

Facility ID: 1652050075 Issuance type: Draft State Permit To Operate

This version of facility specific terms and conditions was converted from a database format to an HTML file during an upgrade of the Ohio EPA, Division of Air Pollution Control's permitting software. Every attempt has been made to convert the terms and conditions to look and substantively conform to the permit issued or being drafted in STARS. However, the format of the terms may vary slightly from the original. In addition, although it is not expected, there is a slight possibility that a term and condition may have been inadvertently "left out" of this reproduction during the conversion process. Therefore, if this version is to be used as a starting point in drafting a new version of a permit, it is imperative that the entire set of terms and conditions be reviewed to ensure they substantively mimic the issued permit. The official version of any permit issued final by Ohio EPA is kept in the Agency's Legal section. The Legal section may be contacted at (614) 644-3037.

In addition to the terms and conditions, hyperlinks have been inserted into the document so you may more readily access the section of the document you wish to review.

Finally, the term language under "Part II" and before "A. Applicable Emissions Limitations..." has been added to aid in document conversion, and was not part of the original issued permit.

- [Go to Part II for Emissions Unit K001](#)
- [Go to Part II for Emissions Unit K002](#)
- [Go to Part II for Emissions Unit K003](#)
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Facility ID: 1652050075 Emissions Unit ID: K001 Issuance type: Draft State Permit To Operate

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Part II - Special Terms and Conditions

This permit document constitutes a permit-to-install issued in accordance with ORC 3704.03(F) and a permit-to-operate issued in accordance with ORC 3704.03(G).

1. For the purpose of a permit-to-install document, the emissions unit terms and conditions identified below are federally enforceable with the exception of those listed below which are enforceable under state law only.
 - (a) None.
2. For the purpose of a permit-to-operate document, the emissions unit terms and conditions identified below are enforceable under state law only with the exception of those listed below which are federally enforceable.
 - (a) None.

A. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(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 employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/Requirements</u>	<u>Applicable Emissions Limitations/Control Measures</u>
Heatset web offset printing line: maximum ink usage capacity @ 12.0 gals/hr, maximum ink density @ 8.2 lbs/gal, maximum ink organic material content @ 40% by weight; maximum fountain solution usage capacity @ 1.0 gal/hr, maximum fountain solution organic content @ 0.44 lb/gal; hot-air dryer emissions (70% of organic materials from fountain solution and 80% of organic materials from ink) vented to a direct flame incinerator (the other 30% of organic materials from fountain solution is fugitive and the other 20% of organic materials from ink is retained in the web), with a minimum destruction efficiency @ 90% and common to K001, K002, and K003	OAC rule 3745-31-05 (PTI 16-553)	All dryer emissions of organic materials from K001, K002, and K003 shall vent to a common direct flame (thermal) incinerator. The thermal incinerator must, at a minimum, oxidize or convert 90% or more of the carbon in the organic material being incinerated to carbon dioxide, by weight. See A.2.a below.
		Incinerator stack emissions shall not exceed 16.0 lbs/hr of organic materials (based on combined controlled potential emissions from K001, K002, and K003 with 90% incinerator destruction), excluding organic material emissions from cleanup.
		There shall be no visible emissions of particulates from any building ventilation (i.e., doors, windows, vents, etc.).
		Hand rags and any other articles used for cleanup shall be placed in a closed/sealed container, when not in use or for proper disposal, to reduce fugitive organic material emissions.
		Also, the operational restrictions in Section B. below satisfy OAC rule 3745-31-05 requirements.
	OAC rule 3745-21-07	The limit based on this rule is less stringent than the limits established pursuant to OAC rule 3745-31-05.
	OAC rule 3745-35-07	See A.2.b, A.2.c, A.2.d, and A.2.e below.
	OAC rule 3745-17-07	20% opacity from any stack, as a 6-minute average.
	OAC rule 3745-17-11	Incinerator stack emissions shall not exceed 2.25 lbs/hr of particulates.

2. Additional Terms and Conditions

- (a) During the last emission compliance testing performed on June 27, 1997, the thermal incinerator controlling the organic material emissions from K001 - K003 combined demonstrated an average destruction efficiency of 96.20%.

Also during the June 27, 1997 testing, the other thermal incinerator that controls the organic material emissions from K004 demonstrated an average destruction efficiency of 93.93%.

The permittee may use 93.93% destruction to determine facility-wide emissions of organic materials (resulting from heatset printing ink, fountain solution, and blanket wash) to simplify recordkeeping. If compliance is questionable, then the permittee reserves the right to use both tested incinerator destruction efficiencies.

Facility-wide emissions of organic materials and hazardous air pollutants (HAPs), per DAPC guidance, shall be calculated for all emissions units as follows:

- i. 20% (by weight) of the solvent in the heatset inks is retained in the web after the dryer. Assuming 100% capture, the remaining 80% (by weight) of the organic materials and HAPs in the ink is vented to the thermal incinerator.
- ii. 95% (by weight) of the solvent in the non-heatset inks is retained in the web, and the remaining 5% (by weight) of the solvent is fugitive emissions.
- iii. For heatset printing lines, 30% of the fountain solution emissions is fugitive, and the remaining 70% of the fountain solution emissions is vented to the thermal incinerator.
- iv. For automatic blanket wash systems, 60% of the solvent is fugitive, and 40% is vented to the thermal incinerator. For manual blanket wash systems (i.e., hand-washing with rags), 50% of the solvent is fugitive and 50% is retained in the properly disposed of rags.
- v. To simplify calculations, the permittee may assume that only automatic blanket wash is employed when calculating facility-wide emissions of organic materials and HAPs. If compliance is questionable, then the permittee reserves the right to use both automatic and manual blanket wash system figures in the calculations.

vi. A destruction efficiency of 93.93% shall be assumed for each of the two incinerators, per A.2.a above. The maximum annual facility-wide emissions of organic materials shall not exceed 99.0 TPY, based upon a rolling 12-month summation of the monthly emissions.

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

Month(s) Maximum Allowable Facility-Wide Cumulative Emissions of Organic Materials (Tons)

- 1 8.2
- 1-2 16.5
- 1-3 24.8
- 1-4 33.0
- 1-5 41.2
- 1-6 49.5
- 1-7 57.8
- 1-8 66.0
- 1-9 74.2
- 1-10 82.5
- 1-11 90.8
- 1-12 99.0

After the first 12 calendar months of operation following the issuance of this permit, compliance with the maximum annual facility-wide organic materials emission limitation shall be based upon a rolling, 12-month summation of the monthly emissions. The maximum annual facility-wide emissions of any individual HAP shall not exceed 9.9 TPY, based upon a rolling 12-month summation of the monthly emissions.

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

Month(s) Maximum Allowable Facility-Wide Cumulative Emissions of any Individual HAP (Tons)

- 1 0.8
- 1-2 1.6
- 1-3 2.5
- 1-4 3.3
- 1-5 4.1
- 1-6 5.0
- 1-7 5.8
- 1-8 6.6
- 1-9 7.4
- 1-10 8.2
- 1-11 9.1
- 1-12 9.9

After the first 12 calendar months of operation following the issuance of this permit, compliance with the maximum annual facility-wide individual HAP emission limitation shall be based upon a rolling, 12-month summation of the monthly emissions. The maximum annual facility-wide emissions of combined HAPs shall not exceed 24.9 TPY, based upon a rolling 12-month summation of the monthly emissions.

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

Month(s) Maximum Allowable Facility-Wide Cumulative Emissions of Combined HAPs (Tons)

- 1 2.1
- 1-2 4.2

1-3 6.2

1-4 8.3
 1-5 10.4
 1-6 12.4
 1-7 14.5
 1-8 16.6
 1-9 18.7
 1-10 20.8
 1-11 22.8
 1-12 24.9

After the first 12 calendar months of operation following the issuance of this permit, compliance with the maximum annual facility-wide combined HAPs emission limitation shall be based upon a rolling, 12-month summation of the monthly emissions.

B. Operational Restrictions

1. The permittee shall not employ any photochemically reactive material, as defined by OAC Rule 3745-21-01 (C)(5), in this emissions unit. This determination shall be made based on the actual formulation of the materials after any final in-plant reducing or thinning and prior to application of the materials.
2. The dryer(s) for this emissions unit shall only employ natural gas.
3. The permittee shall operate and maintain the thermal incinerator so that during any 3-hour block of time the average combustion temperature within the thermal incinerator is a minimum of 1350 degrees Fahrenheit.

C. Monitoring and/or Record Keeping Requirements

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

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

- a. All 3-hour blocks of time during which the average combustion temperature within the thermal incinerator, when the incinerator was in operation, was below 1350 degrees Fahrenheit.
 - b. A log of the downtime for the capture (collection) system, control device, and monitoring/recording equipment, when the associated emissions units were in operation.
2. The permittee shall collect and record monthly the following information for all emissions units (including de minimis emissions units) to determine facility-wide emissions of organic materials:
 - a. the company identification for each printing ink (heatset and non-heatset), fountain solution, and cleanup material (blanket-wash, thinning solvent, etc.) employed;
 - b. the number of gallons of each ink employed;
 - c. the number of gallons of each fountain solution employed;
 - d. the number of gallons of each cleanup material employed;
 - e. the organic material content of each ink employed, in pounds of organic material per gallon of ink;
 - f. the organic material content of each fountain solution employed, in pounds of organic material per gallon of fountain solution;
 - g. the organic material content of each cleanup material employed, in pounds of organic material per gallon of cleanup material;
 - h. the available organic material from all inks employed, in pounds, i.e., the sum of (b)x(e) for all inks;
 - i. the available organic material from all fountain solutions employed, in pounds, i.e., the sum of (c)x(f) for all fountain solutions;
 - j. the available organic material from all cleanup materials employed, in pounds, i.e., the sum of (d)x(g) for all cleanup materials; and
 - k. the total organic material emissions (stack and fugitive), in tons, i.e., $\frac{[(h) \times 0.8] + [(i) \times 0.7] + [(j) \times 0.4]}{2000} \times [1 - 0.9393] + [(i) \times 0.3] + [(j) \times 0.6]$.

Note: information for the equation in C.2.k is based on DAPC guidance as specified in A.2.b above.

3. The permittee shall collect and record monthly the following information for all emissions units (including de minimis emissions units) to determine facility-wide emissions of individual HAPs:
 - a. the company identification for each printing ink (heatset and non-heatset), fountain solution, and cleanup material (blanket-wash, thinning solvent, etc.) employed;
 - b. the number of gallons of each ink employed;
 - c. the number of gallons of each fountain solution employed;
 - d. the number of gallons of each cleanup material employed;
 - e. the individual HAP content for each individual HAP of each ink employed, in pounds of individual HAP per gallon of ink;
 - f. the individual HAP content for each individual HAP of each fountain solution employed, in pounds of individual HAP per gallon of fountain solution;
 - g. the individual HAP content for each individual HAP of each cleanup material employed, in pounds of individual HAP per gallon of cleanup material;
 - h. the available individual HAP for each individual HAP of each ink employed, in pounds, i.e., for each individual HAP, the sum of (b)x(e) for all inks;
 - i. the available individual HAP for each individual HAP of each fountain solution employed, in pounds, i.e., for each individual HAP, the sum of (c)x(f) for all fountain solutions;
 - j. the available individual HAP for each individual HAP of each cleanup material employed, in pounds, i.e., for each individual HAP, the sum of (d)x(g) for all cleanup materials;
 - k. the individual HAP emissions for each individual HAP from all inks, fountain solutions, and cleanup materials employed, in tons, i.e., for each individual HAP, $\frac{[(h) \times 0.8] + [(i) \times 0.7] + [(j) \times 0.4]}{2000} \times [1 - 0.9393] + [(i) \times 0.3] + [(j) \times 0.6]$.

- l. during the first 12 calendar months of operation following the issuance of this permit, the cumulative monthly individual HAP emissions for each individual HAP, in tons; and
 - m. after the first 12 calendar months of operation following the issuance of this permit, the summation of the previous 12 calendar months of monthly individual HAP emissions for each individual HAP, in tons per year.
4. The permittee shall collect and record monthly the following information for all emissions units (including de minimis emissions units) to determine facility-wide emissions of combined HAPs:
 - a. the company identification for each printing ink (heatset and non-heatset), fountain solution, and cleanup material (blanket-wash, thinning solvent, etc.) employed;
 - b. the number of gallons of each ink employed;
 - c. the number of gallons of each fountain solution employed;
 - d. the number of gallons of each cleanup material employed;
 - e. the combined HAPs content of each ink employed, in pounds of combined HAPs per gallon of ink;
 - f. the combined HAPs content of each fountain solution employed, in pounds of combined HAPs per gallon of fountain solution;
 - g. the combined HAPs content of each cleanup material employed, in pounds of combined HAPs per gallon of cleanup material;
 - h. the available combined HAPs of each ink employed, in pounds per month, i.e., the sum of (b)x(e) for all inks;
 - i. the available combined HAPs of each fountain solution employed, in pounds per month, i.e., the sum of (c)x(f) for all fountain solutions;
 - j. the available combined HAPs of each cleanup material employed, in pounds per month, i.e., the sum of (d)x(g) for all cleanup materials;
 - k. the combined HAPs emissions from all inks, fountain solutions, and cleanup materials employed, in tons, i.e., $\frac{[(h) \times 0.8] + [(i) \times 0.7] + [(j) \times 0.4] \times [1 - 0.9393] + [(i) \times 0.3] + [(j) \times 0.6]}{2000}$;
 - l. during the first 12 calendar months of operation following the issuance of this permit, the cumulative monthly combined HAPs emissions, in tons; and
 - m. after the first 12 calendar months of operation following the issuance of this permit, the summation of the previous 12 calendar months of monthly combined HAPs emissions, in tons per year.
 5. The permittee shall maintain monthly records as to whether or not each ink, fountain solution, and cleanup material employed is a photochemically reactive material.
 6. The permittee shall collect and record the following information for each change where the air toxic modeling was required pursuant to the Air Toxic Policy:
 - a. background data that describes the parameters changed (composition of materials, new pollutants emitted, change in stack/exhaust parameters, etc.); and
 - b. a copy of the resulting computer model runs that show the results of the application of the Air Toxic Policy for the change.
- D. Reporting Requirements**
1. The permittee shall submit deviation (excursion) reports that identify each calendar month, of the first 12 calendar months of operation after the issuance of this permit, during which the cumulative monthly facility-wide emissions of any individual HAP exceeded the allowable cumulative monthly facility-wide emission limit.
 2. The permittee shall submit deviation (excursion) reports that identify each rolling 12-month summation, after the first 12 calendar months of operation following the issuance of this permit, during which the 12-month summation of facility-wide emissions of any individual HAP exceeded the allowable facility-wide emission limit of 9.9 TPY.
 3. The permittee shall submit deviation (excursion) reports that identify each calendar month, of the first 12 calendar months of operation after the issuance of this permit, during which the cumulative monthly facility-wide emissions of combined HAPs exceeded the allowable cumulative monthly facility-wide emission limit.
 4. The permittee shall submit deviation (excursion) reports that identify each rolling 12-month summation, after the first 12 calendar months of operation following the issuance of this permit, during which the 12-month summation of facility-wide emissions of combined HAPs exceeded the allowable facility-wide emission limit of 24.9 TPY.
 5. The permittee shall submit deviation (excursion) reports that identify each calendar month, of the first 12 calendar months of operation after the issuance of this permit, during which the cumulative monthly facility-wide emissions of organic materials exceeded the allowable cumulative monthly facility-wide emission limit.
 6. The permittee shall submit deviation (excursion) reports that identify each rolling 12-month summation, after the first 12 calendar months of operation following the issuance of this permit, during which the 12-month summation of facility-wide emissions of organic materials exceeded the allowable facility-wide emission limit of 99.0 TPY.
 7. The permittee shall submit deviation (excursion) reports that identify all periods of time during which the combustion temperature within the thermal incinerator does not comply with the temperature limitation specified above.
 8. The permittee shall submit deviation (excursion) reports that identify the days during which any photochemically reactive materials were employed in this emissions unit. Each report shall identify the cause for the use of the photochemically reactive material(s) and the estimated total quantity of material(s) emitted during each such day, in pounds.
 9. Deviation (excursion) reports, as mentioned above, shall be submitted in accordance with the procedures required in Part I: General Terms and Condition #3.
 10. The permittee shall submit in writing annual reports to the Director (appropriate District Office or local air agency) which specify the total organic material emissions, in tons, the total individual HAP emissions, in tons, and the total combined HAP emissions, in tons, from this facility for the previous calendar year. Each report shall be submitted by January 31 of each year.
- E. Testing Requirements**

