natural gas combustion in small boilers (AP-42, Table 1.4-1, 2/98), the maximum operating value for the natural gas burner in the thermal oxidizer (7.17 mmBtu/hr), and 8760 maximum potential operating hours. Therefore; monitoring, record keeping, reporting, and testing is not required for CO emissions from this emissions unit.

B. Operational Restrictions

1. The average combustion temperature within the thermal incinerator, for any 3-hour block of time when the emissions unit is in operation, shall not be more than 50 degrees Fahrenheit below the average temperature during the compliance emission test required in Section E.1 of these terms and conditions or below 1200 degrees Fahrenheit until such testing has been completed.

2. The permittee shall maintain negative pressure in the press dryer when the emissions unit is in operation.

3. Material usage for this emissions unit shall not exceed the following limits:

   a. Ink: 416.1 tons/yr;

   b. Blanket wash: 6.6 tons/yr;

   c. Fountain solution concentrate: 15.3 tons/yr; and

d. Adhesive: 162.1 tons/yr.

C. Monitoring and/or Recordkeeping Requirements

1. The permittee shall collect and record the following information each month* for this emissions unit for the purpose of determining annual organic compound emissions:

   a. The name and identification number of each ink, fountain solution, blanket wash, and adhesive employed;

b. The amount, in pounds, of each ink, fountain solution, blanket wash, and adhesive employed;

c. The VOC content of each ink, fountain solution, blanket wash, and adhesive employed, in percent by weight, as applied;

d. The number of days the emissions unit is in operation;

e. The total controlled VOC emission rate for all inks, fountain solutions, and blanket washes; in pounds or ton(s), calculated using the destruction efficiency determined from the most recent performance test that demonstrated the emissions unit was in compliance and the formula contained in Section E of these terms and conditions; and

f. The total fugitive VOC emission rate for all fountain solutions, blanket washes, and adhesives; in pounds or ton(s), calculated using the formula contained in Section E of these terms and conditions.

* Since the daily VOC emission limitation for this emissions unit is based on maximum potential material usage, daily record keeping is not required. It is acceptable for the facility to maintain monthly records for the purpose of determining actual annual VOC emissions.

2. The permittee shall operate and maintain a continuous temperature monitor and recorder which measures and records the combustion temperature within the thermal incinerator when the emissions unit is in operation.

3. 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 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.

b. A log of the downtime for the capture (collection) system, control device, and monitoring equipment, when the associated emissions unit was in operation.

4. Monitoring and recordkeeping for the pressure in the press dryer is not required because the press dryer is interlocked with the thermal oxidizer control system and neither can be operated unless they are under negative pressure.

5. The permittee shall collect and record the following information each month for all printing

presses at the facility:

a. The name and identification number of each ink, fountain solution, blanket wash, and adhesive, as applied.

b. The individual HAP[1] content for each HAP of each ink, fountain solution, blanket wash, and adhesive in weight percent of individual HAP, as applied.

c. The total combined HAP content of each ink, fountain solution, blanket wash, and adhesive in weight percent of combined HAPs (sum all the individual HAP contents from b), as applied.

d. The number of pounds of each ink, fountain solution, blanket wash, and adhesive employed.

e. The total individual HAP emissions for each HAP from all inks, fountain solutions, blanket washes, and adhesives employed, in pounds or tons per month [for each HAP, the sum of (b times d) for each ink, fountain solution, blanket wash, and adhesive].

f. The total combined HAP emissions from all inks, fountain solutions, blanket washes, and adhesives, in pounds or tons per month [the sum of © times d) for each ink, fountain solution, blanket wash, and adhesive].

g. The updated rolling, 12-month total of the individual HAP emissions for each HAP from all inks, fountain solutions, blanket washes, and adhesives employed, in pounds or tons.

h. The updated rolling, 12-month total of the total combined HAP emissions from all inks, fountain solutions, blanket washes, and adhesives employed, in pounds or tons.

[1] A listing of the HAPs can be found in Section 112(b) of the Clean Air Act or can be obtained by contacting your Ohio EPA field office or local air agency contact. Material Safety Data Sheets typically include a listing of the solvents contained in the coatings or cleanup materials. This information does not have to be kept on an emissions unit-by-emissions unit basis.

6. The permittee shall collect and record the following information each month for this emissions unit for the purpose of determining compliance with material usage and VOC content limitations:

a. The name and identification number of each ink, fountain solution, blanket wash, and adhesive employed;

b. The amount, in pounds, of each ink, fountain solution, blanket wash, and adhesive employed;

c. The VOC content of each ink, fountain solution, blanket wash, and adhesive employed, in percent by weight, as applied;

d. A record of each liquid organic material employed in this emissions unit indicating whether or not the liquid organic material is photochemically reactive as defined in OAC rule 3745-21-01(C)(5); and

e. The rolling, 12-month summation of material usage of each of the following materials employed in this emissions unit, in tons per year: ink, blanket wash, fountain solution concentrate, and adhesive.

7. The permit to install for this emissions unit (R006) was evaluated based on the actual materials employed 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 potentially 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: 1, 2, 4 trimethyl benzene
TLV (ug/m3): 179,000
Maximum Hourly Emission Rate (g/s): 0.023
Predicted 1-Hour Maximum Ground-Level Concentration (ug/m3): 134.9
MAGLC (ug/m3): 4272

Pollutant: ethylene glycol
TLV (ug/m3): 254,000
Maximum Hourly Emission Rate (g/s): 0.008
Predicted 1-Hour Maximum Ground-Level Concentration (ug/m3): 45.5
MAGLC (ug/m3): 6040

Pollutant: ethylene glycol N-butyl ether
TLV (ug/m3): 97,000
Maximum Hourly Emission Rate (g/s): 0.004
Predicted 1-Hour Maximum Ground-Level Concentration (ug/m3): 22.8
MAGLC (ug/m3): 2301

Pollutant: vinyl acetate
TLV (ug/m3): 35,000
Maximum Hourly Emission Rate (g/s): 0.004
Predicted 1-Hour Maximum Ground-Level Concentration (ug/m3): 23.3
MAGLC (ug/m3): 838

Physical changes to or changes in the method of operation of the emissions unit after its installation 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 be satisfied. If, upon evalution, 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 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 submit deviation (excursion) reports which identify all 3-hour blocks of time during which the average combustion temperature within the 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. Each report shall be submitted within 30 days after the deviation occurs.

