Facility ID: 1431070992 Issuance type: Final State Permit To Operate

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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.

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

Facility ID: 1431070992 Emissions Unit ID: R011 Issuance type: Final 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.

Operations, Property, and/or Equipment	Applicable Rules/Requirements	Applicable Emissions Limitations/Control Measures
heatset web offset press with dryer (oven) and regenerative thermal oxidizer - Mitsubishi Web	OAC rule 3745-31-05(A)(3) (PTI 14-4841)	360.34 lbs/day of organic compound (OC) emissions* 0.551 lb/hr of particulate emissions (PE) 0.551 lb/hr of particulate matter with a diameter of 10 microns or less (PM10 emissions) 2.41 tons per year (TPY) of PE 2.41 TPY of PM10 emissions 32.60 TPY of OC emissions* 32.60 TPY of OC emissions, based upon a rolling, 12-month summation* See Sections A.2.a, A.2.b, A.2.d, A.2.e, A.2.f, A.2.h, B.2 and B.4 below. * includes OC emissions from inks, fountain solutions and blanket wash materials.
	OAC rule 3745-17-11(B)(1)	The PE limitation specified by this rule is less stringent than the PE limitation established pursuant to OAC rule 3745-31-05(A)(3).
	OAC rule 3745-17-07(A)(1)	See Section A.2.c below.
	OAC rule 3745-21-07(G)(2)	See Section B.1 below.

2. **Additional Terms and Conditions**

   (a) The total allowable usage of hazardous air pollutants (HAPs), as identified in Section 112(b) of Title III of the Clean Air Act, from this facility shall not exceed 9.9 TPY for any single HAP and 24.9 TPY for any combination of HAPs. Compliance with the above limitations shall be based on a rolling, 12-month summation.
   The maximum OC content of the inks, fountain solutions, and blanket wash materials, as applied, shall not exceed the following:

   Ink: 45% by weight of OC
   Fountain Solution: 0.65 lb of OC/gallon
   Blanket Wash: 6.6 lbs of OC/gallon
   Visible PE from any stack shall not exceed 20 percent opacity, as a six-minute average, except as specified by rule.
   The maximum annual ink usage for this emissions unit shall not exceed 400,000 pounds per year, based upon a rolling, 12-month summation of the ink usage figures.
   The maximum annual fountain solution usage for this emissions unit shall not exceed 120,000 gallons per year, based upon a rolling, 12-month summation of the fountain solution usage figures.
   The maximum annual blanket wash material usage for this emissions unit shall not exceed 3,000 gallons per year, based upon a rolling, 12-month summation of the blanket wash material usage figures.
   The daily OC emission limitation represents the emissions unit's potential to emit from inks and fountain

solutions employed in a 24-hour period, plus OC emissions from blanket wash materials (cleanup materials) with an operational restriction of 20 gallons/day. Therefore, no daily records are required to demonstrate compliance with this limit and compliance is ensured with the daily OC emission limitation if compliance is maintained with the blanket wash operational restriction.
The permittee shall operate and maintain a regenerative thermal oxidizer capable of maintaining, at a minimum, a 92.5% (by weight of OC) control efficiency at maximum hourly coating capacity from the regenerative thermal oxidizer exhaust for emissions units R005, R007 and R011.

B. **Operational Restrictions**

1. The use of any photochemically reactive material as defined in OAC rule 3745-21-01(C)(5) is prohibited in this emissions unit.

   Prior to employing any photochemically reactive material in this emissions unit, including any blanket wash material that is a photochemically reactive material, the permittee shall provide written notification to the Hamilton County Department of Environmental Services. Such notification shall include information sufficient to determine compliance with the emission limits and/or control requirements specified in OAC rule 3745-21-07 (G). This notification, at a minimum, shall include the company identification of the new material to be employed, the solvent composition of the material, and the maximum amount to be used, in pounds per hour, and pounds per day.

2. The maximum daily blanket wash material usage for this emissions unit shall not exceed 20 gallons per day.

3. The average combustion temperature within the regenerative thermal oxidizer, for any 3-hour block of time when the emissions unit is in operation, shall not be more than 50 degrees Fahrenheit below the average temperature during the most recent emission test that demonstrated the emissions unit was in compliance.