1. Compliance with the emission limitations in Section A of these terms and conditions shall be determined in accordance with the following methods:
Formulation data or USEPA Methods 24/24A shall be used to determine the organic material and HAP contents of the fountain solutions, cleanup materials, and inks.
Emission Limitation:

The thermal incinerator shall have a destruction efficiency of not less than 90%, by weight.

Applicable Compliance Method:

See testing requirements under E.2 for the method of determining compliance.
Emission Limitation:

Maximum allowable cumulative monthly facility-wide organic material emissions for the first 12 calendar months of operation following the issuance of this permit.

Applicable Compliance Method:

The permittee shall demonstrate compliance with the above limitation based upon the recordkeeping requirements of these T&C's.
Emission Limitation:

Maximum allowable annual facility-wide organic material emissions, after the first 12 calendar months of operation following the issuance of this permit, shall not exceed 99.0 TPY.

Applicable Compliance Method:

The permittee shall demonstrate compliance with the above limitation based upon the recordkeeping requirements of these T&C's.
Emission Limitation:

Maximum allowable cumulative monthly facility-wide individual HAP emissions for the first 12 calendar months of operation following the issuance of this permit.

Applicable Compliance Method:

The permittee shall demonstrate compliance with the above limitation based upon the recordkeeping requirements of these T&C's.
Emission Limitation:

Maximum allowable annual facility-wide individual HAP emissions, after the first 12 calendar months of operation following the issuance of this permit, shall not exceed 9.9 TPY.

Applicable Compliance Method:

The permittee shall demonstrate compliance with the above limitation based upon the recordkeeping requirements of these T&C's.
Emission Limitation:

Maximum allowable cumulative monthly facility-wide combined HAPs emissions for the first 12 calendar months of operation following the issuance of this permit.

Applicable Compliance Method:

The permittee shall demonstrate compliance with the above limitation based upon the recordkeeping requirements of these T&C's.
Emission Limitation:

Maximum allowable annual facility-wide combined HAPs emissions, after the first 12 calendar months of operation following the issuance of this permit, shall not exceed 24.9 TPY.

Applicable Compliance Method:

The permittee shall demonstrate compliance with the above limitation based upon the recordkeeping requirements of these T&C's.
Emission Limitation:

Visible particulate emissions from the incinerator stack shall not exceed 20% opacity, as a six-minute average.

Applicable Compliance Method:

If required, compliance shall be determined by visible emission evaluations performed in accordance with OAC rule 3745-17-03(B)(1) using the methods and procedures specified in USEPA Method 9, 40 CFR Part 60, Appendix A.
Emission Limitation:

No visible particulate emissions from building ventilation

Applicable Compliance Method:

If required, compliance shall be determined by visible emission evaluations performed in accordance with OAC rule 3745-17-03(B)(4) using the methods and procedures specified in USEPA Method 22, 40 CFR Part 60, Appendix A.
Emission Limit:

2.25 lbs/hr particulates

Applicable Compliance Method:

If required, compliance with this mass emission limitation shall be based on stack testing per OAC rule 3745-17-03(B).

2. The permittee shall conduct, or have conducted, emission testing for K001, K002, and K003 operating simultaneously in accordance with the following requirements:
 - The emissions testing shall be conducted within 6 months prior to permit renewal.
 - The emissions testing shall be conducted to demonstrate compliance with the destruction efficiency limitation for organic materials.
 - The following test method shall be employed to demonstrate compliance with the destruction efficiency limitation for organic material: Method 25 or 25A of 40 CFR Part 60, Appendix A.
 - The testing shall be conducted while the emissions units are operating at or near their maximum capacities, unless otherwise specified or approved by the appropriate Ohio EPA District Office or local air agency.
 - 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. 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.
 - A capture efficiency of 100% of organic material emissions shall be verified, during emission compliance testing of the emissions units/control system, via the appropriate use of smoke tubes, magnehelic devices, etc., by demonstrating that sufficient continuous negative pressure is maintained within the dryers and the ductwork from the dryers to the thermal incinerator to prevent fugitive emissions.

In the final compliance test report prepared by the testing company, a description of the method used to determine 100% capture efficiency and the results of the determination shall be summarized.

Combustion temperatures within the thermal incinerator shall be monitored and recorded during emission compliance testing of the emissions units/control system. The combustion temperature within the thermal incinerator, along with the destruction efficiency of the control device, mass emission rates of organic materials, and other relevant test data, for each test run completed, shall be published in the final test report.

Not later than 30 days prior to the proposed test date(s), this facility shall submit an "Intent to Test" notification. 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 District Office's or local air agency's refusal to accept the results of the emission tests.

Personnel from the appropriate Ohio EPA District Office or local air agency shall be permitted to witness the tests, examine the testing equipment, and acquire data and information regarding the emissions unit operating parameters.

A comprehensive written report on the results of the emissions tests shall be submitted to the appropriate Ohio EPA District Office or local air agency within 30 days following completion of the test(s).

F. Miscellaneous Requirements

1. This permit allows the use of materials (typically coatings and cleanup materials) specified by the permittee in the permit to install application for this emissions unit. To fulfill the best available technology requirements of Ohio Administrative Code (OAC) rule 3745-31-05 and to ensure compliance with OAC rule 3745-15-07 (Air Pollution Nuisances Prohibited), pollutant ground-level concentrations were established using the Ohio EPA's "Air Toxic Policy" and are based on both the materials used and the design parameters of the emissions unit's exhaust system, as specified in the application. The Ohio EPA's "Air Toxic Policy" was applied for ethylene glycol using the SCREEN 3.0 model and comparing the predicted 1-hour maximum ground-level concentration to the Maximum Acceptable Ground-Level Concentration (MAGLC). The following summarizes the results of the modeling for ethylene glycol:

Pollutant: ethylene glycol (CAS 107-21-1)

TWA (mg/m3): 127

Maximum Average Hourly Emission Rate (lbs/hr): 18.1

Predicted 1-Hour Maximum Ground-Level Concentration at 27 m (mg/m3): 1.3

Maximum Acceptable Ground-Level Concentration (MAGLC) (mg/m3): 3.0

2. OAC Chapter 3745-31 requires permittees to apply for and obtain a new or modified permit to install prior to making a "modification" as defined by the OAC rule 3745-31-01. The permittee is hereby advised that the following changes to the process may be determined to be a "modification":
 - a. Changes in the composition of the materials used (typically for coatings or cleanup materials), or the use of new materials, that would result in the emission of a compound with a lower Threshold Limit Value (TLV), as indicated in the most recent version of the handbook entitled "American Conference of Governmental Industrial Hygienists (ACGIH)," than the TLV value specified in the above table;
 - b. Changes to the emissions unit or its exhaust parameters (e.g., increased emission rate [not including an increase in an "allowable" emission limitation specified in the terms and conditions of this permit], reduced exhaust gas flow rate, and decreased stack height);
 - c. Changes in the composition of the materials used, or use of new materials, that would result in the emission of an air contaminant not previously permitted; and
 - d. Changes in the composition of the materials, or use of new materials, that would result in an increase in emissions of any pollutant that has a listed TLV.
3. The Ohio EPA will not consider any of the above-mentioned as a "modification" requiring a permit to install, if the following conditions are met:
 - a. The change is not otherwise considered a "modification" under OAC Chapter 3745-31;
 - b. The permittee can continue to comply with the allowable emission limitations specified in its permit to install;

and

c. Prior to the change, the applicant conducts an evaluation pursuant to the Air Toxic Policy, determines that the changed emissions unit still satisfies the Air Toxic Policy, and the permittee maintains documentation that identifies the change and the results of the application of the Air Toxic Policy for the change.

For any change to the emissions unit or its method of operation that either would require an increase in the emission limitation(s) established by this permit or would otherwise be considered a "modification" as defined in OAC rule 3745-31-01, the permittee shall obtain a final permit to install prior to the change.

4. All of the terms and conditions of this permit are federally enforceable pursuant to OAC rule 3745-35-07.

THIS IS NOT AN OFFICIAL VERSION OF THE PERMIT. SEE PAGE 1 FOR ADDITIONAL INFORMATION

Facility ID: 1652050075 Emissions Unit ID: K002 Issuance type: Draft State Permit To Operate

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Part II - Special Terms and Conditions

This permit document constitutes a permit-to-install issued in accordance with ORC 3704.03(F) and a permit-to-operate issued in accordance with ORC 3704.03(G).

1. For the purpose of a permit-to-install document, the emissions unit terms and conditions identified below are federally enforceable with the exception of those listed below which are enforceable under state law only.
 - (a) None.
2. For the purpose of a permit-to-operate document, the emissions unit terms and conditions identified below are enforceable under state law only with the exception of those listed below which are federally enforceable.
 - (a) None.

A. Applicable Emissions Limitations and/or Control Requirements

1. The specific operation(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 employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/Requirements</u>	<u>Applicable Emissions Limitations/Control Measures</u>
Heatset web offset printing line: maximum ink usage capacity @ 36.5 gals/hr, maximum ink density @ 8.2 lbs/gal, maximum ink organic material content @ 40% by weight; maximum fountain solution usage capacity @ 1.0 gal/hr, maximum fountain solution organic content @ 0.44 lb/gal; hot-air dryer emissions (70% of organic materials from fountain solution and 80% of organic materials from ink) vented to a direct flame incinerator (the other 30% of organic materials from fountain solution is fugitive and the other 20% of organic materials from ink is retained in the web), with a minimum destruction efficiency @ 90% and common to K001, K002, and K003	OAC rule 3745-31-05 (PTI 16-892)	All dryer emissions of organic materials from K001, K002, and K003 shall vent to a common direct flame (thermal) incinerator. The thermal incinerator must, at a minimum, oxidize or convert 90% or more of the carbon in the organic material being incinerated to carbon dioxide, by weight. See A.2.a below. Incinerator stack emissions shall not exceed 16.0 lbs/hr of organic materials (based on combined controlled potential emissions from K001, K002, and K003 with 90% incinerator destruction), excluding organic material emissions from cleanup. There shall be no visible emissions of particulates from any building ventilation (i.e., doors, windows, vents, etc.). Hand rags and any other articles used for cleanup shall be placed in a closed/sealed container, when not in use or for proper disposal, to reduce fugitive organic material emissions.
	OAC rule 3745-21-07	Also, the operational restrictions in Section B. below satisfy OAC rule 3745-31-05 requirements.
	OAC rule 3745-35-07	The limit based on this rule is less stringent than the limits established pursuant to OAC rule 3745-31-05.
	OAC rule 3745-17-07	See A.2.b, A.2.c, A.2.d, and A.2.e below.
	OAC rule 3745-17-11	20% opacity from any stack, as a 6-minute average. Incinerator stack emissions shall not exceed 2.25 lbs/hr of particulates.

2. Additional Terms and Conditions

- (a) During the last emission compliance testing performed on June 27, 1997, the thermal incinerator controlling the organic material emissions from K001 - K003 combined demonstrated an average destruction efficiency of 96.20%.

Also during the June 27, 1997 testing, the other thermal incinerator that controls the organic material emissions from K004 demonstrated an average destruction efficiency of 93.93%.

The permittee may use 93.93% destruction to determine facility-wide emissions of organic materials (resulting from heatset printing ink, fountain solution, and blanket wash) to simplify recordkeeping. If compliance is questionable, then the permittee reserves the right to use both tested incinerator destruction efficiencies.