2. The permittee shall submit quarterly summaries which include a log of the downtime for the capture (collection) system (including failure to demonstrate negative pressure within the press dryer), control device, and monitoring equipment, when the associated emissions unit was in operation. These summaries shall be submitted by January 31, April 30, July 31, and October 31 of each year and shall cover the previous calendar quarters.

3. The permittee shall submit deviation (excursion) reports which identify each month during which the rolling, 12-month emissions of any single HAP from all emissions units at the facility exceeded 9.9 tons per year, and the actual rolling, 12-month emissions of each such single HAP for each such month.

4. The permittee shall submit deviation (excursion) reports which identify each month during which the rolling, 12-month emissions of combined HAPs from all emissions units at the facility exceeded 24.9 tons per year, and the actual rolling, 12-month emissions of combined HAPs for each such month.

5. Reporting is not required for material usage because the Operational Restrictions in Section B.3 of these terms and conditions are based on the maximum hourly consumption rate for this emissions unit.

E. Testing Requirements

1. The permittee shall conduct, or have conducted, emission testing for the thermal oxidizer for emissions units R003, R004, R005, R006, and R007 in accordance with the following requirements:

   a. The emission testing shall be conducted within 6 months of the effective date of this permit.

   b. The emission testing shall be conducted to demonstrate compliance with the destruction efficiency limitation for VOC emissions.

   c. The emission tests shall be conducted while the emissions unit is operating at normal or representative operating conditions. Prior to testing, the permittee shall propose to the Ohio EPA Northeast District Office an operating scenario for the presses being tested

which is representative of actual operating conditions and VOC input rate to the control device.

d. The destruction 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 and U.S. EPA Methods 25 or 25A of 40 CFR Part 60, Appendix A. Formulation data from the manufacturer, or if required

Method 24A, shall be used to determine VOC contents of the inks, fountain solutions, and blanket washes. 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.

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

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

A comprehensive written report on the results of the emissions test(s) shall be signed by the person or persons responsible for the tests and submitted to the Ohio EPA Northeast District Office within 30 days following completion of the test(s). The permittee may request additional time for submittal of the written report, where warranted, with prior approval from the Ohio EPA Northeast District Office.

2. Compliance with the emission limitations in Section A.1 of these terms and conditions shall be determined in accordance with the following method(s):

a. Emission Limitation:

Volatile organic compound emissions shall not exceed 44.2 lbs/day from the stack associated with this emissions unit.

Applicable Compliance Method:

Compliance shall be demonstrated by the following equation:

$S = (1 - DRE) \times [0.8(P) + A_d(FS) + B_d(BW)]$

Where

S = stack emissions, equation obtained from Engineering Guide #56;

DRE = destruction efficiency of the thermal incinerator, expressed as a decimal or percent which was determined during the most recent performance test which demonstrated compliance with the pound per hour emission limitation from the stack (a 95% destruction efficiency shall be used until testing has been completed);

0.8 = 20% of VOC's in heatset inks retained by substrate, 80% emitted per Engineering Guide #56;

P = (ink usage rate, lbs/month) x (ink VOC content, % by weight) x (1 month/number of days of operation);

A_d = mass fraction of fountain solution VOC routed to dryer and control device = 0.7 for alcohol substitutes;

FS = (fountain solution usage rate, lbs/month) x (fountain solution VOC content, % by wt.) x (1 month/number of days of operation);

B_d = mass fraction of cleanup solvent routed to dryer and control device = 0.4 for automatic blanket wash; and

BW = (blanket wash usage rate, lbs/month) x (blanket wash VOC content, % by wt.) x (1 month/number of days of operation).

b. Emission Limitation:

Volatile organic compound emissions shall not exceed 8.06 TPY from the stack associated with this emissions unit.

Applicable Compliance Method:

The annual stack emission limitation was established by multiplying the pound per hour OC stack emission limitation by the maximum operating schedule of 8760 hours per year and dividing by 2000 pounds per ton. Therefore, a demonstration of compliance with the hourly stack emission limitation shall also be a demonstration of compliance with the annual stack emission limitation. Actual annual VOC emissions from the stack associated with this emissions unit shall be determined by summing the average daily emissions in Section E.2.a on an annual basis.

c. Emission Limitation:

Fugitive volatile organic compound emissions shall not exceed 7.44 TPY.

Applicable Compliance Method:

Compliance shall be demonstrated by the record keeping specified in Section C.1 of these terms and conditions and the following equation:

$F = [A_f(FS) + B_f(BW) + AD] \times 1 \text{ ton}/2000 \text{ lbs}$

Where

F = annual fugitive emissions from emissions unit R006, equation obtained from Engineering Guide #56 with the addition of adhesive emissions which are all fugitive according to the facility's permit application;

A_f = mass fraction of fountain solution VOC routed to dryer and control device = 0.7 for alcohol substitutes;

FS = (fountain solution usage rate, lbs/yr) x (fountain solution VOC content, % by wt.);

B_f = mass fraction of cleanup solvent emitted as fugitive = 0.6 for automatic blanket wash;

BW = (blanket wash usage rate, lbs/yr) x (blanket wash VOC content, % by wt.); and

AD = (adhesive usage rate, lbs/yr) x (adhesive VOC content, % by wt.).

d. Emission Limitation:

Particulate emissions shall not exceed 2.4 TPY.

Applicable Compliance Method:

The annual particulate emission limitation was established by multiplying the pound per hour particulate emission limitation by the maximum operating schedule of 8760 hours per year and dividing by 2000 pounds per ton. Therefore, a demonstration of compliance with the hourly particulate emission limitation shall also be a demonstration of compliance with the annual particulate emission limitation. Actual annual VOC emissions from the stack associated with this emissions unit shall be determined by summing the average daily emissions in Section E.2.a on an annual basis.

e. Emission Limitation:

Visible particulate emissions from the stack associated with this emissions unit shall not exceed five percent opacity as a six-minute average.

Applicable Compliance Method:

If required, compliance shall be determined through visible emissions observations performed in accordance with 40 CFR Part 60, Appendix A, Method 9, and the

procedures specified in OAC rule 3745-17-03(B)(1).

f. Emission Limitation:

Emissions of volatile organic compounds vented to the thermal oxidizer shall be reduced by at least ninety-five percent (95%), by weight.

Applicable Compliance Method:

Compliance shall be determined through stack testing specified in Section E.1 of these terms and conditions.

g. Emission Limitation:

Particulate emissions shall not exceed 0.551 lb/hr.