C. **Monitoring and/or Record Keeping Requirements**

1. The permittee shall collect and record the following information each day for blanket wash materials employed in this emissions unit:

   a. the company identification (including product name per Material Safety Data Sheet) for each blanket wash material employed;

   b. documentation on whether or not each blanket wash material is a photochemically reactive material as identified in OAC rule 3745-21-01(C)(5);

   c. the number of gallons of each blanket wash material employed;

   d. the total number of gallons of all blanket wash materials employed; and

   e. the OC content, in lbs/gallon, of each blanket wash material, as applied.

2. The permittee shall collect and record the following information each month for each material employed in this emissions unit:

   a. the company identification for each ink and fountain solution employed;

   b. a record of each ink and fountain solution employed in this emissions unit indicating whether or not the ink or fountain solution is a photochemically reactive material as defined in OAC rule 3745-21-01(C)(5);

   c. the total number of gallons of all blanket wash material employed (summation of C.1.d for each day of the calendar month);

   d. the amount, in pounds, of each ink employed;

   e. the amount, in gallons, of each fountain solution employed;

   f. the OC content of each ink, as applied, in percent by weight;

   g. the OC content of each fountain solution, as applied, in lbs/gallon;

   h. the updated rolling, 12-month summation of all inks employed, in pounds;

   i. the updated rolling, 12-month summation of all fountain solutions employed, in gallons;

   j. the updated rolling, 12-month summation of all blanket wash materials employed, in gallons;
   k. the total OC emissions for the calendar month, in tons [summation of (d x (f/100%) x 0.8* x (1 - the fractional control efficiency of the thermal oxidizer (0.925))) for all inks, plus the summation of (e x g x 0.5* x (1 - the fractional control efficiency of the thermal oxidizer (0.925))) for all fountain solutions (for dryer emissions), plus the summation of (e x g x 0.5*) for all fountain solutions (for fugitive emissions), plus the summation of (C.1.c x C.1.e x 0.4* x (1 - the fractional control efficiency of the thermal oxidizer (0.925))) for all blanket wash materials employed (for dryer emissions) plus the summation of (C.1.c x C.1.e x 0.6*) for all blanket wash materials employed (for fugitive emissions), and divided by 2,000 lbs/ton;

   l. the updated rolling, 12-month summation of the total OC emissions, in tons.

   * The calculation uses an estimate of 20% retention by weight of OC in the web for the inks, 50% by weight of OC from fountain solutions employed is vented to the dryer, 50% by weight of the OC from fountain solution is vented as fugitive emissions, 60% retention by weight of OC from the blanket wash materials employed is vented to the dryer, and a 40% by weight of OC from the blanket wash materials employed is vented as fugitive emissions.

3. The permittee shall maintain annual records of the total OC emissions, in tons, for the calendar year (summation of C.2.k for each month of the calendar year).

4. The permittee shall collect and record the following information each month for the entire facility:

a. the name and identification number of all inks and fountain solutions employed;

b. the individual HAP content for each HAP of each ink and fountain solution, in pounds of individual HAP per pound of ink (or per gallon of fountain solution), as applied;

c. the total combined HAP content of each ink and fountain solution, in pounds of combined HAPs per pound of ink (or per gallon of fountain solution), as applied [sum all the individual HAP contents from (b)];

d. the number of pounds of each ink and gallons of each fountain solution employed;

e. the name and identification of each blanket wash material employed;

f. the individual HAP content for each HAP of each blanket wash material, in pounds of individual HAP per gallon of blanket wash material, as applied;

g. the total combined HAP content of each blanket wash material, in pounds of combined HAPs per gallon of blanket wash material, as applied [sum all the individual HAP contents from (f)];
h. the number of gallons of each blanket wash material employed;