Facility-wide emissions of organic materials and hazardous air pollutants (HAPs), per DAPC guidance, shall be calculated for all emissions units as follows:

- i. 20% (by weight) of the solvent in the heatset inks is retained in the web after the dryer. Assuming 100% capture, the remaining 80% (by weight) of the organic materials and HAPs in the ink is vented to the thermal incinerator.
- ii. 95% (by weight) of the solvent in the non-heatset inks is retained in the web, and the remaining 5% (by weight) of the solvent is fugitive emissions.
- iii. For heatset printing lines, 30% of the fountain solution emissions is fugitive, and the remaining 70% of the fountain solution emissions is vented to the thermal incinerator.
- iv. For automatic blanket wash systems, 60% of the solvent is fugitive, and 40% is vented to the thermal incinerator. For manual blanket wash systems (i.e., hand-washing with rags), 50% of the solvent is fugitive and 50% is retained in the properly disposed of rags.
- v. To simplify calculations, the permittee may assume that only automatic blanket wash is employed when calculating facility-wide emissions of organic materials and HAPs. If compliance is questionable, then the permittee reserves the right to use both automatic and manual blanket wash system figures in the calculations.
- vi. A destruction efficiency of 93.93% shall be assumed for each of the two incinerators, per A.2.a above.

The maximum annual facility-wide emissions of organic materials shall not exceed 99.0 TPY, based upon a rolling 12-month summation of the monthly emissions.

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

Month(s) Maximum Allowable Facility-Wide Cumulative Emissions of Organic Materials (Tons)

1 8.2
 1-2 16.5
 1-3 24.8
 1-4 33.0
 1-5 41.2
 1-6 49.5
 1-7 57.8
 1-8 66.0
 1-9 74.2
 1-10 82.5
 1-11 90.8
 1-12 99.0

After the first 12 calendar months of operation following the issuance of this permit, compliance with the maximum annual facility-wide organic materials emission limitation shall be based upon a rolling, 12-month summation of the monthly emissions.

The maximum annual facility-wide emissions of any individual HAP shall not exceed 9.9 TPY, based upon a rolling 12-month summation of the monthly emissions.

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

Month(s) Maximum Allowable Facility-Wide Cumulative Emissions of any Individual HAP (Tons)

1 0.8
 1-2 1.6
 1-3 2.5
 1-4 3.3
 1-5 4.1
 1-6 5.0
 1-7 5.8
 1-8 6.6
 1-9 7.4
 1-10 8.2
 1-11 9.1
 1-12 9.9

After the first 12 calendar months of operation following the issuance of this permit, compliance with the maximum annual facility-wide individual HAP emission limitation shall be based upon a rolling, 12-month summation of the monthly emissions.

The maximum annual facility-wide emissions of combined HAPs shall not exceed 24.9 TPY, based upon a rolling 12-month summation of the monthly emissions.

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

Month(s) Maximum Allowable Facility-Wide Cumulative Emissions of Combined HAPs (Tons)

1-2 1
 1-2 4.2
 1-3 6.2
 1-4 8.3
 1-5 10.4
 1-6 12.4
 1-7 14.5
 1-8 16.6
 1-9 18.7
 1-10 20.8
 1-11 22.8
 1-12 24.9

After the first 12 calendar months of operation following the issuance of this permit, compliance with the maximum annual facility-wide combined HAPs emission limitation shall be based upon a rolling, 12-month summation of the monthly emissions.

B. Operational Restrictions

1. The permittee shall not employ any photochemically reactive material, as defined by OAC Rule 3745-21-01 (C)(5), in this emissions unit. This determination shall be made based on the actual formulation of the materials after any final in-plant reducing or thinning and prior to application of the materials.
2. The dryer(s) for this emissions unit shall only employ natural gas.
3. The permittee shall operate and maintain the thermal incinerator so that during any 3-hour block of time the average combustion temperature within the thermal incinerator is a minimum of 1350 degrees Fahrenheit.

C. Monitoring and/or Record Keeping Requirements

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

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

- a. All 3-hour blocks of time during which the average combustion temperature within the thermal incinerator, when the incinerator was in operation, was below 1350 degrees Fahrenheit.
 - b. A log of the downtime for the capture (collection) system, control device, and monitoring/recording equipment, when the associated emissions units were in operation.
2. The permittee shall collect and record monthly the following information for all emissions units (including de minimis emissions units) to determine facility-wide emissions of organic materials:
 - a. the company identification for each printing ink (heatset and non-heatset), fountain solution, and cleanup material (blanket-wash, thinning solvent, etc.) employed;
 - b. the number of gallons of each ink employed;
 - c. the number of gallons of each fountain solution employed;
 - d. the number of gallons of each cleanup material employed;
 - e. the organic material content of each ink employed, in pounds of organic material per gallon of ink;
 - f. the organic material content of each fountain solution employed, in pounds of organic material per gallon of fountain solution;
 - g. the organic material content of each cleanup material employed, in pounds of organic material per gallon of cleanup material;
 - h. the available organic material from all inks employed, in pounds, i.e., the sum of (b)x(e) for all inks;
 - i. the available organic material from all fountain solutions employed, in pounds, i.e., the sum of (c)x(f) for all fountain solutions;
 - j. the available organic material from all cleanup materials employed, in pounds, i.e., the sum of (d)x(g) for all cleanup materials; and
 - k. the total organic material emissions (stack and fugitive), in tons, i.e., $\frac{[(h) \times 0.8] + [(i) \times 0.7] + [(j) \times 0.4] \times [1 - 0.9393] + [(i) \times 0.3] + [(j) \times 0.6]}{2000}$.

Note: information for the equation in C.2.k is based on DAPC guidance as specified in A.2.b above.

3. The permittee shall collect and record monthly the following information for all emissions units (including de minimis emissions units) to determine facility-wide emissions of individual HAPs:
 - a. the company identification for each printing ink (heatset and non-heatset), fountain solution, and cleanup material (blanket-wash, thinning solvent, etc.) employed;
 - b. the number of gallons of each ink employed;
 - c. the number of gallons of each fountain solution employed;
 - d. the number of gallons of each cleanup material employed;
 - e. the individual HAP content for each individual HAP of each ink employed, in pounds of individual HAP per gallon of ink;
 - f. the individual HAP content for each individual HAP of each fountain solution employed, in pounds of individual HAP per gallon of fountain solution;
 - g. the individual HAP content for each individual HAP of each cleanup material employed, in pounds of individual HAP per gallon of cleanup material;
 - h. the available individual HAP for each individual HAP of each ink employed, in pounds, i.e., for each individual HAP, the sum of (b)x(e) for all inks;
 - i. the available individual HAP for each individual HAP of each fountain solution employed, in pounds, i.e., for each individual HAP, the sum of (c)x(f) for all fountain solutions;
 - j. the available individual HAP for each individual HAP of each cleanup material employed, in pounds, i.e., for

each individual HAP, the sum of (d)x(g) for all cleanup materials;

- k. the individual HAP emissions for each individual HAP from all inks, fountain solutions, and cleanup materials employed, in tons, i.e., for each individual HAP, $(((h) \times 0.8) + ((i) \times 0.7) + ((j) \times 0.4)) \times [1 - 0.9393] + ((i) \times 0.3) + ((j) \times 0.6) / 2000$;
 - l. during the first 12 calendar months of operation following the issuance of this permit, the cumulative monthly individual HAP emissions for each individual HAP, in tons; and
 - m. after the first 12 calendar months of operation following the issuance of this permit, the summation of the previous 12 calendar months of monthly individual HAP emissions for each individual HAP, in tons per year.
4. The permittee shall collect and record monthly the following information for all emissions units (including de minimis emissions units) to determine facility-wide emissions of combined HAPs:
 - a. the company identification for each printing ink (heatset and non-heatset), fountain solution, and cleanup material (blanket-wash, thinning solvent, etc.) employed;
 - b. the number of gallons of each ink employed;
 - c. the number of gallons of each fountain solution employed;
 - d. the number of gallons of each cleanup material employed;
 - e. the combined HAPs content of each ink employed, in pounds of combined HAPs per gallon of ink;
 - f. the combined HAPs content of each fountain solution employed, in pounds of combined HAPs per gallon of fountain solution;
 - g. the combined HAPs content of each cleanup material employed, in pounds of combined HAPs per gallon of cleanup material;
 - h. the available combined HAPs of each ink employed, in pounds per month, i.e., the sum of (b)x(e) for all inks;
 - i. the available combined HAPs of each fountain solution employed, in pounds per month, i.e., the sum of (c)x(f) for all fountain solutions;
 - j. the available combined HAPs of each cleanup material employed, in pounds per month, i.e., the sum of (d)x(g) for all cleanup materials;
 - k. the combined HAPs emissions from all inks, fountain solutions, and cleanup materials employed, in tons, i.e., $(((h) \times 0.8) + ((i) \times 0.7) + ((j) \times 0.4)) \times [1 - 0.9393] + ((i) \times 0.3) + ((j) \times 0.6) / 2000$;
 - l. during the first 12 calendar months of operation following the issuance of this permit, the cumulative monthly combined HAPs emissions, in tons; and
 - m. after the first 12 calendar months of operation following the issuance of this permit, the summation of the previous 12 calendar months of monthly combined HAPs emissions, in tons per year.
 5. The permittee shall maintain monthly records as to whether or not each ink, fountain solution, and cleanup material employed is a photochemically reactive material.
 6. The permittee shall collect and record the following information for each change where the air toxic modeling was required pursuant to the Air Toxic Policy:
 - a. background data that describes the parameters changed (composition of materials, new pollutants emitted, change in stack/exhaust parameters, etc.); and
 - b. a copy of the resulting computer model runs that show the results of the application of the Air Toxic Policy for the change.

D. Reporting Requirements

1. The permittee shall submit deviation (excursion) reports that identify each calendar month, of the first 12 calendar months of operation after the issuance of this permit, during which the cumulative monthly facility-wide emissions of any individual HAP exceeded the allowable cumulative monthly facility-wide emission limit.
2. The permittee shall submit deviation (excursion) reports that identify each rolling 12-month summation, after the first 12 calendar months of operation following the issuance of this permit, during which the 12-month summation of facility-wide emissions of any individual HAP exceeded the allowable facility-wide emission limit of 9.9 TPY.
3. The permittee shall submit deviation (excursion) reports that identify each calendar month, of the first 12 calendar months of operation after the issuance of this permit, during which the cumulative monthly facility-wide emissions of combined HAPs exceeded the allowable cumulative monthly facility-wide emission limit.
4. The permittee shall submit deviation (excursion) reports that identify each rolling 12-month summation, after the first 12 calendar months of operation following the issuance of this permit, during which the 12-month summation of facility-wide emissions of combined HAPs exceeded the allowable facility-wide emission limit of 24.9 TPY.
5. The permittee shall submit deviation (excursion) reports that identify each calendar month, of the first 12 calendar months of operation after the issuance of this permit, during which the cumulative monthly facility-wide emissions of organic materials exceeded the allowable cumulative monthly facility-wide emission limit.
6. The permittee shall submit deviation (excursion) reports that identify each rolling 12-month summation, after the first 12 calendar months of operation following the issuance of this permit, during which the 12-month summation of facility-wide emissions of organic materials exceeded the allowable facility-wide emission limit of 99.0 TPY.
7. The permittee shall submit deviation (excursion) reports that identify all periods of time during which the combustion temperature within the thermal incinerator does not comply with the temperature limitation specified above.
8. The permittee shall submit deviation (excursion) reports that identify the days during which any photochemically reactive materials were employed in this emissions unit. Each report shall identify the cause for the use of the photochemically reactive material(s) and the estimated total quantity of material(s) emitted during each such day, in pounds.
9. Deviation (excursion) reports, as mentioned above, shall be submitted in accordance with the procedures required in Part I: General Terms and Condition #3.
10. The permittee shall submit in writing annual reports to the Director (appropriate District Office or local air agency) which specify the total organic material emissions, in tons, the total individual HAP emissions, in tons, and the

total combined HAP emissions, in tons, from this facility for the previous calendar year. Each report shall be submitted by January 31 of each year.

E. Testing Requirements

1. Compliance with the emission limitations in Section A of these terms and conditions shall be determined in accordance with the following methods:
Formulation data or USEPA Methods 24/24A shall be used to determine the organic material and HAP contents of the fountain solutions, cleanup materials, and inks.
Emission Limitation:

The thermal incinerator shall have a destruction efficiency of not less than 90%, by weight.

Applicable Compliance Method:

See testing requirements under E.2 for the method of determining compliance.
Emission Limitation:

Maximum allowable cumulative monthly facility-wide organic material emissions for the first 12 calendar months of operation following the issuance of this permit.

Applicable Compliance Method:

The permittee shall demonstrate compliance with the above limitation based upon the recordkeeping requirements of these T&C's.
Emission Limitation:

Maximum allowable annual facility-wide organic material emissions, after the first 12 calendar months of operation following the issuance of this permit, shall not exceed 99.0 TPY.

Applicable Compliance Method:

The permittee shall demonstrate compliance with the above limitation based upon the recordkeeping requirements of these T&C's.
Emission Limitation:

Maximum allowable cumulative monthly facility-wide individual HAP emissions for the first 12 calendar months of operation following the issuance of this permit.

Applicable Compliance Method:

The permittee shall demonstrate compliance with the above limitation based upon the recordkeeping requirements of these T&C's.
Emission Limitation:

Maximum allowable annual facility-wide individual HAP emissions, after the first 12 calendar months of operation following the issuance of this permit, shall not exceed 9.9 TPY.

Applicable Compliance Method:

The permittee shall demonstrate compliance with the above limitation based upon the recordkeeping requirements of these T&C's.
Emission Limitation:

Maximum allowable cumulative monthly facility-wide combined HAPs emissions for the first 12 calendar months of operation following the issuance of this permit.

Applicable Compliance Method:

The permittee shall demonstrate compliance with the above limitation based upon the recordkeeping requirements of these T&C's.
Emission Limitation:

Maximum allowable annual facility-wide combined HAPs emissions, after the first 12 calendar months of operation following the issuance of this permit, shall not exceed 24.9 TPY.

Applicable Compliance Method:

The permittee shall demonstrate compliance with the above limitation based upon the recordkeeping requirements of these T&C's.
Emission Limitation:

Visible particulate emissions from the incinerator stack shall not exceed 20% opacity, as a six-minute average.