Applicable Compliance Method:

If required, compliance shall be determined through stack testing in accordance with 40 CFR Part 60, Appendix A, Method 5. Per the Ohio Engineering Guide #56, no particulate testing should be necessary since this emissions unit is controlled by a thermal oxidizer.

h. Emission Limitation:

The emissions of each single hazardous air pollutant (HAP) from all emissions units at the facility shall not exceed 9.9 tons per year, based upon a rolling, 12-month summation.

Applicable Compliance Method:

Compliance shall be based upon the record keeping specified in Section C of these terms and conditions.

i. Emission Limitation:

The emissions of the combined HAPs from all emissions units at the facility shall not exceed 24.9 tons per year, based upon a rolling, 12-month summation.

Applicable Compliance Method:

Compliance shall be based upon the record keeping specified in Section C of these terms and conditions.

3. Formulation data or US EPA Method 24 shall be used to determine the VOC contents of all the inks, fountain solutions, blanket washes, and adhesives employed in this emissions unit.

F. Miscellaneous Requirements

None

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
R007 - Six-Unit Harris M110C Heatset Web Offset (lithographic) printing press equipped with an ink setting oven and a thermal incinerator (large Katec) The requirements of this permit supersede those requirements identified in Permit to Install number 02-16062 issued on March 7, 2002.	OAC rule 3745-31-05(A)(3)

	Applicable Emissions Limitations/Control Measures	
OAC rule 3745-17-07(A)(1)	Volatile organic compound emissions shall not exceed 28.8 lbs/day from the stack associated with this emissions unit.	NOx emissions from the dryer associated with this emissions unit shall not exceed 0.88 lb/hr and 3.854 TPY. See A.2.f below.
OAC rule 3745-17-11	Volatile organic compound emissions shall not exceed 5.3 TPY from the stack associated with this emissions unit.	CO emissions from the dryer associated with this emissions unit shall not exceed 0.73 lb/hr and 3.174 TPY. See A.2.g below.
OAC rule 3745-21-07(G)(2)	Fugitive volatile organic compound emissions shall not exceed 6.9 TPY.	NOx emissions from the thermal oxidizer associated with this emissions unit (R007) and emissions units R003, R004, R005, and R006 shall not exceed 0.717 lb/hr and 3.14 TPY. See A.2.h below.
OAC rule 3745-21-07(G)(6)	Particulate emissions shall not exceed 2.4 TPY.	CO emissions from the thermal oxidizer associated with this emissions unit (R007) and emissions units R003, R004, R005, and R006 shall not exceed 0.60 lb/hr and 2.63 TPY. See A.2.i below.
OAC rule 3745-31-05(D)	Visible particulate emissions from the stack associated with this emissions unit shall not exceed five percent opacity as a six-minute average.	The emission limitation specified by this rule is less stringent than the emission limitation established pursuant to OAC rule 3745-31-05(A)(3).
	Emissions of volatile organic compounds vented to the thermal oxidizer shall be reduced by at least ninety-five percent (95%), by weight.	Particulate emissions shall not exceed 0.551 lb/hr. See A.2.a below.
	The requirements of this rule also include compliance with the requirements of OAC rule 3745-31-05(D) and OAC rule 3745-17-11.	The emission limitation specified by this rule is less stringent than the emission limitation established pursuant to OAC rule 3745-31-05(A)(3). See A.2.b below.
	See A.2.e below.	

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

See A.2.c, A.2.d, A.2.e and B.3 below.

2. Additional Terms and Conditions

2.a The uncontrolled mass rate of particulate emissions from this emissions unit is less than 10 pounds per hour according to Engineering Guide #56. Therefore, pursuant to OAC rule 3745-17-11(A)(2)(a)(ii), Figure II of OAC rule 3745-17-11 does not apply. The maximum
process weight rate for this emissions unit in accordance with Engineering Guide #56 is 64.1 pounds per hour based on the maximum quantities of ink, fountain solution, and blanket wash employed hourly. Therefore, in accordance with Table I of OAC rule 3745-17-11, the allowable rate of particulate emissions is 0.551 pound per hour.

2.b OAC rule 3745-21-07(G)(2) limits organic compound (OC) emissions to 8 pounds per hour and 40 pounds per day or requires an 85% reduction in OC emissions. The thermal oxidizer is employed to comply with the requirement to achieve an 85% reduction in OC emissions instead of complying with the OC emission limits of 8 pounds per hour and 40 pounds per day. The emission limitation established pursuant to OAC rule 3745-31-05(A)(3) requires a 95% reduction in OC emission which is more stringent than the emission limitation specified by OAC rule 3745-21-07(G)(2).

2.c The emissions of each single hazardous air pollutant (HAP) from all emissions units at the facility shall not exceed 9.9 tons per year, based upon a rolling, 12-month summation.

2.d The emissions of combined HAPs from all emissions units at the facility shall not exceed 24.9 tons per year, based upon a rolling, 12-month summation.

2.e The following volatile organic compound (VOC) contents shall not be exceeded for this emissions unit:

i. Ink: 47% VOC by weight;

ii. Fountain solution: 15% VOC by weight; and

iii. Adhesive: 2% VOC by weight.

2.f The hourly and annual NOx emission limitations for the dryer associated with this emissions unit are based on an emission factor of 100 lbs NOx/mmscf for uncontrolled natural gas combustion in small boilers (AP-42, Table 1.4-1, 2/98), the maximum operating value for the natural gas burner in the dryer (8.8 mmBtu/hr), and 8760 maximum potential operating hours. Therefore; monitoring, record keeping, reporting, and testing is not required for NOx emissions from this emissions unit.

2.g The hourly and annual CO emission limitations for the dryer associated with this emissions unit are based on an emission factor of 84 lbs CO/mmscf for uncontrolled natural gas combustion in small boilers (AP-42, Table 1.4-1, 2/98), the maximum operating value for the natural gas burner in the dryer (8.8 mmBtu/hr), and 8760 maximum potential operating hours. Therefore; monitoring, record keeping, reporting, and testing is not required for CO emissions from this emissions unit.

2.h The hourly and annual NOx emission limitations for the thermal oxidizer associated with this emissions unit (R007) and emissions units R003, R004, R005, and R006 are based on an emission factor of 100 lbs NOx/mmscf for uncontrolled natural gas combustion in small boilers (AP-42, Table 1.4-1, 2/98), the maximum operating value for the natural gas burner in the thermal oxidizer (7.17 mmBtu/hr), and 8760 maximum potential operating hours. Therefore; monitoring, record keeping, reporting, and testing is not required for NOx emissions from this emissions unit.