i. the total individual HAP usage for each HAP from all inks, fountain solutions and blanket wash materials employed, in pounds or tons per month [for each HAP, the sum of (b) x (d) x 0.8* x (1 - the fractional control efficiency of the thermal oxidizer (0.925)) for each ink, plus the sum of (b) x (d) x 0.5* x (1-the fractional control efficiency of the thermal oxidizer (0.925)) for each fountain solution (for dryer emissions), plus the sum of (b) x (d) x 0.5* for each fountain solution (for fugitive emissions), plus the sum of (f) x (h) x 0.4* x (1 - the fractional control efficiency of the thermal oxidizer (0.925)) for each blanket wash material (for dryer emissions), plus the sum of (f) x (h) x 0.6* for each blanket wash material (for fugitive emissions), and divided by 2,000 lbs/ton if the units are in tons];

j. the total combined HAP usage from all inks, fountain solutions and blanket wash materials employed, in pounds or tons per month [for each HAP, the sum of (c) x (d) x 0.8* x (1 - the fractional control efficiency of the thermal oxidizer (0.925)) for each ink, plus the sum of (c) x (d) x 0.5* x (1 - the fractional control efficiency of the thermal oxidizer (0.925)) for each fountain solution (for dryer emissions), plus the sum of (c) x (d) x 0.5* for each fountain solution (for fugitive emissions), plus the sum of (g) x (h) x 0.4* x (1 - the fractional control efficiency of the thermal oxidizer (0.925)) for each blanket wash material (for dryer emissions), plus the sum of (g) x (h) x 0.4* for each blanket wash material (for fugitive emissions), and divided by 2,000 lbs/ton if the units are in tons];
k. the updated rolling, 12-month summation of usage for each individual HAP emissions, in tons (this shall include the information for the current month and the preceding eleven calendar months); and

l. the updated rolling, 12-month summation of usage for total combined HAP emissions, in tons. This shall include the information for the current month and the preceding eleven calendar months.

* The calculation uses an estimate of 20% retention by weight of OC in the web for the inks, 50% by weight of OC from fountain solutions employed is vented to the dryer and 50% by weight of the OC from fountain solutions is vented as fugitive emissions, 60% retention by weight of OC from the blanket wash materials employed is vented to the dryer, and 40% by weight of OC from the blanket wash materials employed is vented as fugitive emissions.

A listing of the HAPs can be found in Section 112(b) of the Clean Air Act or can be obtained by contacting your Hamilton County Department of Environmental Services' contact. This information does not have to be kept on a line-by-line basis.

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

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

a. All 3-hour blocks of time during which the average combustion temperature within the thermal oxidizer, when the emissions unit was in operation, was more than 50 degrees Fahrenheit below the average temperature during the most recent emission test that demonstrated the emissions unit was in compliance.

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

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

The following summarizes the results of the modeling for the "worst case" pollutants:

Pollutant: Glycol Ethers
TLV (ug/m3): 121,000
Maximum Hourly Emission Rate (lbs/hr): 73.92
Predicted 1-Hour Maximum Ground-Level Concentration (ug/m3): 2,775
MAGLC (ug/m3): 2,880

Pollutant: Ethylene Glycol
TLV (ug/m3): 100,000

Maximum Hourly Emission Rate (lbs/hr): 9.39
Predicted 1-Hour Maximum Ground-Level Concentration (ug/m3): 351.8
MAGLC (ug/m3): 2,381

Pollutant: Naphthalene
TLV (ug/m3): 52,400
Maximum Hourly Emission Rate (lbs/hr): 26.02
Predicted 1-Hour Maximum Ground-Level Concentration (ug/m3): 977.8
MAGLC (ug/m3): 1,247

Physical changes to or in the method of operation of the emissions unit after its installation or modification could affect the parameters used to determine whether or not the "Air Toxics Policy" is satisfied. Consequently, prior to making a change that could impact such parameters, the permittee shall conduct an evaluation to determine that the "Air Toxics Policy" will still be satisfied. If, upon evaluation, the permittee determines that the "Air Toxics Policy" will not be satisfied, the permittee shall not make the change. Changes that can affect the parameters used in the "Air Toxics Policy" include the following:
a. changes in the composition of the materials used, or the use of new materials that would result in the emission of a compound with a lower Threshold Limit Value (TLV), as indicated in the most recent version of the handbook entitled "American Conference of Governmental Industrial Hygienists (ACGIH)," than the lowest TLV value previously modeled;

b. changes in the composition of the materials, or use of new materials, that would result in an increase in emissions of any pollutant with a listed TLV that was proposed in the application and modeled; and