Applicable Compliance Method:

If required, compliance shall be determined by visible emission evaluations performed in accordance with OAC rule 3745-17-03(B)(1) using the methods and procedures specified in USEPA Method 9, 40 CFR Part 60, Appendix A.
Emission Limitation:

No visible particulate emissions from building ventilation

Applicable Compliance Method:

If required, compliance shall be determined by visible emission evaluations performed in accordance with OAC rule 3745-17-03(B)(4) using the methods and procedures specified in USEPA Method 22, 40 CFR Part 60,

Appendix A.

Emission Limit:

2.25 lbs/hr particulates

Applicable Compliance Method:

If required, compliance with this mass emission limitation shall be based on stack testing per OAC rule 3745-17-03(B).

2. The permittee shall conduct, or have conducted, emission testing for K001, K002, and K003 operating simultaneously in accordance with the following requirements:

The emissions testing shall be conducted within 6 months prior to permit renewal.

The emissions testing shall be conducted to demonstrate compliance with the destruction efficiency limitation for organic materials.

The following test method shall be employed to demonstrate compliance with the destruction efficiency limitation for organic material: Method 25 or 25A of 40 CFR Part 60, Appendix A.

The testing shall be conducted while the emissions units are operating at or near their maximum capacities, unless otherwise specified or approved by the appropriate Ohio EPA District Office or local air agency.

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. 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.

A capture efficiency of 100% of organic material emissions shall be verified, during emission compliance testing of the emissions units/control system, via the appropriate use of smoke tubes, magnehelic devices, etc., by demonstrating that sufficient continuous negative pressure is maintained within the dryers and the ductwork from the dryers to the thermal incinerator to prevent fugitive emissions.

In the final compliance test report prepared by the testing company, a description of the method used to determine 100% capture efficiency and the results of the determination shall be summarized.

Combustion temperatures within the thermal incinerator shall be monitored and recorded during emission compliance testing of the emissions units/control system. The combustion temperature within the thermal incinerator, along with the destruction efficiency of the control device, mass emission rates of organic materials, and other relevant test data, for each test run completed, shall be published in the final test report.

Not later than 30 days prior to the proposed test date(s), this facility shall submit an "Intent to Test" notification.

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 District Office's or local air agency's refusal to accept the results of the emission tests.

Personnel from the appropriate Ohio EPA District Office or local air agency shall be permitted to witness the tests, examine the testing equipment, and acquire data and information regarding the emissions unit operating parameters.

A comprehensive written report on the results of the emissions tests shall be submitted to the appropriate Ohio EPA District Office or local air agency within 30 days following completion of the test(s).

F. **Miscellaneous Requirements**

1. This permit allows the use of materials (typically coatings and cleanup materials) specified by the permittee in the permit to install application for this emissions unit. To fulfill the best available technology requirements of Ohio Administrative Code (OAC) rule 3745-31-05 and to ensure compliance with OAC rule 3745-15-07 (Air Pollution Nuisances Prohibited), pollutant ground-level concentrations were established using the Ohio EPA's "Air Toxic Policy" and are based on both the materials used and the design parameters of the emissions unit's exhaust system, as specified in the application. The Ohio EPA's "Air Toxic Policy" was applied for ethylene glycol using the SCREEN 3.0 model and comparing the predicted 1-hour maximum ground-level concentration to the Maximum Acceptable Ground-Level Concentration (MAGLC). The following summarizes the results of the modeling for ethylene glycol:

Pollutant: ethylene glycol (CAS 107-21-1)

TWA (mg/m3): 127

Maximum Average Hourly Emission Rate (lbs/hr): 18.1

Predicted 1-Hour Maximum Ground-Level Concentration at 27 m (mg/m3): 1.3

Maximum Acceptable Ground-Level Concentration (MAGLC) (mg/m3): 3.0

2. OAC Chapter 3745-31 requires permittees to apply for and obtain a new or modified permit to install prior to making a "modification" as defined by the OAC rule 3745-31-01. The permittee is hereby advised that the following changes to the process may be determined to be a "modification":
- Changes in the composition of the materials used (typically for coatings or cleanup materials), or the use of new materials, that would result in the emission of a compound with a lower Threshold Limit Value (TLV), as indicated in the most recent version of the handbook entitled "American Conference of Governmental Industrial Hygienists (ACGIH)," than the TLV value specified in the above table;
 - Changes to the emissions unit or its exhaust parameters (e.g., increased emission rate [not including an increase in an "allowable" emission limitation specified in the terms and conditions of this permit], reduced exhaust gas flow rate, and decreased stack height);
 - Changes in the composition of the materials used, or use of new materials, that would result in the emission of an air contaminant not previously permitted; and
 - Changes in the composition of the materials, or use of new materials, that would result in an increase in emissions of any pollutant that has a listed TLV.
3. The Ohio EPA will not consider any of the above-mentioned as a "modification" requiring a permit to install, if the following conditions are met:

- a. The change is not otherwise considered a "modification" under OAC Chapter 3745-31;
- b. The permittee can continue to comply with the allowable emission limitations specified in its permit to install; and
- c. Prior to the change, the applicant conducts an evaluation pursuant to the Air Toxic Policy, determines that the changed emissions unit still satisfies the Air Toxic Policy, and the permittee maintains documentation that identifies the change and the results of the application of the Air Toxic Policy for the change.

For any change to the emissions unit or its method of operation that either would require an increase in the emission limitation(s) established by this permit or would otherwise be considered a "modification" as defined in OAC rule 3745-31-01, the permittee shall obtain a final permit to install prior to the change.

- 4. All of the terms and conditions of this permit are federally enforceable pursuant to OAC rule 3745-35-07.

THIS IS NOT AN OFFICIAL VERSION OF THE PERMIT. SEE PAGE 1 FOR ADDITIONAL INFORMATION

Facility ID: 1652050075 Emissions Unit ID: K003 Issuance type: Draft State Permit To Operate

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Part II - Special Terms and Conditions

This permit document constitutes a permit-to-install issued in accordance with ORC 3704.03(F) and a permit-to-operate issued in accordance with ORC 3704.03(G).

- 1. For the purpose of a permit-to-install document, the emissions unit terms and conditions identified below are federally enforceable with the exception of those listed below which are enforceable under state law only.
 - (a) None.
- 2. For the purpose of a permit-to-operate document, the emissions unit terms and conditions identified below are enforceable under state law only with the exception of those listed below which are federally enforceable.
 - (a) None.

A. Applicable Emissions Limitations and/or Control Requirements

- 1. The specific operation(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 employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/Requirements</u>	<u>Applicable Emissions Limitations/Control Measures</u>
Heatset web offset printing line: maximum ink usage capacity @ 12.0 gals/hr, maximum ink density @ 8.2 lbs/gal, maximum ink organic material content @ 40% by weight; maximum fountain solution usage capacity @ 1.0 gal/hr, maximum fountain solution organic content @ 0.44 lb/gal; hot-air dryer emissions (70% of organic materials from fountain solution and 80% of organic materials from ink) vented to a direct flame incinerator (the other 30% of organic materials from fountain solution is fugitive and the other 20% of organic materials from ink is retained in the web), with a minimum destruction efficiency @ 90% and common to K001, K002, and K003	OAC rule 3745-31-05 (PTI 16-1367)	All dryer emissions of organic materials from K001, K002, and K003 shall vent to a common direct flame (thermal) incinerator. The thermal incinerator must, at a minimum, oxidize or convert 90% or more of the carbon in the organic material being incinerated to carbon dioxide, by weight. See A.2.a below. Incinerator stack emissions shall not exceed 16.0 lbs/hr of organic materials (based on combined controlled potential emissions from K001, K002, and K003 with 90% incinerator destruction), excluding organic material emissions from cleanup. There shall be no visible emissions of particulates from any building ventilation (i.e., doors, windows, vents, etc.). Hand rags and any other articles used for cleanup shall be placed in a closed/sealed container, when not in use or for proper disposal, to reduce fugitive organic material emissions.
	OAC rule 3745-21-07	Also, the operational restrictions in Section B. below satisfy OAC rule 3745-31-05 requirements.
	OAC rule 3745-35-07	The limit based on this rule is less stringent than the limits established pursuant to OAC rule 3745-31-05. See A.2.b, A.2.c, A.2.d, and A.2.e below.
	OAC rule 3745-17-07	20% opacity from any stack, as a 6-minute average.
	OAC rule 3745-17-11	Incinerator stack emissions shall not exceed 2.25 lbs/hr of particulates.

- 2. **Additional Terms and Conditions**

- (a) During the last emission compliance testing performed on June 27, 1997, the thermal incinerator controlling the organic material emissions from K001 - K003 combined demonstrated an average destruction efficiency of 96.20%.

Also during the June 27, 1997 testing, the other thermal incinerator that controls the organic material emissions from K004 demonstrated an average destruction efficiency of 93.93%.

The permittee may use 93.93% destruction to determine facility-wide emissions of organic materials (resulting from heatset printing ink, fountain solution, and blanket wash) to simplify recordkeeping. If compliance is questionable, then the permittee reserves the right to use both tested incinerator destruction efficiencies.

Facility-wide emissions of organic materials and hazardous air pollutants (HAPs), per DAPC guidance, shall be calculated for all emissions units as follows:

- i. 20% (by weight) of the solvent in the heatset inks is retained in the web after the dryer. Assuming 100% capture, the remaining 80% (by weight) of the organic materials and HAPs in the ink is vented to the thermal incinerator.
- ii. 95% (by weight) of the solvent in the non-heatset inks is retained in the web, and the remaining 5% (by weight) of the solvent is fugitive emissions.
- iii. For heatset printing lines, 30% of the fountain solution emissions is fugitive, and the remaining 70% of the fountain solution emissions is vented to the thermal incinerator.
- iv. For automatic blanket wash systems, 60% of the solvent is fugitive, and 40% is vented to the thermal incinerator. For manual blanket wash systems (i.e., hand-washing with rags), 50% of the solvent is fugitive and 50% is retained in the properly disposed of rags.
- v. To simplify calculations, the permittee may assume that only automatic blanket wash is employed when calculating facility-wide emissions of organic materials and HAPs. If compliance is questionable, then the permittee reserves the right to use both automatic and manual blanket wash system figures in the calculations.
- vi. A destruction efficiency of 93.93% shall be assumed for each of the two incinerators, per A.2.a above.

The maximum annual facility-wide emissions of organic materials shall not exceed 99.0 TPY, based upon a rolling 12-month summation of the monthly emissions.

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

Month(s) Maximum Allowable Facility-Wide Cumulative Emissions of Organic Materials (Tons)

1	8.2
1-2	16.5
1-3	24.8
1-4	33.0
1-5	41.2
1-6	49.5
1-7	57.8
1-8	66.0
1-9	74.2
1-10	82.5
1-11	90.8
1-12	99.0

After the first 12 calendar months of operation following the issuance of this permit, compliance with the maximum annual facility-wide organic materials emission limitation shall be based upon a rolling, 12-month summation of the monthly emissions.

The maximum annual facility-wide emissions of any individual HAP shall not exceed 9.9 TPY, based upon a rolling 12-month summation of the monthly emissions.

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

Month(s) Maximum Allowable Facility-Wide Cumulative Emissions of any Individual HAP (Tons)

1	0.8
1-2	1.6
1-3	2.5
1-4	3.3
1-5	4.1
1-6	5.0
1-7	5.8
1-8	6.6
1-9	7.4
1-10	8.2
1-11	9.1
1-12	9.9

After the first 12 calendar months of operation following the issuance of this permit, compliance with the maximum annual facility-wide individual HAP emission limitation shall be based upon a rolling, 12-month summation of the monthly emissions.

The maximum annual facility-wide emissions of combined HAPs shall not exceed 24.9 TPY, based upon a rolling 12-month summation of the monthly emissions.

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

Month(s) Maximum Allowable Facility-Wide Cumulative Emissions of Combined HAPs (Tons)

1-2 1
1-2 4.2
1-3 6.2
1-4 8.3
1-5 10.4
1-6 12.4
1-7 14.5
1-8 16.6
1-9 18.7
1-10 20.8
1-11 22.8
1-12 24.9

After the first 12 calendar months of operation following the issuance of this permit, compliance with the maximum annual facility-wide combined HAPs emission limitation shall be based upon a rolling, 12-month summation of the monthly emissions.

B. Operational Restrictions

1. The permittee shall not employ any photochemically reactive material, as defined by OAC Rule 3745-21-01 (C)(5), in this emissions unit. This determination shall be made based on the actual formulation of the materials after any final in-plant reducing or thinning and prior to application of the materials.
2. The dryer(s) for this emissions unit shall only employ natural gas.
3. The permittee shall operate and maintain the thermal incinerator so that during any 3-hour block of time the average combustion temperature within the thermal incinerator is a minimum of 1350 degrees Fahrenheit.

C. Monitoring and/or Record Keeping Requirements

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

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

- a. All 3-hour blocks of time during which the average combustion temperature within the thermal incinerator, when the incinerator was in operation, was below 1350 degrees Fahrenheit.
 - b. A log of the downtime for the capture (collection) system, control device, and monitoring/recording equipment, when the associated emissions units were in operation.
2. The permittee shall collect and record monthly the following information for all emissions units (including de minimis emissions units) to determine facility-wide emissions of organic materials:
 - a. the company identification for each printing ink (heatset and non-heatset), fountain solution, and cleanup material (blanket-wash, thinning solvent, etc.) employed;
 - b. the number of gallons of each ink employed;
 - c. the number of gallons of each fountain solution employed;
 - d. the number of gallons of each cleanup material employed;
 - e. the organic material content of each ink employed, in pounds of organic material per gallon of ink;
 - f. the organic material content of each fountain solution employed, in pounds of organic material per gallon of fountain solution;
 - g. the organic material content of each cleanup material employed, in pounds of organic material per gallon of cleanup material;
 - h. the available organic material from all inks employed, in pounds, i.e., the sum of (b)x(e) for all inks;
 - i. the available organic material from all fountain solutions employed, in pounds, i.e., the sum of (c)x(f) for all fountain solutions;
 - j. the available organic material from all cleanup materials employed, in pounds, i.e., the sum of (d)x(g) for all cleanup materials; and
 - k. the total organic material emissions (stack and fugitive), in tons, i.e., $\frac{[(h) \times 0.8] + [(i) \times 0.7] + [(j) \times 0.4] \times [1 - 0.9393] + [(i) \times 0.3] + [(j) \times 0.6]}{2000}$.