2.i The hourly and annual CO emission limitations for the thermal oxidizer associated with this emissions unit (R007) and emissions units R003, R004, R005, and R006 are based on an emission factor of 84 lbs CO/mmscf for uncontrolled natural gas combustion in small boilers (AP-42, Table 1.4-1, 2/98), the maximum operating value for the natural gas burner in the thermal oxidizer (7.17 mmBtu/hr), and 8760 maximum potential operating hours. Therefore; monitoring, record keeping, reporting, and testing is not required for CO emissions from this emissions unit.

B. Operational Restrictions

1. The average combustion temperature within the thermal incinerator, for any 3-hour block of time when the emissions unit is in operation, shall not be more than 50 degrees Fahrenheit below the average temperature during the compliance emission test required in Section E.1 of these terms and conditions or below 1200 degrees Fahrenheit until such testing has been completed.

2. The permittee shall maintain negative pressure in the press dryer when the emissions unit is in operation.

3. Material usage for this emissions unit shall not exceed the following limits:

   a. Ink: 262.8 tons/yr;

   b. Blanket wash: 5.7 tons/yr;

   c. Fountain solution concentrate: 12.3 tons/yr; and

   d. Adhesive: 162.1 tons/yr.

C. Monitoring and/or Recordkeeping Requirements

1. The permittee shall collect and record the following information each month* for this emissions unit for the purpose of determining annual organic compound emissions:

   a. The name and identification number of each ink, fountain solution, blanket wash, and adhesive employed;

   b. The amount, in pounds, of each ink, fountain solution, blanket wash, and adhesive employed;

   c. The VOC content of each ink, fountain solution, blanket wash, and adhesive employed, in percent by weight, as applied;

   d. The number of days the emissions unit is in operation;

   e. The total controlled VOC emission rate for all inks, fountain solutions, and blanket washes; in pounds or ton(s), calculated using the destruction efficiency determined from the most recent performance test that demonstrated the emissions unit was in compliance and the formula contained in Section E of these terms and conditions; and

   f. The total fugitive VOC emission rate for all fountain solutions, blanket washes, and adhesives; in pounds or ton(s), calculated using the formula contained in Section E of these terms and conditions.

   * Since the daily VOC emission limitation for this emissions unit is based on maximum potential material usage, daily record keeping is not required. It is acceptable for the facility to maintain monthly records for the purpose of determining actual annual VOC

emissions.

2. The permittee shall operate and maintain a continuous temperature monitor and recorder which measures and records the combustion temperature within the thermal incinerator when the emissions unit is in operation.

3. 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 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.

b. A log of the downtime for the capture (collection) system, control device, and monitoring equipment, when the associated emissions unit was in operation.

4. Monitoring and recordkeeping for the pressure in the press dryer is not required because the press dryer is interlocked with the thermal oxidizer control system and neither can be operated unless they are under negative pressure.

5. The permittee shall collect and record the following information each month for all printing presses at the facility:

a. The name and identification number of each ink, fountain solution, blanket wash, and adhesive, as applied.

b. The individual HAP[1] content for each HAP of each ink, fountain solution, blanket wash, and adhesive in weight percent of individual HAP, as applied.

c. The total combined HAP content of each ink, fountain solution, blanket wash, and adhesive in weight percent of combined HAPs (sum all the individual HAP contents from b), as applied.

d. The number of pounds of each ink, fountain solution, blanket wash, and adhesive employed.

e. The total individual HAP emissions for each HAP from all inks, fountain solutions, blanket washes, and adhesives employed, in pounds or tons per month [for each HAP, the sum of (b times d) for each ink, fountain solution, blanket wash, and adhesive].

f. The total combined HAP emissions from all inks, fountain solutions, blanket washes, and adhesives, in pounds or tons per month [the sum of © times d) for each ink, fountain solution, blanket wash, and adhesive].

g. The updated rolling, 12-month total of the individual HAP emissions for each HAP from all inks, fountain solutions, blanket washes, and adhesives employed, in pounds or tons.

h. The updated rolling, 12-month total of the total combined HAP emissions from all inks, fountain solutions, blanket washes, and adhesives employed, in pounds or tons.

[1] A listing of the HAPs can be found in Section 112(b) of the Clean Air Act or can be obtained by contacting your Ohio EPA field office or local air agency contact. Material Safety Data Sheets typically include a listing of the solvents contained in the coatings or cleanup materials. This

information does not have to be kept on an emissions unit-by-emissions unit basis.

6. The permittee shall collect and record the following information each month for this emissions unit for the purpose of determining compliance with material usage and VOC content limitations:

   a. The name and identification number of each ink, fountain solution, blanket wash, and adhesive employed;

   b. The amount, in pounds, of each ink, fountain solution, blanket wash, and adhesive employed;

   c. The VOC content of each ink, fountain solution, blanket wash, and adhesive employed, in percent by weight, as applied;

   d. A record of each liquid organic material employed in this emissions unit indicating whether or not the liquid organic material is photochemically reactive as defined in OAC rule 3745-21-01(C)(5); and

   e. The rolling, 12-month summation of material usage of each of the following materials employed in this emissions unit, in tons per year: ink, blanket wash, fountain solution concentrate, and adhesive.

7. The permit to install for this emissions unit (R007) was evaluated based on the actual materials employed 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 potentially 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: 1, 2, 4 trimethyl benzene
   TLV (ug/m3): 179,000
   Maximum Hourly Emission Rate (g/s): 0.023
   Predicted 1-Hour Maximum Ground-Level Concentration (ug/m3): 134.9
   MAGLC (ug/m3): 4272

   Pollutant: ethylene glycol
   TLV (ug/m3): 254,000
   Maximum Hourly Emission Rate (g/s): 0.008

Predicted 1-Hour Maximum Ground-Level Concentration (ug/m3): 45.5
MAGLC (ug/m3): 6040

Pollutant: ethylene glycol N-butyl ether
TLV (ug/m3): 97,000
Maximum Hourly Emission Rate (g/s): 0.004
Predicted 1-Hour Maximum Ground-Level Concentration (ug/m3): 22.8
MAGLC (ug/m3): 2301

Pollutant: vinyl acetate
TLV (ug/m3): 35,000
Maximum Hourly Emission Rate (g/s): 0.004
Predicted 1-Hour Maximum Ground-Level Concentration (ug/m3): 23.3
MAGLC (ug/m3): 838

Physical changes to or changes in the method of operation of the emissions unit after its installation 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 be satisfied. If, upon evalution, 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 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 submit deviation (excursion) reports which identify all 3-hour blocks of time during which the average combustion temperature within the 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. Each report shall be submitted within 30 days after the deviation occurs.