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

If the permittee determines that the "Air Toxics Policy" will be satisfied with the above changes, Ohio EPA will not consider the change(s) to be a "modification" under OAC rule 3745-31-01(VV)(1)(a)(ii), and a modification of the existing permit to install will not be required. If the change(s) is (are) defined as a modification under other provisions of the modification definition [other than (VV)(1)(a)(ii)], then the permittee shall obtain a final permit to install prior to the change.
The permittee shall collect, record, and retain the following information when it conducts evaluations to determine that the changed emissions unit will satisfy the "Air Toxics Policy":

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

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

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

D. **Reporting Requirements**

1. The permittee shall notify the Hamilton County Department of Environmental Services in writing, identifying each day during which any photochemically reactive material [as defined in OAC rule 3745-21-01(C)(5)] was employed in this emissions unit. This report shall identify the cause for the use of the photochemically reactive material(s) and the estimated total quantity of material(s) emitted each such day. This report shall be submitted to the Hamilton County Department of Environmental Services within 30 days after the occurrence.

2. The permittee shall submit annual reports that specify the total OC emissions, and the individual and combined HAP emissions, in tons, from this emissions unit. These reports shall be submitted by January 31 of each year and cover the previous calendar year.

3. The permittee shall submit quarterly deviation (excursion) reports that identify:

   a. Any exceedance of the blanket wash material usage limitation (i.e., 20 gallons per day of blanket wash materials);

   b. All exceedances of the OC content limitations for inks, fountain solutions and blanket wash materials;

   c. An identification of all exceedances of the rolling, 12-month usage limitations for all materials employed in this emissions unit (i.e., inks, fountain solutions and blanket wash materials);

   d. An identification of all exceedances of the rolling, 12-month OC emission limitation; and

   e. An identification of all exceedances of the rolling, 12-month HAP emission limitations of 9.9 tons and 24.9 tons for any single HAP and combination of HAPs, respectively.

4. The permittee shall submit quarterly deviation (excursion) reports that identify all 3-hour blocks of time during which the average combustion temperature within the regenerative thermal oxidizer did not comply with the temperature limitation specified in Section C.5. This report shall include the allowable operating temperature determined during the last emissions test.

5. The deviation reports shall be submitted in accordance with the reporting requirements of the General Terms and Conditions of this permit.

E. **Testing Requirements**

1. Compliance with the OC emission, PE, visible PE and PM10 emission limitations, HAP emission limitations, OC content restrictions, material usage restrictions and the thermal oxidizer control efficiency requirements shall be determined by the following methods:
   OC Emission Limitation: 360.34 lbs/day of OC emissions

   Applicable Compliance Method: The daily OC emission limitation represents the emissions unit's potential to emit for inks and fountain solutions and was based on the maximum daily usage rates [480 gallons/day (4,800

lbs/day) for inks and 422.4 gallons/day for fountain solutions], web retention factors and maximum OC contents of the materials employed, and an operational restriction of 20 gallons/day for blanket wash materials.

Compliance with the daily OC emission limitation shall be determined as follows:

Maximum OC Emissions (lbs/day) = [maximum pounds (or maximum gallons) of ink employed/day x maximum OC content of ink, in weight percent (or lbs/gallon) x 0.80 (20% retention of the OC in the web for inks) x (1 - the control efficiency of the thermal oxidizer (0.925))] + [maximum gallons of fountain solution employed/day x maximum OC content of the fountain solution (lbs/gallon) x 0.50 (50% of the OC goes to the dryer) x (1 - the control efficiency of the thermal oxidizer (0.925)), for dryer emissions] + [maximum gallons of fountain solution employed/day x maximum OC content of the fountain solution (lbs/gallon) x 0.50 (50% of the OC is emitted as fugitive emissions), for fugitive emissions] + [maximum gallons of blanket wash material employed/day x maximum OC content of the blanket wash material (lbs/gallon) x 0.40 (40% of the OC goes to the dryer) x (1 - the control efficiency of the thermal oxidizer (0.925)), for dryer emissions] + [maximum gallons of blanket wash material employed/day x maximum OC content of the blanket wash material (lbs/gallon) x 0.60 (60% of the OC is emitted as fugitive emissions), for fugitive emissions]