Note: information for the equation in C.2.k is based on DAPC guidance as specified in A.2.b above.

3. The permittee shall collect and record monthly the following information for all emissions units (including de minimis emissions units) to determine facility-wide emissions of individual HAPs:
 - a. the company identification for each printing ink (heatset and non-heatset), fountain solution, and cleanup material (blanket-wash, thinning solvent, etc.) employed;
 - b. the number of gallons of each ink employed;
 - c. the number of gallons of each fountain solution employed;
 - d. the number of gallons of each cleanup material employed;
 - e. the individual HAP content for each individual HAP of each ink employed, in pounds of individual HAP per gallon of ink;
 - f. the individual HAP content for each individual HAP of each fountain solution employed, in pounds of individual HAP per gallon of fountain solution;
 - g. the individual HAP content for each individual HAP of each cleanup material employed, in pounds of individual HAP per gallon of cleanup material;
 - h. the available individual HAP for each individual HAP of each ink employed, in pounds, i.e., for each individual

- HAP, the sum of (b)x(e) for all inks;
- i. the available individual HAP for each individual HAP of each fountain solution employed, in pounds, i.e., for each individual HAP, the sum of (c)x(f) for all fountain solutions;
 - j. the available individual HAP for each individual HAP of each cleanup material employed, in pounds, i.e., for each individual HAP, the sum of (d)x(g) for all cleanup materials;
 - k. the individual HAP emissions for each individual HAP from all inks, fountain solutions, and cleanup materials employed, in tons, i.e., for each individual HAP, $(((h) \times 0.8) + [(i) \times 0.7] + [(j) \times 0.4]) \times [1 - 0.9393] + [(i) \times 0.3] + [(j) \times 0.6] / 2000$;
 - l. during the first 12 calendar months of operation following the issuance of this permit, the cumulative monthly individual HAP emissions for each individual HAP, in tons; and
 - m. after the first 12 calendar months of operation following the issuance of this permit, the summation of the previous 12 calendar months of monthly individual HAP emissions for each individual HAP, in tons per year.
4. The permittee shall collect and record monthly the following information for all emissions units (including de minimis emissions units) to determine facility-wide emissions of combined HAPs:
 - a. the company identification for each printing ink (heatset and non-heatset), fountain solution, and cleanup material (blanket-wash, thinning solvent, etc.) employed;
 - b. the number of gallons of each ink employed;
 - c. the number of gallons of each fountain solution employed;
 - d. the number of gallons of each cleanup material employed;
 - e. the combined HAPs content of each ink employed, in pounds of combined HAPs per gallon of ink;
 - f. the combined HAPs content of each fountain solution employed, in pounds of combined HAPs per gallon of fountain solution;
 - g. the combined HAPs content of each cleanup material employed, in pounds of combined HAPs per gallon of cleanup material;
 - h. the available combined HAPs of each ink employed, in pounds per month, i.e., the sum of (b)x(e) for all inks;
 - i. the available combined HAPs of each fountain solution employed, in pounds per month, i.e., the sum of (c)x(f) for all fountain solutions;
 - j. the available combined HAPs of each cleanup material employed, in pounds per month, i.e., the sum of (d)x(g) for all cleanup materials;
 - k. the combined HAPs emissions from all inks, fountain solutions, and cleanup materials employed, in tons, i.e., $(((h) \times 0.8) + [(i) \times 0.7] + [(j) \times 0.4]) \times [1 - 0.9393] + [(i) \times 0.3] + [(j) \times 0.6] / 2000$;
 - l. during the first 12 calendar months of operation following the issuance of this permit, the cumulative monthly combined HAPs emissions, in tons; and
 - m. after the first 12 calendar months of operation following the issuance of this permit, the summation of the previous 12 calendar months of monthly combined HAPs emissions, in tons per year.
 5. The permittee shall maintain monthly records as to whether or not each ink, fountain solution, and cleanup material employed is a photochemically reactive material.
 6. The permittee shall collect and record the following information for each change where the air toxic modeling was required pursuant to the Air Toxic Policy:
 - a. background data that describes the parameters changed (composition of materials, new pollutants emitted, change in stack/exhaust parameters, etc.); and
 - b. a copy of the resulting computer model runs that show the results of the application of the Air Toxic Policy for the change.
- D. Reporting Requirements**
1. The permittee shall submit deviation (excursion) reports that identify each calendar month, of the first 12 calendar months of operation after the issuance of this permit, during which the cumulative monthly facility-wide emissions of any individual HAP exceeded the allowable cumulative monthly facility-wide emission limit.
 2. The permittee shall submit deviation (excursion) reports that identify each rolling 12-month summation, after the first 12 calendar months of operation following the issuance of this permit, during which the 12-month summation of facility-wide emissions of any individual HAP exceeded the allowable facility-wide emission limit of 9.9 TPY.
 3. The permittee shall submit deviation (excursion) reports that identify each calendar month, of the first 12 calendar months of operation after the issuance of this permit, during which the cumulative monthly facility-wide emissions of combined HAPs exceeded the allowable cumulative monthly facility-wide emission limit.
 4. The permittee shall submit deviation (excursion) reports that identify each rolling 12-month summation, after the first 12 calendar months of operation following the issuance of this permit, during which the 12-month summation of facility-wide emissions of combined HAPs exceeded the allowable facility-wide emission limit of 24.9 TPY.
 5. The permittee shall submit deviation (excursion) reports that identify each calendar month, of the first 12 calendar months of operation after the issuance of this permit, during which the cumulative monthly facility-wide emissions of organic materials exceeded the allowable cumulative monthly facility-wide emission limit.
 6. The permittee shall submit deviation (excursion) reports that identify each rolling 12-month summation, after the first 12 calendar months of operation following the issuance of this permit, during which the 12-month summation of facility-wide emissions of organic materials exceeded the allowable facility-wide emission limit of 99.0 TPY.
 7. The permittee shall submit deviation (excursion) reports that identify all periods of time during which the combustion temperature within the thermal incinerator does not comply with the temperature limitation specified above.
 8. The permittee shall submit deviation (excursion) reports that identify the days during which any photochemically reactive materials were employed in this emissions unit. Each report shall identify the cause for the use of the photochemically reactive material(s) and the estimated total quantity of material(s) emitted during each such day, in pounds.

9. Deviation (excursion) reports, as mentioned above, shall be submitted in accordance with the procedures required in Part I: General Terms and Condition #3.
 10. The permittee shall submit in writing annual reports to the Director (appropriate District Office or local air agency) which specify the total organic material emissions, in tons, the total individual HAP emissions, in tons, and the total combined HAP emissions, in tons, from this facility for the previous calendar year. Each report shall be submitted by January 31 of each year.
- E. Testing Requirements**
1. Compliance with the emission limitations in Section A of these terms and conditions shall be determined in accordance with the following methods:
Formulation data or USEPA Methods 24/24A shall be used to determine the organic material and HAP contents of the fountain solutions, cleanup materials, and inks.
Emission Limitation:

The thermal incinerator shall have a destruction efficiency of not less than 90%, by weight.

Applicable Compliance Method:

See testing requirements under E.2 for the method of determining compliance.
Emission Limitation:

Maximum allowable cumulative monthly facility-wide organic material emissions for the first 12 calendar months of operation following the issuance of this permit.

Applicable Compliance Method:

The permittee shall demonstrate compliance with the above limitation based upon the recordkeeping requirements of these T&C's.
Emission Limitation:

Maximum allowable annual facility-wide organic material emissions, after the first 12 calendar months of operation following the issuance of this permit, shall not exceed 99.0 TPY.

Applicable Compliance Method:

The permittee shall demonstrate compliance with the above limitation based upon the recordkeeping requirements of these T&C's.
Emission Limitation:

Maximum allowable cumulative monthly facility-wide individual HAP emissions for the first 12 calendar months of operation following the issuance of this permit.

Applicable Compliance Method:

The permittee shall demonstrate compliance with the above limitation based upon the recordkeeping requirements of these T&C's.
Emission Limitation:

Maximum allowable annual facility-wide individual HAP emissions, after the first 12 calendar months of operation following the issuance of this permit, shall not exceed 9.9 TPY.

Applicable Compliance Method:

The permittee shall demonstrate compliance with the above limitation based upon the recordkeeping requirements of these T&C's.
Emission Limitation:

Maximum allowable cumulative monthly facility-wide combined HAPs emissions for the first 12 calendar months of operation following the issuance of this permit.

Applicable Compliance Method:

The permittee shall demonstrate compliance with the above limitation based upon the recordkeeping requirements of these T&C's.
Emission Limitation:

Maximum allowable annual facility-wide combined HAPs emissions, after the first 12 calendar months of operation following the issuance of this permit, shall not exceed 24.9 TPY.

Applicable Compliance Method:

The permittee shall demonstrate compliance with the above limitation based upon the recordkeeping requirements of these T&C's.
Emission Limitation:

Visible particulate emissions from the incinerator stack shall not exceed 20% opacity, as a six-minute average.

Applicable Compliance Method:

If required, compliance shall be determined by visible emission evaluations performed in accordance with OAC rule 3745-17-03(B)(1) using the methods and procedures specified in USEPA Method 9, 40 CFR Part 60, Appendix A.
Emission Limitation:

No visible particulate emissions from building ventilation

Applicable Compliance Method:

If required, compliance shall be determined by visible emission evaluations performed in accordance with OAC rule 3745-17-03(B)(4) using the methods and procedures specified in USEPA Method 22, 40 CFR Part 60, Appendix A.
Emission Limit:

2.25 lbs/hr particulates

Applicable Compliance Method:

If required, compliance with this mass emission limitation shall be based on stack testing per OAC rule 3745-17-03(B).

2. The permittee shall conduct, or have conducted, emission testing for K001, K002, and K003 operating simultaneously in accordance with the following requirements:

The emissions testing shall be conducted within 6 months prior to permit renewal.
The emissions testing shall be conducted to demonstrate compliance with the destruction efficiency limitation for organic materials.

The following test method shall be employed to demonstrate compliance with the destruction efficiency limitation for organic material: Method 25 or 25A of 40 CFR Part 60, Appendix A.

The testing shall be conducted while the emissions units are operating at or near their maximum capacities, unless otherwise specified or approved by the appropriate Ohio EPA District Office or local air agency.

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. 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.

A capture efficiency of 100% of organic material emissions shall be verified, during emission compliance testing of the emissions units/control system, via the appropriate use of smoke tubes, magnehelic devices, etc., by demonstrating that sufficient continuous negative pressure is maintained within the dryers and the ductwork from the dryers to the thermal incinerator to prevent fugitive emissions.

In the final compliance test report prepared by the testing company, a description of the method used to determine 100% capture efficiency and the results of the determination shall be summarized.

Combustion temperatures within the thermal incinerator shall be monitored and recorded during emission compliance testing of the emissions units/control system. The combustion temperature within the thermal incinerator, along with the destruction efficiency of the control device, mass emission rates of organic materials, and other relevant test data, for each test run completed, shall be published in the final test report.

Not later than 30 days prior to the proposed test date(s), this facility shall submit an "Intent to Test" notification. 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 District Office's or local air agency's refusal to accept the results of the emission tests.

Personnel from the appropriate Ohio EPA District Office or local air agency shall be permitted to witness the tests, examine the testing equipment, and acquire data and information regarding the emissions unit operating parameters.

A comprehensive written report on the results of the emissions tests shall be submitted to the appropriate Ohio EPA District Office or local air agency within 30 days following completion of the test(s).

F. Miscellaneous Requirements

1. This permit allows the use of materials (typically coatings and cleanup materials) specified by the permittee in the permit to install application for this emissions unit. To fulfill the best available technology requirements of Ohio Administrative Code (OAC) rule 3745-31-05 and to ensure compliance with OAC rule 3745-15-07 (Air Pollution Nuisances Prohibited), pollutant ground-level concentrations were established using the Ohio EPA's "Air Toxic Policy" and are based on both the materials used and the design parameters of the emissions unit's exhaust system, as specified in the application. The Ohio EPA's "Air Toxic Policy" was applied for ethylene glycol using the SCREEN 3.0 model and comparing the predicted 1-hour maximum ground-level concentration to the Maximum Acceptable Ground-Level Concentration (MAGLC). The following summarizes the results of the modeling for ethylene glycol:

Pollutant: ethylene glycol (CAS 107-21-1)

TWA (mg/m3): 127

Maximum Average Hourly Emission Rate (lbs/hr): 18.1

Predicted 1-Hour Maximum Ground-Level Concentration at 27 m (mg/m3): 1.3

Maximum Acceptable Ground-Level Concentration (MAGLC) (mg/m3): 3.0

2. OAC Chapter 3745-31 requires permittees to apply for and obtain a new or modified permit to install prior to making a "modification" as defined by the OAC rule 3745-31-01. The permittee is hereby advised that the following changes to the process may be determined to be a "modification":

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

b. Changes to the emissions unit or its exhaust parameters (e.g., increased emission rate [not including an increase in an "allowable" emission limitation specified in the terms and conditions of this permit], reduced exhaust gas flow rate, and decreased stack height);

c. Changes in the composition of the materials used, or use of new materials, that would result in the emission of an air contaminant not previously permitted; and

- d. Changes in the composition of the materials, or use of new materials, that would result in an increase in emissions of any pollutant that has a listed TLV.
- 3. The Ohio EPA will not consider any of the above-mentioned as a "modification" requiring a permit to install, if the following conditions are met:
 - a. The change is not otherwise considered a "modification" under OAC Chapter 3745-31;
 - b. The permittee can continue to comply with the allowable emission limitations specified in its permit to install; and
 - c. Prior to the change, the applicant conducts an evaluation pursuant to the Air Toxic Policy, determines that the changed emissions unit still satisfies the Air Toxic Policy, and the permittee maintains documentation that identifies the change and the results of the application of the Air Toxic Policy for the change.

For any change to the emissions unit or its method of operation that either would require an increase in the emission limitation(s) established by this permit or would otherwise be considered a "modification" as defined in OAC rule 3745-31-01, the permittee shall obtain a final permit to install prior to the change.
- 4. All of the terms and conditions of this permit are federally enforceable pursuant to OAC rule 3745-35-07.