2. The permittee shall submit quarterly summaries which include a log of the downtime for the capture (collection) system (including failure to demonstrate negative pressure within the press dryer), control device, and monitoring equipment, when the associated emissions unit was in operation. These summaries shall be submitted by January 31, April 30, July 31, and October 31 of each year and shall cover the previous calendar quarters.

3. The permittee shall submit deviation (excursion) reports which identify each month during which the rolling, 12-month emissions of any single HAP from all emissions units at the facility exceeded 9.9 tons per year, and the actual rolling, 12-month emissions of each such single HAP for each such month.

4. The permittee shall submit deviation (excursion) reports which identify each month during which the rolling, 12-month emissions of combined HAPs from all emissions units at the facility exceeded 24.9 tons per year, and the actual rolling, 12-month emissions of combined HAPs for each such month.

5. Reporting is not required for material usage because the Operational Restrictions in Section B.3 of these terms and conditions are based on the maximum hourly consumption rate for this emissions unit.

E. Testing Requirements

1. The permittee shall conduct, or have conducted, emission testing for the thermal oxidizer for emissions units R003, R004, R005, R006, and R007 in accordance with the following requirements:

   a. The emission testing shall be conducted within 6 months of the effective date of this permit.

b. The emission testing shall be conducted to demonstrate compliance with the destruction efficiency limitation for OC emissions.

c. The emission tests shall be conducted while the emissions unit is operating at normal or representative operating conditions. Prior to testing, the permittee shall propose to the Ohio EPA Northeast District Office an operating scenario for the presses being tested which is representative of actual operating conditions and VOC input rate to the control device.

d. The destruction 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 and U.S. EPA Methods 25 or 25A of 40 CFR Part 60, Appendix A. Formulation data from the manufacturer, or if required Method 24A, shall be used to determine VOC contents of the inks, fountain solutions, and blanket washes. 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.

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

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

A comprehensive written report on the results of the emissions test(s) shall be signed by the person or persons responsible for the tests and submitted to the Ohio EPA Northeast District Office within 30 days following completion of the test(s). The permittee may request additional time for submittal of the written report, where warranted, with prior approval from the Ohio EPA Northeast District Office.

2. Compliance with the emission limitations in Section A.1. of these terms and conditions shall be determined in accordance with the following method(s):

a. Emission Limitation:

Volatile organic compound emissions shall not exceed 28.8 lbs/day from the stack associated with this emissions unit.

Applicable Compliance Method:

Compliance shall be demonstrated by the following equation:

$S = (1 - DRE) \times [0.8(P) + A_d(FS) + B_d(BW)]$

Where

S = stack emissions, equation obtained from Engineering Guide #56;

DRE = destruction efficiency of the thermal incinerator, expressed as a decimal or percent which was determined during the most recent performance test which demonstrated compliance with the pound per hour emission limitation from the stack (a 95% destruction efficiency shall be used until testing has been completed);

0.8 = 20% of VOC's in heatset inks retained by substrate, 80% emitted per Engineering Guide #56;

P = (ink usage rate, lbs/month) x (ink VOC content, % by weight) x (1 month/number of days of operation);

A_d = mass fraction of fountain solution VOC routed to dryer and control device = 0.7 for alcohol substitutes;

FS = (fountain solution usage rate, lbs/month) x (fountain solution VOC content, % by wt.) x (1 month/number of days of operation);

B_d = mass fraction of cleanup solvent routed to dryer and control device = 0.4 for automatic blanket wash; and

BW = (blanket wash usage rate, lbs/month) x (blanket wash VOC content, % by wt.) x (1 month/number of days of operation).

b. Emission Limitation:

Volatile organic compound emissions shall not exceed 5.3 TPY from the stack associated with this emissions unit.

Applicable Compliance Method:

The annual stack emission limitation was established by multiplying the pound per hour OC stack emission limitation by the maximum operating schedule of 8760 hours per year and dividing by 2000 pounds per ton. Therefore, a demonstration of compliance with the hourly stack emission limitation shall also be a demonstration of compliance with the annual stack emission limitation. Actual annual VOC emissions from the stack associated with this emissions unit shall be determined by summing the average daily emissions in Section E.2.a on an annual basis.

c. Emission Limitation:

Fugitive volatile organic compound emissions shall not exceed 6.9 TPY.

Applicable Compliance Method:

Compliance shall be demonstrated by the record keeping specified in Section C.1 of these terms and conditions and the following equation:

$F = [A_f(FS) + B_f(BW) + AD] \times 1$ ton/2000 lbs

Where

F = annual fugitive emissions from emissions unit R007, equation obtained from Engineering Guide #56 with the addition of adhesive emissions which are all fugitive according to the facility's permit application;

A_f = mass fraction of fountain solution VOC routed to dryer and control device = 0.7 for alcohol substitutes;

FS = (fountain solution usage rate, lbs/yr) x (fountain solution VOC content, % by wt.);

B_f = mass fraction of cleanup solvent emitted as fugitive = 0.6 for automatic blanket wash;

BW = (blanket wash usage rate, lbs/yr) x (blanket wash VOC content, % by wt.); and

AD = (adhesive usage rate, lbs/yr) x (adhesive VOC content, % by wt.).

d. Emission Limitation:

Particulate emissions shall not exceed 2.4 TPY.

Applicable Compliance Method:

The annual particulate emission limitation was established by multiplying the pound per hour particulate emission limitation by the maximum operating schedule of 8760 hours per year and dividing by 2000 pounds per ton. Therefore, a demonstration of compliance with the hourly particulate emission limitation shall also be a demonstration of compliance with the annual particulate emission limitation.

e. Emission Limitation:

Visible particulate emissions from the stack associated with this emissions unit shall not exceed five percent opacity as a six-minute average.

Applicable Compliance Method:

If required, compliance shall be determined through visible emissions observations performed in accordance with 40 CFR Part 60, Appendix A, Method 9, and the procedures specified in OAC rule 3745-17-03(B)(1).

f. Emission Limitation:

Emissions of volatile organic compounds vented to the thermal oxidizer shall be reduced by at least ninety-five percent (95%), by weight.