In addition, compliance with the daily OC emission limitation is ensured if compliance is maintained with the daily operational restriction (20 gallons/day) for the blanket wash materials.
PE Limitation: 0.551 lb/hr of PE;

Applicable Compliance Method: If testing is required to demonstrate compliance with the allowable emission limitation of 0.551 pound of PE per hour, then testing shall be conducted using the following methods: Methods 1 through 5, 40 CFR, Part 60, Appendix A.
PM10 Emission Limitation: 0.551 lb/hr of PM10 emissions

Applicable Compliance Method: If testing is required to demonstrate compliance with the allowable emission limitation of 0.551 pound of PM10 per hour, then testing shall be conducted using the following methods: Methods 1 through 4 and 201, 40 CFR, Part 60, Appendix A.
PE/PM10 Emission Limitations: 2.41 TPY of PE; 2.41 TPY of PM10 emissions

Applicable Compliance Method: The 2.41 TPY emission limitations were determined by multiplying the 0.551 lb/hr emission limitation by the maximum operating schedule of 8,760 hours per year, and dividing by 2,000 pounds per ton. Therefore, compliance with the annual PE and PM10 emission limitations is ensured if compliance is maintained with the hourly PE and PM10 emission limitations.
OC Emission Limitation: 36.60 TPY of OC emissions, based upon a rolling, 12-month summation

Applicable Compliance Method: Compliance shall be based upon the record keeping requirements specified in Section C.2.
OC Emission Limitation: 32.60 TPY of OC emissions

Applicable Compliance Method: Compliance with the annual OC emission limitation shall be determined by the record keeping requirements specified in Section C.3.
HAP Emission Limitations: HAP emissions of 9.9 TPY or less for any single HAP and 24.9 TPY or less for any combination of HAPs

Applicable Compliance Method: Compliance shall be based upon the record keeping requirements specified in Section C.4.
h. OC Content Restrictions:

Ink: 45% by weight of OC
Fountain Solution: 0.65 lb of OC/gallon
Blanket Wash: 6.6 lbs of OC/gallon

Applicable Compliance Method: Compliance with the OC content restrictions shall be determined by the record keeping specified in Sections C.1 and C.2. Formulation data or U.S. EPA Method 24 (for coatings) or 24A (for flexographic and rotogravure printing inks and related coatings) shall be used to determine the OC contents of the inks and fountain solutions. Formulation data shall be used to determine the OC content of the blanket wash materials.
i. Material Usage Restrictions: ink usage not to exceed 400,000 pounds per year, based upon a rolling, 12-month summation; fountain solution usage not to exceed 120,000 gallons per year, based upon a rolling,12-month summation; blanket wash material usage not to exceed 3,000 gallons per year, based upon a rolling, 12-month summation

Applicable Compliance Method: Compliance with the material usage rate restrictions shall be determined by the record keeping specified in Section C.2.
Visible PE Limitation: visible PE from any stack shall not exceed 20 percent opacity, as a six-minute average, except as specified by rule

Applicable Compliance Method: Compliance with the visible PE limitation shall be determined by the method specified in OAC rule 3745-17-03(B)(1).
Control Efficiency Limitation: regenerative thermal oxidizer with a minimum OC emission control efficiency of 92.5%

Applicable Compliance Method: If required, the permittee shall demonstrate compliance through inlet/outlet emission tests performed in accordance with 40 CFR, Part 60, Appendix A, Methods 1-4 and 25 or 25A.

F. **Miscellaneous Requirements**

1. None