THIS IS NOT AN OFFICIAL VERSION OF THE PERMIT. SEE PAGE 1 FOR ADDITIONAL INFORMATION

Facility ID: 1652050075 Emissions Unit ID: K004 Issuance type: Draft State Permit To Operate

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Part II - Special Terms and Conditions

This permit document constitutes a permit-to-install issued in accordance with ORC 3704.03(F) and a permit-to-operate issued in accordance with ORC 3704.03(G).

- 1. For the purpose of a permit-to-install document, the emissions unit terms and conditions identified below are federally enforceable with the exception of those listed below which are enforceable under state law only.
 - (a) None.
- 2. For the purpose of a permit-to-operate document, the emissions unit terms and conditions identified below are enforceable under state law only with the exception of those listed below which are federally enforceable.
 - (a) None.

A. Applicable Emissions Limitations and/or Control Requirements

- 1. The specific operation(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 employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/Requirements</u>	<u>Applicable Emissions Limitations/Control Measures</u>
Heatset web offset printing line: maximum ink usage capacity @ 8.0 gals/hr, maximum ink density @ 8.2 lbs/gal, maximum ink organic material content @ 40% by weight; maximum fountain solution usage capacity @ 1.0 gal/hr, maximum fountain solution organic content @ 0.44 lb/gal; hot-air dryer emissions (70% of organic materials from fountain solution and 80% of organic materials from ink) vented to a direct flame incinerator (the other 30% of organic materials from fountain solution is fugitive and the other 20% of organic materials from ink is retained in the web), with a minimum destruction efficiency @ 90%	OAC rule 3745-31-05 (PTI 16-241)	All dryer emissions of organic materials shall vent to a direct flame (thermal) incinerator. The thermal incinerator must, at a minimum, oxidize or convert 90% or more of the carbon in the organic material being incinerated to carbon dioxide, by weight. See A.2.a below. Incinerator stack emissions shall not exceed 2.1 lbs/hr of organic materials (based on controlled potential emissions with 90% incinerator destruction), excluding organic material emissions from cleanup. There shall be no visible emissions of particulates from any building ventilation (i.e., doors, windows, vents, etc.). Hand rags and any other articles used for cleanup shall be placed in a closed/sealed container, when not in use or for proper disposal, to reduce fugitive organic material emissions.
	OAC rule 3745-21-07	Also, the operational restrictions in Section B below satisfy OAC rule 3745-31-05 requirements.
	OAC rule 3745-35-07	The limit based on this rule is less stringent than the limits established pursuant to OAC rule 3745-31-05.
	OAC rule 3745-17-07	See A.2.b, A.2.c, A.2.d, and A.2.e below. 20% opacity from any stack, as a 6-minute average.

OAC rule 3745-17-11

Incinerator stack emissions shall not exceed 0.551 lb/hr of particulates.

2. Additional Terms and Conditions

- (a) During the last emission compliance testing performed on June 27, 1997, the thermal incinerator controlling the organic material emissions from K001 - K003 combined demonstrated an average destruction efficiency of 96.20%.

Also during the June 27, 1997 testing, the other thermal incinerator that controls the organic material emissions from K004 demonstrated an average destruction efficiency of 93.93%.

The permittee may use 93.93% destruction to determine facility-wide emissions of organic materials (resulting from heatset printing ink, fountain solution, and blanket wash) to simplify recordkeeping. If compliance is questionable, then the permittee reserves the right to use both tested incinerator destruction efficiencies.

Facility-wide emissions of organic materials and hazardous air pollutants (HAPs), per DAPC guidance, shall be calculated for all emissions units as follows:

- i. 20% (by weight) of the solvent in the heatset inks is retained in the web after the dryer. Assuming 100% capture, the remaining 80% (by weight) of the organic materials and HAPs in the ink is vented to the thermal incinerator.
- ii. 95% (by weight) of the solvent in the non-heatset inks is retained in the web, and the remaining 5% (by weight) of the solvent is fugitive emissions.
- iii. For heatset printing lines, 30% of the fountain solution emissions is fugitive, and the remaining 70% of the fountain solution emissions is vented to the thermal incinerator.
- iv. For automatic blanket wash systems, 60% of the solvent is fugitive, and 40% is vented to the thermal incinerator. For manual blanket wash systems (i.e., hand-washing with rags), 50% of the solvent is fugitive and 50% is retained in the properly disposed of rags.
- v. To simplify calculations, the permittee may assume that only automatic blanket wash is employed when calculating facility-wide emissions of organic materials and HAPs. If compliance is questionable, then the permittee reserves the right to use both automatic and manual blanket wash system figures in the calculations.

vi. A destruction efficiency of 93.93% shall be assumed for each of the two incinerators, per A.2.a above. The maximum annual facility-wide emissions of organic materials shall not exceed 99.0 TPY, based upon a rolling 12-month summation of the monthly emissions.

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

Month(s) Maximum Allowable Facility-Wide Cumulative Emissions of Organic Materials (Tons)

1	8.2
1-2	16.5
1-3	24.8
1-4	33.0
1-5	41.2
1-6	49.5
1-7	57.8
1-8	66.0
1-9	74.2
1-10	82.5
1-11	90.8
1-12	99.0

After the first 12 calendar months of operation following the issuance of this permit, compliance with the maximum annual facility-wide organic materials emission limitation shall be based upon a rolling, 12-month summation of the monthly emissions.

The maximum annual facility-wide emissions of any individual HAP shall not exceed 9.9 TPY, based upon a rolling 12-month summation of the monthly emissions.

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

Month(s) Maximum Allowable Facility-Wide Cumulative Emissions of any Individual HAP (Tons)

1	0.8
1-2	1.6
1-3	2.5
1-4	3.3
1-5	4.1
1-6	5.0
1-7	5.8
1-8	6.6
1-9	7.4
1-10	8.2
1-11	9.1
1-12	9.9

After the first 12 calendar months of operation following the issuance of this permit, compliance with the

maximum annual facility-wide individual HAP emission limitation shall be based upon a rolling, 12-month summation of the monthly emissions.

The maximum annual facility-wide emissions of combined HAPs shall not exceed 24.9 TPY, based upon a rolling 12-month summation of the monthly emissions.

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

Month(s) Maximum Allowable Facility-Wide Cumulative Emissions of Combined HAPs (Tons)

1-2 1
1-2 4.2
1-3 6.2
1-4 8.3
1-5 10.4
1-6 12.4
1-7 14.5
1-8 16.6
1-9 18.7
1-10 20.8
1-11 22.8
1-12 24.9

After the first 12 calendar months of operation following the issuance of this permit, compliance with the maximum annual facility-wide combined HAPs emission limitation shall be based upon a rolling, 12-month summation of the monthly emissions.

B. Operational Restrictions

1. The permittee shall not employ any photochemically reactive material, as defined by OAC Rule 3745-21-01 (C)(5), in this emissions unit. This determination shall be made based on the actual formulation of the materials after any final in-plant reducing or thinning and prior to application of the materials.
2. The dryer(s) for this emissions unit shall only employ natural gas.
3. The permittee shall operate and maintain the thermal incinerator so that during any 3-hour block of time the average combustion temperature within the thermal incinerator is a minimum of 1350 degrees Fahrenheit.

C. Monitoring and/or Record Keeping Requirements

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

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

- a. All 3-hour blocks of time during which the average combustion temperature within the thermal incinerator, when the incinerator was in operation, was below 1350 degrees Fahrenheit.
 - b. A log of the downtime for the capture (collection) system, control device, and monitoring/recording equipment, when the associated emissions units were in operation.
2. The permittee shall collect and record monthly the following information for all emissions units (including de minimis emissions units) to determine facility-wide emissions of organic materials:
 - a. the company identification for each printing ink (heatset and non-heatset), fountain solution, and cleanup material (blanket-wash, thinning solvent, etc.) employed;
 - b. the number of gallons of each ink employed;
 - c. the number of gallons of each fountain solution employed;
 - d. the number of gallons of each cleanup material employed;
 - e. the organic material content of each ink employed, in pounds of organic material per gallon of ink;
 - f. the organic material content of each fountain solution employed, in pounds of organic material per gallon of fountain solution;
 - g. the organic material content of each cleanup material employed, in pounds of organic material per gallon of cleanup material;
 - h. the available organic material from all inks employed, in pounds, i.e., the sum of (b)x(e) for all inks;
 - i. the available organic material from all fountain solutions employed, in pounds, i.e., the sum of (c)x(f) for all fountain solutions;
 - j. the available organic material from all cleanup materials employed, in pounds, i.e., the sum of (d)x(g) for all cleanup materials; and
 - k. the total organic material emissions (stack and fugitive), in tons, i.e., $\frac{[(h) \times 0.8] + [(i) \times 0.7] + [(j) \times 0.4]}{2000}$

Note: information for the equation in C.2.k is based on DAPC guidance as specified in A.2.b above.

3. The permittee shall collect and record monthly the following information for all emissions units (including de minimis emissions units) to determine facility-wide emissions of individual HAPs:
 - a. the company identification for each printing ink (heatset and non-heatset), fountain solution, and cleanup material (blanket-wash, thinning solvent, etc.) employed;
 - b. the number of gallons of each ink employed;
 - c. the number of gallons of each fountain solution employed;
 - d. the number of gallons of each cleanup material employed;
 - e. the individual HAP content for each individual HAP of each ink employed, in pounds of individual HAP per gallon of ink;

- f. the individual HAP content for each individual HAP of each fountain solution employed, in pounds of individual HAP per gallon of fountain solution;
 - g. the individual HAP content for each individual HAP of each cleanup material employed, in pounds of individual HAP per gallon of cleanup material;
 - h. the available individual HAP for each individual HAP of each ink employed, in pounds, i.e., for each individual HAP, the sum of (b)x(e) for all inks;
 - i. the available individual HAP for each individual HAP of each fountain solution employed, in pounds, i.e., for each individual HAP, the sum of (c)x(f) for all fountain solutions;
 - j. the available individual HAP for each individual HAP of each cleanup material employed, in pounds, i.e., for each individual HAP, the sum of (d)x(g) for all cleanup materials;
 - k. the individual HAP emissions for each individual HAP from all inks, fountain solutions, and cleanup materials employed, in tons, i.e., for each individual HAP, $\frac{[(h) \times 0.8] + [(i) \times 0.7] + [(j) \times 0.4] \times [1 - 0.9393] + [(i) \times 0.3] + [(j) \times 0.6]}{2000}$;
 - l. during the first 12 calendar months of operation following the issuance of this permit, the cumulative monthly individual HAP emissions for each individual HAP, in tons; and
 - m. after the first 12 calendar months of operation following the issuance of this permit, the summation of the previous 12 calendar months of monthly individual HAP emissions for each individual HAP, in tons per year.
4. The permittee shall collect and record monthly the following information for all emissions units (including de minimis emissions units) to determine facility-wide emissions of combined HAPs:
 - a. the company identification for each printing ink (heatset and non-heatset), fountain solution, and cleanup material (blanket-wash, thinning solvent, etc.) employed;
 - b. the number of gallons of each ink employed;
 - c. the number of gallons of each fountain solution employed;
 - d. the number of gallons of each cleanup material employed;
 - e. the combined HAPs content of each ink employed, in pounds of combined HAPs per gallon of ink;
 - f. the combined HAPs content of each fountain solution employed, in pounds of combined HAPs per gallon of fountain solution;
 - g. the combined HAPs content of each cleanup material employed, in pounds of combined HAPs per gallon of cleanup material;
 - h. the available combined HAPs of each ink employed, in pounds per month, i.e., the sum of (b)x(e) for all inks;
 - i. the available combined HAPs of each fountain solution employed, in pounds per month, i.e., the sum of (c)x(f) for all fountain solutions;
 - j. the available combined HAPs of each cleanup material employed, in pounds per month, i.e., the sum of (d)x(g) for all cleanup materials;
 - k. the combined HAPs emissions from all inks, fountain solutions, and cleanup materials employed, in tons, i.e., $\frac{[(h) \times 0.8] + [(i) \times 0.7] + [(j) \times 0.4] \times [1 - 0.9393] + [(i) \times 0.3] + [(j) \times 0.6]}{2000}$;
 - l. during the first 12 calendar months of operation following the issuance of this permit, the cumulative monthly combined HAPs emissions, in tons; and
 - m. after the first 12 calendar months of operation following the issuance of this permit, the summation of the previous 12 calendar months of monthly combined HAPs emissions, in tons per year.
 5. The permittee shall maintain monthly records as to whether or not each ink, fountain solution, and cleanup material employed is a photochemically reactive material.
 6. The permittee shall collect and record the following information for each change where the air toxic modeling was required pursuant to the Air Toxic Policy:
 - a. background data that describes the parameters changed (composition of materials, new pollutants emitted, change in stack/exhaust parameters, etc.); and
 - b. a copy of the resulting computer model runs that show the results of the application of the Air Toxic Policy for the change.
- D. Reporting Requirements**
1. The permittee shall submit deviation (excursion) reports that identify each calendar month, of the first 12 calendar months of operation after the issuance of this permit, during which the cumulative monthly facility-wide emissions of any individual HAP exceeded the allowable cumulative monthly facility-wide emission limit.
 2. The permittee shall submit deviation (excursion) reports that identify each rolling 12-month summation, after the first 12 calendar months of operation following the issuance of this permit, during which the 12-month summation of facility-wide emissions of any individual HAP exceeded the allowable facility-wide emission limit of 9.9 TPY.
 3. The permittee shall submit deviation (excursion) reports that identify each calendar month, of the first 12 calendar months of operation after the issuance of this permit, during which the cumulative monthly facility-wide emissions of combined HAPs exceeded the allowable cumulative monthly facility-wide emission limit.
 4. The permittee shall submit deviation (excursion) reports that identify each rolling 12-month summation, after the first 12 calendar months of operation following the issuance of this permit, during which the 12-month summation of facility-wide emissions of combined HAPs exceeded the allowable facility-wide emission limit of 24.9 TPY.
 5. The permittee shall submit deviation (excursion) reports that identify each calendar month, of the first 12 calendar months of operation after the issuance of this permit, during which the cumulative monthly facility-wide emissions of organic materials exceeded the allowable cumulative monthly facility-wide emission limit.
 6. The permittee shall submit deviation (excursion) reports that identify each rolling 12-month summation, after the first 12 calendar months of operation following the issuance of this permit, during which the 12-month summation of facility-wide emissions of organic materials exceeded the allowable facility-wide emission limit of 99.0 TPY.
 7. The permittee shall submit deviation (excursion) reports that identify all periods of time during which the combustion temperature within the thermal incinerator does not comply with the temperature limitation specified above.