Applicable Compliance Method:

Compliance shall be determined through stack testing specified in Section E.1 of these terms and conditions.

g. Emission Limitation:

Particulate emissions shall not exceed 0.551 lb/hr.

Applicable Compliance Method:

If required, compliance shall be determined through stack testing in accordance with 40 CFR Part 60, Appendix A, Method 5. Per the Ohio Engineering Guide #56, no particulate testing should be necessary since this emissions unit is controlled by a thermal oxidizer.

h. Emission Limitation:

The emissions of each single hazardous air pollutant (HAP) from all emissions units at the facility shall not exceed 9.9 tons per year, based upon a rolling, 12-month summation.

Applicable Compliance Method:

Compliance shall be based upon the record keeping specified in Section C of these terms and conditions.

i. Emission Limitation:

The emissions of the combined HAPs from all emissions units at the facility shall not exceed 24.9 tons per year, based upon a rolling, 12-month summation.

Applicable Compliance Method:

Compliance shall be based upon the record keeping specified in Section C of these terms and conditions.

3. Formulation data or US EPA Method 24 shall be used to determine the VOC contents of all the inks, fountain solutions, blanket washes, and adhesives employed in this emissions unit.

F. Miscellaneous Requirements

None

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	
R008 - Six-Unit Harris M1000 Heatset Web Offset (lithographic) printing press equipped with an ink setting oven and a thermal incinerator (Applied Web Systems Thermal Oxidizer)	OAC rule 3745-31-05(A)(3)	
		OAC rule 3745-17-07(A)(1)
		OAC rule 3745-17-11
		OAC rule 3745-21-07(G)(2)

	Applicable Emissions Limitations/Control Measures	
OAC rule 3745-21-07(G)(6)	Volatile organic compound emissions shall not exceed 1.84 lbs/hr from the stack associated with this emissions unit.	NOx emissions from the dryer associated with this emissions unit shall not exceed 0.88 lb/hr and 3.854 TPY. See A.2.f below. CO emissions from the dryer associated with this emissions unit shall not exceed 0.73 lb/hr and 3.174 TPY. See A.2.g below.
OAC rule 3745-31-05(D)	Volatile organic compound emissions shall not exceed 8.06 TPY from the stack associated with this emissions unit. Fugitive volatile organic compound emissions shall not exceed 7.44 TPY. Particulate emissions shall not exceed 2.4 TPY. Visible particulate emissions from the stack associated with this emissions unit shall not exceed five percent opacity as a six-minute average. Emissions of volatile organic compounds vented to the thermal oxidizer shall be reduced by at least ninety-five percent (95%), by weight. The requirements of this rule also include compliance with the requirements of OAC rule 3745-31-05(D) and OAC rule 3745-17-11. See A.2.e below.	The emission limitation specified by this rule is less stringent than the emission limitation established pursuant to OAC rule 3745-31-05(A)(3). Particulate emissions shall not exceed 0.551 lb/hr. See A.2.a below. The emission limitation specified by this rule is less stringent than the emission limitation established pursuant to OAC rule 3745-31-05(A)(3). See A.2.b below. The emission limitation specified by this rule is less stringent than the emission limitation established pursuant to OAC rule 3745-31-05(A)(3). See A.2.c, A.2.d, A.2.e and B.3 below.

2. Additional Terms and Conditions

2.a The uncontrolled mass rate of particulate emissions from this emissions unit is less than 10 pounds per hour according to Engineering Guide #56. Therefore, pursuant to OAC rule 3745-17-11(A)(2)(a)(ii), Figure II of OAC rule 3745-17-11 does not apply. The maximum process weight rate for this emissions unit in accordance with Engineering Guide #56 is 100 pounds per hour based on the maximum quantities of ink, fountain solution, and blanket wash employed hourly. Therefore, in accordance with Table I of OAC rule 3745-17-11, the allowable rate of particulate emissions is 0.551 pound per hour.

2.b OAC rule 3745-21-07(G)(2) limits organic compound (OC) emissions to 8 pounds per hour and 40 pounds per day or requires an 85% reduction in OC emissions. The thermal oxidizer is employed to comply with the requirement to achieve an 85% reduction in OC emissions instead of complying with the OC emission limits of 8 pounds per hour and 40 pounds per day. The emission limitation established pursuant to OAC rule 3745-31-05(A)(3) requires a 95% reduction in OC emissions which is more stringent than the emission limitation specified by OAC rule 3745-21-07(G)(2).

2.c The emissions of each single hazardous air pollutant (HAP) from all emissions units at the facility shall not exceed 9.9 tons per year, based upon a rolling, 12-month summation.

2.d The emissions of combined HAPs from all emissions units at the facility shall not exceed 24.9 tons per year, based upon a rolling, 12-month summation.

2.e The following volatile organic compound (VOC) contents shall not be exceeded for this emissions unit:

i. Ink: 47% VOC by weight;

ii. Fountain solution: 15% VOC by weight; and

iii. Adhesive: 2% VOC by weight.

2.f The hourly and annual NOx emission limitations for the dryer associated with this emissions unit are based on an emission factor of 100 lbs NOx/mmscf for uncontrolled natural gas combustion in small boilers (AP-42, Table 1.4-1, 2/98), the maximum operating value for the natural gas burner in the dryer (8.8 mmBtu/hr), and 8760 maximum potential operating hours. Therefore; monitoring, record keeping, reporting, and testing is not required for NOx emissions from this emissions unit.

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2.g The hourly and annual CO emission limitations for the dryer associated with this emissions unit are based on an emission factor of 84 lbs CO/mmscf for uncontrolled natural gas combustion in small boilers (AP-42, Table 1.4-1, 2/98), the maximum operating value for the natural gas burner in the dryer (8.8 mmBtu/hr), and 8760 maximum potential operating hours. Therefore; monitoring, record keeping, reporting, and testing is not required for CO emissions from this emissions unit.

B. Operational Restrictions

1. The average combustion temperature within the thermal incinerator, for any 3-hour block of time when the emissions unit is in operation, shall not be more than 50 degrees Fahrenheit below the average temperature during the compliance emission test required in Section E.1 of these terms and conditions or below 1200 degrees Fahrenheit until such testing has been completed.

2. The permittee shall maintain negative pressure in the press dryer when the emissions unit is in operation.

3. Material usage for this emissions unit shall not exceed the following limits:

   a. Ink: 416.1 tons/yr;

   b. Blanket wash: 6.6 tons/yr;

   c. Fountain solution concentrate: 15.3 tons/yr; and

   d. Adhesive: 162.1 tons/yr.