8. The permittee shall submit deviation (excursion) reports that identify the days during which any photochemically reactive materials were employed in this emissions unit. Each report shall identify the cause for the use of the photochemically reactive material(s) and the estimated total quantity of material(s) emitted during each such day, in pounds.
9. Deviation (excursion) reports, as mentioned above, shall be submitted in accordance with the procedures required in Part I: General Terms and Condition #3.
10. The permittee shall submit in writing annual reports to the Director (appropriate District Office or local air agency) which specify the total organic material emissions, in tons, the total individual HAP emissions, in tons, and the total combined HAP emissions, in tons, from this facility for the previous calendar year. Each report shall be submitted by January 31 of each year.

E. Testing Requirements

1. Compliance with the emission limitations in Section A of these terms and conditions shall be determined in accordance with the following methods:
Formulation data or USEPA Methods 24/24A shall be used to determine the organic material and HAP contents of the fountain solutions, cleanup materials, and inks.
Emission Limitation:

The thermal incinerator shall have a destruction efficiency of not less than 90%, by weight.

Applicable Compliance Method:

See testing requirements under E.2 for the method of determining compliance.
Emission Limitation:

Maximum allowable cumulative monthly facility-wide organic material emissions for the first 12 calendar months of operation following the issuance of this permit.

Applicable Compliance Method:

The permittee shall demonstrate compliance with the above limitation based upon the recordkeeping requirements of these T&C's.
Emission Limitation:

Maximum allowable annual facility-wide organic material emissions, after the first 12 calendar months of operation following the issuance of this permit, shall not exceed 99.0 TPY.

Applicable Compliance Method:

The permittee shall demonstrate compliance with the above limitation based upon the recordkeeping requirements of these T&C's.
Emission Limitation:

Maximum allowable cumulative monthly facility-wide individual HAP emissions for the first 12 calendar months of operation following the issuance of this permit.

Applicable Compliance Method:

The permittee shall demonstrate compliance with the above limitation based upon the recordkeeping requirements of these T&C's.
Emission Limitation:

Maximum allowable annual facility-wide individual HAP emissions, after the first 12 calendar months of operation following the issuance of this permit, shall not exceed 9.9 TPY.

Applicable Compliance Method:

The permittee shall demonstrate compliance with the above limitation based upon the recordkeeping requirements of these T&C's.
Emission Limitation:

Maximum allowable cumulative monthly facility-wide combined HAPs emissions for the first 12 calendar months of operation following the issuance of this permit.

Applicable Compliance Method:

The permittee shall demonstrate compliance with the above limitation based upon the recordkeeping requirements of these T&C's.
Emission Limitation:

Maximum allowable annual facility-wide combined HAPs emissions, after the first 12 calendar months of operation following the issuance of this permit, shall not exceed 24.9 TPY.

Applicable Compliance Method:

The permittee shall demonstrate compliance with the above limitation based upon the recordkeeping requirements of these T&C's.
Emission Limitation:

Visible particulate emissions from the incinerator stack shall not exceed 20% opacity, as a six-minute average.

Applicable Compliance Method:

If required, compliance shall be determined by visible emission evaluations performed in accordance with OAC

rule 3745-17-03(B)(1) using the methods and procedures specified in USEPA Method 9, 40 CFR Part 60, Appendix A.
Emission Limitation:

No visible particulate emissions from building ventilation

Applicable Compliance Method:

If required, compliance shall be determined by visible emission evaluations performed in accordance with OAC rule 3745-17-03(B)(4) using the methods and procedures specified in USEPA Method 22, 40 CFR Part 60, Appendix A.
Emission Limit:

0.551 lb/hr particulates

Applicable Compliance Method:

If required, compliance with this mass emission limitation shall be based on stack testing per OAC rule 3745-17-03(B).

2. The permittee shall conduct, or have conducted, emission testing for K004 in accordance with the following requirements:

The emissions testing shall be conducted within 6 months prior to permit renewal.

The emissions testing shall be conducted to demonstrate compliance with the destruction efficiency limitation for organic materials.

The following test method shall be employed to demonstrate compliance with the destruction efficiency limitation for organic material: Method 25 or 25A of 40 CFR Part 60, Appendix A.

The testing shall be conducted while the emissions unit is operating at or near maximum capacity, unless otherwise specified or approved by the appropriate Ohio EPA District Office or local air agency.

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. 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.

A capture efficiency of 100% of organic material emissions shall be verified, during emission compliance testing of the emissions units/control system, via the appropriate use of smoke tubes, magnehelic devices, etc., by demonstrating that sufficient continuous negative pressure is maintained within the dryers and the ductwork from the dryers to the thermal incinerator to prevent fugitive emissions.

In the final compliance test report prepared by the testing company, a description of the method used to determine 100% capture efficiency and the results of the determination shall be summarized.

Combustion temperatures within the thermal incinerator shall be monitored and recorded during emission compliance testing of the emissions unit/control system. The combustion temperature within the thermal incinerator, along with the destruction efficiency of the control device, mass emission rates of organic materials, and other relevant test data, for each test run completed, shall be published in the final test report.

Not later than 30 days prior to the proposed test date(s), this facility shall submit an "Intent to Test" notification. 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 District Office's or local air agency's refusal to accept the results of the emission tests.

Personnel from the appropriate Ohio EPA District Office or local air agency shall be permitted to witness the tests, examine the testing equipment, and acquire data and information regarding the emissions unit operating parameters.

A comprehensive written report on the results of the emissions tests shall be submitted to the appropriate Ohio EPA District Office or local air agency within 30 days following completion of the test(s).

F. Miscellaneous Requirements

1. This permit allows the use of materials (typically coatings and cleanup materials) specified by the permittee in the permit to install application for this emissions unit. To fulfill the best available technology requirements of Ohio Administrative Code (OAC) rule 3745-31-05 and to ensure compliance with OAC rule 3745-15-07 (Air Pollution Nuisances Prohibited), pollutant ground-level concentrations were established using the Ohio EPA's "Air Toxic Policy" and are based on both the materials used and the design parameters of the emissions unit's exhaust system, as specified in the application. The Ohio EPA's "Air Toxic Policy" was applied for ethylene glycol using the SCREEN 3.0 model and comparing the predicted 1-hour maximum ground-level concentration to the Maximum Acceptable Ground-Level Concentration (MAGLC). The following summarizes the results of the modeling for ethylene glycol:

Pollutant: ethylene glycol (CAS 107-21-1)

TWA (mg/m3): 127

Maximum Average Hourly Emission Rate (lbs/hr): 18.1

Predicted 1-Hour Maximum Ground-Level Concentration at 27 m (mg/m3): 1.3

Maximum Acceptable Ground-Level Concentration (MAGLC) (mg/m3): 3.0

2. OAC Chapter 3745-31 requires permittees to apply for and obtain a new or modified permit to install prior to making a "modification" as defined by the OAC rule 3745-31-01. The permittee is hereby advised that the following changes to the process may be determined to be a "modification":

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

b. Changes to the emissions unit or its exhaust parameters (e.g., increased emission rate [not including an increase in an "allowable" emission limitation specified in the terms and conditions of this permit], reduced

exhaust gas flow rate, and decreased stack height);

- c. Changes in the composition of the materials used, or use of new materials, that would result in the emission of an air contaminant not previously permitted; and
 - d. Changes in the composition of the materials, or use of new materials, that would result in an increase in emissions of any pollutant that has a listed TLV.
3. The Ohio EPA will not consider any of the above-mentioned as a "modification" requiring a permit to install, if the following conditions are met:
- a. The change is not otherwise considered a "modification" under OAC Chapter 3745-31;
 - b. The permittee can continue to comply with the allowable emission limitations specified in its permit to install; and
 - c. Prior to the change, the applicant conducts an evaluation pursuant to the Air Toxic Policy, determines that the changed emissions unit still satisfies the Air Toxic Policy, and the permittee maintains documentation that identifies the change and the results of the application of the Air Toxic Policy for the change.
- For any change to the emissions unit or its method of operation that either would require an increase in the emission limitation(s) established by this permit or would otherwise be considered a "modification" as defined in OAC rule 3745-31-01, the permittee shall obtain a final permit to install prior to the change.
4. All of the terms and conditions of this permit are federally enforceable pursuant to OAC rule 3745-35-07.

THIS IS NOT AN OFFICIAL VERSION OF THE PERMIT. SEE PAGE 1 FOR ADDITIONAL INFORMATION

Facility ID: 1652050075 Emissions Unit ID: Z001 Issuance type: Draft State Permit To Operate

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Part II - Special Terms and Conditions

This permit document constitutes a permit-to-install issued in accordance with ORC 3704.03(F) and a permit-to-operate issued in accordance with ORC 3704.03(G).

- 1. For the purpose of a permit-to-install document, the emissions unit terms and conditions identified below are federally enforceable with the exception of those listed below which are enforceable under state law only.
 - (a) None.
- 2. For the purpose of a permit-to-operate document, the emissions unit terms and conditions identified below are enforceable under state law only with the exception of those listed below which are federally enforceable.
 - (a) None.

A. Applicable Emissions Limitations and/or Control Requirements

- 1. The specific operation(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 employed. Additional applicable emissions limitations and/or control measures (if any) may be specified in narrative form following the table.

<u>Operations, Property, and/or Equipment</u>	<u>Applicable Rules/Requirements</u>	<u>Applicable Emissions Limitations/Control Measures</u>
Non-heatset newspaper press: maximum ink usage capacity @ 7.5 gals/hr, maximum ink density @ 8.2 lbs/gal, maximum ink organic material content @ 40% by weight; 95% of organic materials from the ink is retained in the web, while the remaining 5% of ink organic materials evaporate fugitively	OAC rule 3745-21-07	8 lbs/hr and 40 lbs/day of organic materials (these limits are greater than the emissions unit's potential to emit)
	OAC rule 3745-35-07	See A.2.b, A.2.c, A.2.d, and A.2.e below.

2. Additional Terms and Conditions

- (a) For the purpose of determining facility-wide emissions, the following applies:

During the last emission compliance testing performed on June 27, 1997, the thermal incinerator controlling the organic material emissions from K001 - K003 combined demonstrated an average destruction efficiency of 96.20%.

Also during the June 27, 1997 testing, the other thermal incinerator that controls the organic material emissions from K004 demonstrated an average destruction efficiency of 93.93%.

The permittee may use 93.93% destruction to determine facility-wide emissions of organic materials (resulting from heatset printing ink, fountain solution, and blanket wash) to simplify recordkeeping. If compliance is questionable, then the permittee reserves the right to use both tested incinerator destruction efficiencies.

Facility-wide emissions of organic materials and hazardous air pollutants (HAPs), per DAPC

guidance, shall be calculated for all emissions units as follows:

- i. 20% (by weight) of the solvent in the heatset inks is retained in the web after the dryer. Assuming 100% capture, the remaining 80% (by weight) of the organic materials and HAPs in the ink is vented to the thermal incinerator.
- ii. 95% (by weight) of the solvent in the non-heatset inks is retained in the web, and the remaining 5% (by weight) of the solvent is fugitive emissions.
- iii. For heatset printing lines, 30% of the fountain solution emissions is fugitive, and the remaining 70% of the fountain solution emissions is vented to the thermal incinerator.
- iv. For automatic blanket wash systems, 60% of the solvent is fugitive, and 40% is vented to the thermal incinerator. For manual blanket wash systems (i.e., hand-washing with rags), 50% of the solvent is fugitive and 50% is retained in the properly disposed of rags.
- v. To simplify calculations, the permittee may assume that only automatic blanket wash is employed when calculating facility-wide emissions of organic materials and HAPs. If compliance is questionable, then the permittee reserves the right to use both automatic and manual blanket wash system figures in the calculations.
- vi. A destruction efficiency of 93.93% shall be assumed for each of the two incinerators, per A.2.a above. The maximum annual facility-wide emissions of organic materials shall not exceed 99.0 TPY, based upon a rolling 12-month summation of the monthly emissions.

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

Month(s) Maximum Allowable Facility-Wide Cumulative Emissions of Organic Materials (Tons)

- 1 8.2
- 1-2 16.5
- 1-3 24.8
- 1-4 33.0
- 1-5 41.2
- 1-6 49.5
- 1-7 57.8
- 1-8 66.0
- 1-9 74.2
- 1-10 82.5
- 1-11 90.8
- 1-12 99.0

After the first 12 calendar months of operation following the issuance of this permit, compliance with the maximum annual facility-wide organic materials emission limitation shall be based upon a rolling, 12-month summation of the monthly emissions.

The maximum annual facility-wide emissions of any individual HAP shall not exceed 9.9 TPY, based upon a rolling 12-month summation of the monthly emissions.

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

Month(s) Maximum Allowable Facility-Wide Cumulative Emissions of any Individual HAP (Tons)

- 1 0.8
- 1-2 1.6
- 1-3 2.5
- 1-4 3.3
- 1-5 4.1
- 1-6 5.0
- 1-7 5.8
- 1-8 6.6
- 1-9 7.4
- 1-10 8.2
- 1-11 9.1
- 1-12 9.9

After the first 12 calendar months of operation following the issuance of this permit, compliance with the maximum annual facility-wide individual HAP emission limitation shall be based upon a rolling, 12-month summation of the monthly emissions.

The maximum annual facility-wide emissions of combined HAPs shall not exceed 24.9 TPY, based upon a rolling 12-month summation of the monthly emissions.

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

Month(s) Maximum Allowable Facility-Wide Cumulative Emissions of Combined HAPs (Tons)

- 1 2.1
- 1-2 4.2
- 1-3 6.2
- 1-4 8.3
- 1-5 10.4
- 1-6 12.4
- 1-7 14.5

1-8 16.6

1-9 18.7
 1-10 20.8
 1-11 22.8
 1-12 24.9

After the first 12 calendar months of operation following the issuance of this permit, compliance with the maximum annual facility-wide combined HAPs emission limitation shall be based upon a rolling, 12-month summation of the monthly emissions.