C. Monitoring and/or Recordkeeping Requirements

1. The permittee shall collect and record the following information each month for this emissions unit for the purpose of determining annual organic compound emissions:

   a. The name and identification number of each ink, fountain solution, blanket wash, and adhesive employed;

   b. The amount, in pounds, of each ink, fountain solution, blanket wash, and adhesive employed;

   c. The VOC content of each ink, fountain solution, blanket wash, and adhesive employed, in percent by weight, as applied;

   d. The total controlled VOC emission rate for all inks, fountain solutions, and blanket washes; in pounds or ton(s), calculated using the destruction efficiency determined from the most recent performance test that demonstrated the emissions unit was in compliance and the formula contained in Section E of these terms and conditions; and

   e. The total fugitive VOC emission rate for all fountain solutions, blanket washes, and

adhesives; in pounds or ton(s), calculated using the formula contained in Section E of these terms and conditions.

2. The permittee shall operate and maintain a continuous temperature monitor and recorder which measures and records the combustion temperature within the thermal incinerator when the emissions unit is in operation.

3. 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 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.

   b. A log of the downtime for the capture (collection) system, control device, and monitoring equipment, when the associated emissions unit was in operation.

4. Monitoring and recordkeeping for the pressure in the press dryer is not required because the press dryer is interlocked with the thermal oxidizer control system and neither can be operated unless they are under negative pressure.

5. The permittee shall collect and record the following information each month for all printing presses at the facility:

   a. The name and identification number of each ink, fountain solution, blanket wash, and adhesive, as applied.

   b. The individual HAP[1] content for each HAP of each ink, fountain solution, blanket wash, and adhesive in weight percent of individual HAP, as applied.

   c. The total combined HAP content of each ink, fountain solution, blanket wash, and adhesive in weight percent of combined HAPs (sum all the individual HAP contents from b), as applied.

   d. The number of pounds of each ink, fountain solution, blanket wash, and adhesive employed.

   e. The total individual HAP emissions for each HAP from all inks, fountain solutions, blanket washes, and adhesives employed, in pounds or tons per month [for each HAP, the sum of (b times d) for each ink, fountain solution, blanket wash, and adhesive].

   f. The total combined HAP emissions from all inks, fountain solutions, blanket washes, and adhesives, in pounds or tons per month [the sum of © times d) for each ink, fountain

solution, blanket wash, and adhesive].

g. The updated rolling, 12-month total of the individual HAP emissions for each HAP from all inks, fountain solutions, blanket washes, and adhesives employed, in pounds or tons.

h. The updated rolling, 12-month total of the total combined HAP emissions from all inks, fountain solutions, blanket washes, and adhesives employed, in pounds or tons.

[1] A listing of the HAPs can be found in Section 112(b) of the Clean Air Act or can be obtained by contacting your Ohio EPA field office or local air agency contact. Material Safety Data Sheets typically include a listing of the solvents contained in the coatings or cleanup materials. This information does not have to be kept on an emissions unit-by-emissions unit basis.

6. The permittee shall collect and record the following information each month for this emissions unit for the purpose of determining compliance with material usage and VOC content limitations:

a. The name and identification number of each ink, fountain solution, blanket wash, and adhesive employed;

b. The amount, in pounds, of each ink, fountain solution, blanket wash, and adhesive employed;

c. The VOC content of each ink, fountain solution, blanket wash, and adhesive employed, in percent by weight, as applied;

d. A record of each liquid organic material employed in this emissions unit indicating whether or not the liquid organic material is photochemically reactive as defined in OAC rule 3745-21-01(C)(5); and

e. The rolling, 12-month summation of material usage of each of the following materials employed in this emissions unit, in tons per year: ink, blanket wash, fountain solution concentrate, and adhesive.

7. The permit to install for this emissions unit (R008) was evaluated based on the actual materials employed 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 potentially 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
TLV (ug/m3): 254,000
Maximum Hourly Emission Rate (g/s): 0.009
Predicted 1-Hour Maximum Ground-Level Concentration (ug/m3): 75.9
MAGLC (ug/m3): 6040

Pollutant: ethylene glycol N-butyl ether
TLV (ug/m3): 97,000
Maximum Hourly Emission Rate (g/s): 0.005
Predicted 1-Hour Maximum Ground-Level Concentration (ug/m3): 38.0
MAGLC (ug/m3): 2301

Pollutant: vinyl acetate
TLV (ug/m3): 35,000
Maximum Hourly Emission Rate (g/s): 0.003
Predicted 1-Hour Maximum Ground-Level Concentration (ug/m3): 22.8
MAGLC (ug/m3): 838

Physical changes to or changes in the method of operation of the emissions unit after its installation 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 be satisfied. If, upon evalution, 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 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.

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

a. a description of the parameters changed (composition of materials, new pollutants emitted, change in stack/exhaust parameters, etc.);

b. documentation of its evaluation and determination that the changed emissions unit still satisfies the "Air Toxic Policy"; and

c. where computer modeling is performed, a copy of the resulting computer model runs that show the results of the application of the "Air Toxic Policy" for the change.

D. Reporting Requirements

1. The permittee shall submit deviation (excursion) reports which identify all 3-hour blocks of time during which the average combustion temperature within the 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. Each report shall be submitted within 30 days after the deviation occurs.

2. The permittee shall submit quarterly summaries which include a log of the downtime for the capture (collection) system (including failure to demonstrate negative pressure within the press dryer), control device, and monitoring equipment, when the associated emissions unit was in operation. These summaries shall be submitted by January 31, April 30, July 31, and October 31 of each year and shall cover the previous calendar quarters.

3. The permittee shall submit deviation (excursion) reports which identify each month during which the rolling, 12-month emissions of any single HAP from all emissions units at the facility exceeded 9.9 tons per year, and the actual rolling, 12-month emissions of each such single HAP for each such month.

4. The permittee shall submit deviation (excursion) reports which identify each month during which the rolling, 12-month emissions of combined HAPs from all emissions units at the facility exceeded 24.9 tons per year, and the actual rolling, 12-month emissions of combined HAPs for each such month.

5. Reporting is not required for material usage because the Operational Restrictions in Section B.3 of these terms and conditions are based on the maximum hourly consumption rate for this emissions unit.

E. Testing Requirements

1. 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 6 months of the effective date of this permit.

b. The emission testing shall be conducted to demonstrate compliance with the destruction efficiency limitation for VOC emissions and the allowable hourly VOC mass rate of emissions.

c. The emission tests shall be conducted while the emissions unit is operating at normal or representative operating conditions. Prior to testing, the permittee shall propose to the Ohio EPA Northeast District Office an operating scenario for the press being tested which is representative of actual operating conditions and VOC input rate to the control device.

d. The destruction efficiency (i.e., the percent reduction in mass emissions between the inlet and outlet of the control system) and compliance with the allowable mass emission rate shall be determined in accordance with the test methods and procedures specified in OAC rule 3745-21-10 and U.S. EPA Methods 25 or 25A of 40 CFR Part 60, Appendix A. Formulation data from the manufacturer, or if required Method 24A, shall be used to determine VOC contents of the inks, fountain solutions, and blanket washes. 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. In accordance with Engineering Guide #56, the results of the performance test shall be converted to pounds of VOC per hour by multiplying the reported pounds of volatile organic carbon per hour (from Method 25 or 25A) by a ratio of 1.2 pounds of organic material per pound of carbon.

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

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

A comprehensive written report on the results of the emissions test(s) shall be signed by the person or persons responsible for the tests and submitted to the Ohio EPA Northeast District Office within 30 days following completion of the test(s). The permittee may request additional time for submittal of the written report, where warranted, with prior approval from the Ohio EPA Northeast District Office.

2. Compliance with the emission limitations in Section A.1. of these terms and conditions shall be determined in accordance with the following method(s):

a. Emission Limitation:

Volatile organic compound emissions shall not exceed 1.84 lbs/hr from the stack associated with this emissions unit.

Applicable Compliance Method:

Initial compliance shall be determined in accordance with Section E.1 of these terms and conditions. Thereafter, if required, compliance shall be demonstrated by the following equation:

$S = (1 - DRE) \times [0.8(P) + A_d(FS) + B_d(BW)]$

Where

S = stack emissions, equation obtained from Engineering Guide #56;

DRE = destruction efficiency of the thermal incinerator, expressed as a decimal or percent which was determined during the most recent performance test which demonstrated compliance with the pound per hour emission limitation from the stack (a 95% destruction efficiency shall be used until testing has been completed);

0.8 = 20% of VOC's in heatset inks retained by substrate, 80% emitted per Engineering Guide #56;

P = (ink usage rate, lbs/month) x (ink VOC content, % by weight) x (1 month/number of days of operation);

A_d = mass fraction of fountain solution VOC routed to dryer and control device = 0.7 for alcohol substitutes;

FS = (fountain solution usage rate, lbs/month) x (fountain solution VOC content, % by wt.) x (1 month/number of days of operation);

B_d = mass fraction of cleanup solvent routed to dryer and control device = 0.4 for automatic blanket wash; and

BW = (blanket wash usage rate, lbs/month) x (blanket wash VOC content, % by wt.) x (1 month/number of days of operation).

b. Emission Limitation:

Volatile organic compound emissions shall not exceed 8.06 TPY from the stack associated with this emissions unit.

Applicable Compliance Method:

The annual stack emission limitation was established by multiplying the pound per hour OC stack emission limitation by the maximum operating schedule of 8760 hours per year and dividing by 2000 pounds per ton. Therefore, a demonstration of compliance with the hourly stack emission limitation shall also be a demonstration of compliance with the annual stack emission limitation.

c. Emission Limitation:

Fugitive volatile organic compound emissions shall not exceed 7.44 TPY.

Applicable Compliance Method:

Compliance shall be demonstrated by the record keeping specified in Section C.1. of these terms and conditions and the following equation:

$F = [A_f(FS) + B_f(BW) + AD] \times 1 \text{ ton}/2000 \text{ lbs}$

Where

F = annual fugitive emissions from emissions unit R008, equation obtained from Engineering Guide #56 with the addition of adhesive emissions which are all fugitive according to the facility's permit application;

A_f = mass fraction of fountain solution VOC routed to dryer and control device = 0.7 for alcohol substitutes;

FS = (fountain solution usage rate, lbs/yr) x (fountain solution VOC content, % by wt.);

B_f = mass fraction of cleanup solvent emitted as fugitive = 0.6 for automatic blanket wash;

BW = (blanket wash usage rate, lbs/yr) x (blanket wash VOC content, % by wt.); and

AD = (adhesive usage rate, lbs/yr) x (adhesive VOC content, % by wt.).

d. Emission Limitation:

Particulate emissions shall not exceed 2.4 TPY.

Applicable Compliance Method:

The annual particulate emission limitation was established by multiplying the pound per hour particulate emission limitation by the maximum operating schedule of 8760 hours per year and dividing by 2000 pounds per ton. Therefore, a demonstration of compliance with the hourly particulate emission limitation shall also be a demonstration of compliance with the annual particulate emission limitation.

e. Emission Limitation:

Visible particulate emissions from the stack associated with this emissions unit shall not exceed five percent opacity as a six-minute average.

Applicable Compliance Method:

If required, compliance shall be determined through visible emissions observations performed in accordance with 40 CFR Part 60, Appendix A, Method 9, and the procedures specified in OAC rule 3745-17-03(B)(1).

f. Emission Limitation:

Emissions of volatile organic compounds vented to the thermal oxidizer shall be reduced by at least ninety percent (95%), by weight.

Applicable Compliance Method:

Compliance shall be determined through stack testing specified in Section E.1 of these

terms and conditions.

g. Emission Limitation:

Particulate emissions shall not exceed 0.551 lb/hr.

Applicable Compliance Method:

If required, compliance shall be determined through stack testing in accordance with 40 CFR Part 60, Appendix A, Method 5. Per the Ohio Engineering Guide #56, no particulate testing should be necessary since this emissions unit is controlled by a thermal oxidizer.

h. Emission Limitation:

The emissions of each single hazardous air pollutant (HAP) from all emissions units at the facility shall not exceed 9.9 tons per year, based upon a rolling, 12-month summation.

Applicable Compliance Method:

Compliance shall be based upon the record keeping specified in Section C of these terms and conditions.

i. Emission Limitation:

The emissions of the combined HAPs from all emissions units at the facility shall not exceed 24.9 tons per year, based upon a rolling, 12-month summation.

Applicable Compliance Method:

Compliance shall be based upon the record keeping specified in Section C of these terms and conditions.

3. Formulation data or US EPA Method 24 shall be used to determine the VOC contents of all the inks, fountain solutions, blanket washes, and adhesives employed in this emissions unit.

F. Miscellaneous Requirements

None