Hand rags and any other article used for cleanup shall be placed in a closed/sealed container, when not in use or for proper disposal, to reduce fugitive organic material emissions.

B. Operational Restrictions

1. None

C. Monitoring and/or Record Keeping Requirements

1. The permittee shall collect and record monthly the following information for all emissions units (including de minimis emissions units) to determine facility-wide emissions of organic materials:

- a. the company identification for each printing ink (heatset and non-heatset), fountain solution, and cleanup material (blanket-wash, thinning solvent, etc.) employed;
- b. the number of gallons of each ink employed;
- c. the number of gallons of each fountain solution employed;
- d. the number of gallons of each cleanup material employed;
- e. the organic material content of each ink employed, in pounds of organic material per gallon of ink;
- f. the organic material content of each fountain solution employed, in pounds of organic material per gallon of fountain solution;
- g. the organic material content of each cleanup material employed, in pounds of organic material per gallon of cleanup material;
- h. the available organic material from all inks employed, in pounds, i.e., the sum of (b)x(e) for all inks;
- i. the available organic material from all fountain solutions employed, in pounds, i.e., the sum of (c)x(f) for all fountain solutions;
- j. the available organic material from all cleanup materials employed, in pounds, i.e., the sum of (d)x(g) for all cleanup materials; and
- k. the total organic material emissions (stack and fugitive), in tons, i.e., $\frac{[(h) \times 0.8] + [(i) \times 0.7] + [(j) \times 0.4] \times [1 - 0.9393] + [(l) \times 0.3] + [(m) \times 0.6]}{2000}$.

Note: information for the equation in C.1.k is based on DAPC guidance as specified in A.2.b above.

2. The permittee shall collect and record monthly the following information for all emissions units (including de minimis emissions units) to determine facility-wide emissions of individual HAPs:

- a. the company identification for each printing ink (heatset and non-heatset), fountain solution, and cleanup material (blanket-wash, thinning solvent, etc.) employed;
- b. the number of gallons of each ink employed;
- c. the number of gallons of each fountain solution employed;
- d. the number of gallons of each cleanup material employed;
- e. the individual HAP content for each individual HAP of each ink employed, in pounds of individual HAP per gallon of ink;
- f. the individual HAP content for each individual HAP of each fountain solution employed, in pounds of individual HAP per gallon of fountain solution;
- g. the individual HAP content for each individual HAP of each cleanup material employed, in pounds of individual HAP per gallon of cleanup material;
- h. the available individual HAP for each individual HAP of each ink employed, in pounds, i.e., for each individual HAP, the sum of (b)x(e) for all inks;
- i. the available individual HAP for each individual HAP of each fountain solution employed, in pounds, i.e., for each individual HAP, the sum of (c)x(f) for all fountain solutions;
- j. the available individual HAP for each individual HAP of each cleanup material employed, in pounds, i.e., for each individual HAP, the sum of (d)x(g) for all cleanup materials;
- k. the individual HAP emissions for each individual HAP from all inks, fountain solutions, and cleanup materials employed, in tons, i.e., for each individual HAP, $\frac{[(h) \times 0.8] + [(i) \times 0.7] + [(j) \times 0.4] \times [1 - 0.9393] + [(l) \times 0.3] + [(m) \times 0.6]}{2000}$;
- l. during the first 12 calendar months of operation following the issuance of this permit, the cumulative monthly individual HAP emissions for each individual HAP, in tons; and
- m. after the first 12 calendar months of operation following the issuance of this permit, the summation of the previous 12 calendar months of monthly individual HAP emissions for each individual HAP, in tons per year.

3. The permittee shall collect and record monthly the following information for all emissions units (including de minimis emissions units) to determine facility-wide emissions of combined HAPs:

- a. the company identification for each printing ink (heatset and non-heatset), fountain solution, and cleanup material (blanket-wash, thinning solvent, etc.) employed;
- b. the number of gallons of each ink employed;
- c. the number of gallons of each fountain solution employed;
- d. the number of gallons of each cleanup material employed;
- e. the combined HAPs content of each ink employed, in pounds of combined HAPs per gallon of ink;
- f. the combined HAPs content of each fountain solution employed, in pounds of combined HAPs per gallon of fountain solution;
- g. the combined HAPs content of each cleanup material employed, in pounds of combined HAPs per gallon of cleanup material;
- h. the available combined HAPs of each ink employed, in pounds per month, i.e., the sum of (b)x(e) for all inks;
- i. the available combined HAPs of each fountain solution employed, in pounds per month, i.e., the sum of (c)x(f) for all fountain solutions;
- j. the available combined HAPs of each cleanup material employed, in pounds per month, i.e., the sum of (d)x(g) for all cleanup materials;
- k. the combined HAPs emissions from all inks, fountain solutions, and cleanup materials employed, in tons, i.e.,

$\frac{[(h) \times 0.8] + [(i) \times 0.7] + [(j) \times 0.4] \times [1 - 0.9393] + [(i) \times 0.3] + [(j) \times 0.6]}{2000}$;

- l. during the first 12 calendar months of operation following the issuance of this permit, the cumulative monthly combined HAPs emissions, in tons; and
 - m. after the first 12 calendar months of operation following the issuance of this permit, the summation of the previous 12 calendar months of monthly combined HAPs emissions, in tons per year.
4. The permittee shall collect and record the following information each day for the printing line:
- a. The name and identification number of each ink, solvent (thinner, retarder, fountain solution, etc.), and photochemically reactive cleanup material employed.
 - b. The number of gallons of each ink, solvent, and photochemically reactive cleanup material employed.
 - c. The organic compound content of each ink, solvent, and photochemically reactive cleanup material, in pounds per gallon.
 - d. The total organic compound emission rate from all inks, solvents, and photochemically reactive cleanup materials, in pounds per day, i.e., $d = \text{sum of } [b \times c]$ for all inks, solvents, and photochemically reactive cleanup materials.
 - e. The total number of hours the emissions unit was in operation.
 - f. The average hourly organic compound emission rate from all inks, solvents, and photochemically reactive cleanup materials, in pounds per hour (average), i.e., $f = d/e$.
- [Note: The definition of "photochemically reactive material" is based upon OAC rule 3745-21-01(C)(5).]
5. The permittee shall collect and record the following information for each change where the air toxic modeling was required pursuant to the Air Toxic Policy:
- a. background data that describes the parameters changed (composition of materials, new pollutants emitted, change in stack/exhaust parameters, etc.); and
 - b. a copy of the resulting computer model runs that show the results of the application of the Air Toxic Policy for the change.

D. Reporting Requirements

1. The permittee shall submit deviation (excursion) reports that identify each calendar month, of the first 12 calendar months of operation after the issuance of this permit, during which the cumulative monthly facility-wide emissions of any individual HAP exceeded the allowable cumulative monthly facility-wide emission limit.
2. The permittee shall submit deviation (excursion) reports that identify each rolling 12-month summation, after the first 12 calendar months of operation following the issuance of this permit, during which the 12-month summation of facility-wide emissions of any individual HAP exceeded the allowable facility-wide emission limit of 9.9 TPY.
3. The permittee shall submit deviation (excursion) reports that identify each calendar month, of the first 12 calendar months of operation after the issuance of this permit, during which the cumulative monthly facility-wide emissions of combined HAPs exceeded the allowable cumulative monthly facility-wide emission limit.
4. The permittee shall submit deviation (excursion) reports that identify each rolling 12-month summation, after the first 12 calendar months of operation following the issuance of this permit, during which the 12-month summation of facility-wide emissions of combined HAPs exceeded the allowable facility-wide emission limit of 24.9 TPY.
5. The permittee shall submit deviation (excursion) reports that identify each calendar month, of the first 12 calendar months of operation after the issuance of this permit, during which the cumulative monthly facility-wide emissions of organic materials exceeded the allowable cumulative monthly facility-wide emission limit.
6. The permittee shall submit deviation (excursion) reports that identify each rolling 12-month summation, after the first 12 calendar months of operation following the issuance of this permit, during which the 12-month summation of facility-wide emissions of organic materials exceeded the allowable facility-wide emission limit of 99.0 TPY.
7. The permittee shall submit deviation (excursion) reports which include the following information:
 - a. An identification of each day during which the average hourly organic compound emissions from the inks, solvents, and photochemically reactive cleanup materials exceeded 8 pounds per hour, and the actual average hourly organic compound emissions for each such day.
 - b. An identification of each day during which the organic compound emissions from the inks, solvents, and photochemically reactive cleanup materials exceeded 40 pounds per day, and the actual organic compound emissions for each such day.
8. Deviation (excursion) reports, as mentioned above, shall be submitted in accordance with the procedures required in Part I: General Terms and Condition #3.
9. The permittee shall submit in writing annual reports to the Director (appropriate District Office or local air agency) which specify the total organic material emissions, in tons, the total individual HAP emissions, in tons, and the total combined HAP emissions, in tons, from this facility for the previous calendar year. Each report shall be submitted by January 31 of each year.

E. Testing Requirements

1. Compliance with the emission limitations in Section A of these terms and conditions shall be determined in accordance with the following methods:
Formulation data or USEPA Methods 24/24A shall be used to determine the organic material and HAP contents

of the fountain solutions, cleanup materials, and inks.

Emission Limitation:

Maximum allowable cumulative monthly facility-wide organic material emissions for the first 12 calendar months of operation following the issuance of this permit.

Applicable Compliance Method:

The permittee shall demonstrate compliance with the above limitation based upon the recordkeeping requirements of these T&C's.

Emission Limitation:

Maximum allowable annual facility-wide organic material emissions, after the first 12 calendar months of operation following the issuance of this permit, shall not exceed 99.0 TPY.

Applicable Compliance Method:

The permittee shall demonstrate compliance with the above limitation based upon the recordkeeping requirements of these T&C's.

Emission Limitation:

Maximum allowable cumulative monthly facility-wide individual HAP emissions for the first 12 calendar months of operation following the issuance of this permit.

Applicable Compliance Method:

The permittee shall demonstrate compliance with the above limitation based upon the recordkeeping requirements of these T&C's.

Emission Limitation:

Maximum allowable annual facility-wide individual HAP emissions, after the first 12 calendar months of operation following the issuance of this permit, shall not exceed 9.9 TPY.

Applicable Compliance Method:

The permittee shall demonstrate compliance with the above limitation based upon the recordkeeping requirements of these T&C's.

Emission Limitation:

Maximum allowable cumulative monthly facility-wide combined HAPs emissions for the first 12 calendar months of operation following the issuance of this permit.

Applicable Compliance Method:

The permittee shall demonstrate compliance with the above limitation based upon the recordkeeping requirements of these T&C's.

Emission Limitation:

Maximum allowable annual facility-wide combined HAPs emissions, after the first 12 calendar months of operation following the issuance of this permit, shall not exceed 24.9 TPY.

Applicable Compliance Method:

The permittee shall demonstrate compliance with the above limitation based upon the recordkeeping requirements of these T&C's.

Compliance with the hourly and daily organic material emission limits for this emissions unit shall be based upon the record keeping requirements contained in the Monitoring and/or Recordkeeping Requirements section of this permit.

F. Miscellaneous Requirements

1. This permit allows the use of materials (typically coatings and cleanup materials) specified by the permittee in the permit to install application for this emissions unit. To fulfill the best available technology requirements of Ohio Administrative Code (OAC) rule 3745-31-05 and to ensure compliance with OAC rule 3745-15-07 (Air Pollution Nuisances Prohibited), pollutant ground-level concentrations were established using the Ohio EPA's "Air Toxic Policy" and are based on both the materials used and the design parameters of the emissions unit's exhaust system, as specified in the application. The Ohio EPA's "Air Toxic Policy" was applied for ethylene glycol using the SCREEN 3.0 model and comparing the predicted 1-hour maximum ground-level concentration to the Maximum Acceptable Ground-Level Concentration (MAGLC). The following summarizes the results of the modeling for ethylene glycol:

Pollutant: ethylene glycol (CAS 107-21-1)

TWA (mg/m3): 127

Maximum Average Hourly Emission Rate (lbs/hr): 18.1

Predicted 1-Hour Maximum Ground-Level Concentration at 27 m (mg/m3): 1.3

Maximum Acceptable Ground-Level Concentration (MAGLC) (mg/m3): 3.0

2. OAC Chapter 3745-31 requires permittees to apply for and obtain a new or modified permit to install prior to making a "modification" as defined by the OAC rule 3745-31-01. The permittee is hereby advised that the following changes to the process may be determined to be a "modification":
 - a. Changes in the composition of the materials used (typically for coatings or cleanup materials), or the use of new materials, that would result in the emission of a compound with a lower Threshold Limit Value (TLV), as indicated in the most recent version of the handbook entitled "American Conference of Governmental Industrial Hygienists (ACGIH)," than the TLV value specified in the above table;

- b. Changes to the emissions unit or its exhaust parameters (e.g., increased emission rate [not including an increase in an "allowable" emission limitation specified in the terms and conditions of this permit], reduced exhaust gas flow rate, and decreased stack height);
 - c. Changes in the composition of the materials used, or use of new materials, that would result in the emission of an air contaminant not previously permitted; and
 - d. Changes in the composition of the materials, or use of new materials, that would result in an increase in emissions of any pollutant that has a listed TLV.
 3. The Ohio EPA will not consider any of the above-mentioned as a "modification" requiring a permit to install, if the following conditions are met:
 - a. The change is not otherwise considered a "modification" under OAC Chapter 3745-31;
 - b. The permittee can continue to comply with the allowable emission limitations specified in its permit to install; and
 - c. Prior to the change, the applicant conducts an evaluation pursuant to the Air Toxic Policy, determines that the changed emissions unit still satisfies the Air Toxic Policy, and the permittee maintains documentation that identifies the change and the results of the application of the Air Toxic Policy for the change.

For any change to the emissions unit or its method of operation that either would require an increase in the emission limitation(s) established by this permit or would otherwise be considered a "modification" as defined in OAC rule 3745-31-01, the permittee shall obtain a final permit to install prior to the change.
 4. All of the terms and conditions of this permit are federally enforceable pursuant to OAC rule 3745-35-07.